Bay Area Air Quality Management District

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Permit Evaluation
and
Statement of Basis
for
RENEWAL of

MAJOR FACILITY REVIEW PERMIT

for

City of Santa Rosa Wastewater Treatment
Facility #A1403

Facility Address:
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Santa Rosa, CA 95407

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Applications: 3925, 608, 4251, 4855, 4928

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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 Title 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 A1403.

This facility received its initial Title V permit on July 1, 1997. This application is for a permit renewal. Although the current permit expired on June 30, 2002, it continues in force until the District takes final action on the permit renewal. This "application shield" applies since the permit holder submitted a complete renewal application to the District on 12/28/01, which is more than six months prior to the permit expiration date. The proposed permit shows all changes to the permit in strikeout/underline format.

B. Facility Description

The City of Santa Rosa Wastewater Treatment Plant, (aka City of Santa Rosa - Laguna Subregional Wastewater Reclamation Facility; or Laguna Wastewater Reclamation) is a publicly owned treatment works (POTW) facility that provides wastewater collection, treatment and disposal services to the residents and businesses of Santa Rosa, Sebastopol, Cotati and Rohnert Park. The sources that are permitted include liquid and semi-liquid wastewater process sources, and a number of combustion sources to convert the plant produced digester gas into electricity and hot water to supply the plant energy needs. Liquid sources include preliminary treatment, primary treatment, flow equalization, secondary treatment, secondary clarification, disinfection by UV light, sludge handling, and sludge digestion. Combustion operations include a pair of identical hot water boilers, emergency standby diesel generator sets, a digester gas emergency flare, and a trio of cogeneration engine generators.

Average dry weather wastewater flow capacity is approximately 17,600,000 gal/day. Average wet weather flow capacity is approximately 22,740,000 gal/day. The wastewater processes at Laguna are similar to any other "traditional" municipal wastewater treatment facility. The wastewater plant receives flows from a number of satellite pump stations throughout the aforementioned service area. Plant processes render the influent homogeneous, allow for physical separation to occur and hasten the occurrence of normal biological processes. The liquid and semi-solid wastes are processed such that the process resulting sludge is converted into digester gas fuel with residual biomass for offsite disposal. Effluent water outflow meets regional water quality control board standards for discharge or reuse.

The criteria pollutant emissions from the combustion processes, specifically the NOx and CO have the potential to emit more than 100 tons per year, hence the need for a Federal Title V Major Facility Permit.

There has been no significant change in emissions since the initial Title V permit issuance.

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.

There are no changes to this section.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by 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.

The District has reviewed the operations at Laguna and concludes that there are no sources at this facility that are exempt and significant, as defined above.

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 "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. The equipment list has been revised to clarify the equipment names or description or to remove portions of the description that are obsolete. For example, in the case of the cogeneration engines S-29, 30 and 31, the capacity listed for this equipment as shown in the original Title V permit was *750 hp. before 6/15/97; 1160 hp. after 6/15/97*. This is erroneous and should have never been included in the equipment description. The engines were converted to lean burn from 1989 to 1991, and at that time were in blower operation. The project to convert the engines from blower operation to cogeneration was started in 1993 and completed by around 1996. The descriptions and capacities are being corrected to reflect the actual sizes (as of the early 1990's) and the actual service (cogeneration).

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.

Following are explanations of the differences in the equipment list between the time that the initial Title V permit was issues and the permit proposal date:

Changes to permit:

Devices Removed from Service or Archived since initial- Major Facility Review permit was issued:

Source #	Description	Application Number	Explanation
S-30	Internal Combustion lean burn engine #2 (digester gas, natural gas)	4928	Engine failed in 2002. Replaced with identical new engine, S-35 in AN 4928

Devices Permitted Since initial Major Facility Review permit was issued:

Source #	Description	Application Number	Explanation
S-32	Recycle Grinder, Diesel, 375 HP, Portable	608	Permitted under NSR to grind up green waste matls
S-33	Diesel Engine BUG #1, Caterpillar 3516, 2836 HP	4251	Permitted under loss of exemption
S-34	Diesel Engine BUG #2, Caterpillar 3516, 2836 HP	4251	Permitted under loss of exemption
S-35	Internal Combustion Lean Burn Cogeneration Engine #4 (digester gas, natural gas)	4928	Replacement engine for S-30, which failed in 2002
S-36	Portable Compressor, Diesel Fired, John Deere 300 Series, 70 HP	4855	Permitted under loss of exemption
S-37	Portable Pump, Diesel Fired, Deutz F4L912, 51 HP	5855	Permitted under loss of exemption
S-38	Portable Pump, Diesel Fired, Deutz F4L912, 51 HP	5855	Permitted under loss of exemption

District permit applications not included in this proposed permit

Application 13520, for a diesel powered trammel screen is undergoing review. This application has not been included in this Title V renewal application, but will instead be addressed in a future Title V permit revision application.

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered *significant sources* pursuant to the definition in BAAQMD Rule 2-6-239. This facility has no unpermitted significant sources.

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 determination-POTW NESHAP: 40 CFR Part 63, Subpart VVV, promulgated October 26, 1999, contains the NESHAP standards for POTWs. This NESHAP was evaluated to determine if Laguna was subject to the MACT emission control requirements. The NESHAP requires MACT controls at POTWS which are major sources for HAP which are defined thusly: …*any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate 10 tons per year (tpy) or more of any HAP or 25 tpy or more of any combination of HAP.*

The District has reviewed the wastewater borne emissions potential of the most frequently seen HAPs and conclude that City of Santa Rosa-Laguna Wastewater Reclamation Facility is not a major source for HAP emissions or for combined HAP emissions. A conservative estimate of HAP emissions may be obtained by using the 80^{th} % factors as developed by the BAAT-AMSA – CWEA studies in the 1990s. This procedure is the most conservative of the 7 accepted procedures developed for calculating emissions from wastewater processes. Most conservatively, the total plant throughput would have to be over 177 million gallons per dry-weather day on an ongoing basis to be a major source for HAP, based on the 80^{th} percentile (most conservative) calculation basis. The Laguna Wastewater Reclamation Facility's maximum

design dry weather flow rate is 21.3 million gallons per day and the average dry weather flowrate is 17.6 MM gpd. Therefore, we conclude the facility is not a major source for HAP.

In addition, this POTW is an existing POTW that has not been reconstructed (as defined by 40 CFR 63.1595). Furthermore, Laguna is not an Industrial POTW as defined by 40 CFR 63.1595. Laguna processes strictly domestic wastewater streams.

Digester Gas Combustion, Applicable Regulation 8 Rule: The anaerobic digesters S-190 produce digester gas, which is principally combusted in the digester gas engines or hot water boilers, and secondarily in the digester gas flare. The composition of the digester gas is roughly 59% methane, 41% carbon dioxide, with about 20 ppmv of non methane organic compounds as hexane. The District evaluated whether the digester S-190 as well as the associated digester gas energy recovery sources and digester gas flares were subject to Regulation 8-1-110.3 (exemption from Regulation 8 Rules) or to 8-2-301 (Organic Compounds – Miscellaneous Operations). This discussion of applicability follows.

Regulation 8-1-110.3 states

8-1-110 **Exemptions:** The following shall be exempted from the provisions of this regulation:

110.1 Any structure designed and used exclusively as a dwelling for not more than two families, provided that this exclusion does not apply to the application of an architectural coating.

110.2 Any internal combustion engine.

110.3 Any operation or group of operations which are related to each other by being a part of a continuous process, or a series of such operations on the same process material, which are subject to Regulation 8, Rule 2 or Rule 4, and for which emissions of organic compounds are reduced at least 85% on a mass basis. Where such reduction is achieved by incineration, at least 90% of the organic carbon shall be oxidized to carbon dioxide.

Regulation 8-2-301 states:

8-2-301 Miscellaneous Operations: A person shall not discharge into the atmosphere from any miscellaneous operation an emission containing more than 6.8 kg. (15 lbs.) per day and containing a concentration of more than 300 PPM total carbon on a dry basis.

Organic compounds are defined in 8-1-201 as “any compound of carbon excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate”. The District has performed a conservative calculation (see Appendix C) to estimate the NMOC emissions potential from digester gas. The use of NMOC emissions potential is conservative since this includes all compounds of carbon with the exception of methane and carbon dioxide. Laguna has estimated a maximum daily digester gas production rate (highest month average) of 365,000 cu ft, with a conservative maximum concentration of 100 micro-grams NMOC per liter of digester gas (20 ppmv). While the expected combustion destruction efficiency of NMOC in a well-mixed combustible fuel stream should easily exceed 90%, this abatement efficiency cannot be assured for digester gas combustion, due to the high concentrations of non-combustible gas (CO2). Further, the very low average digester gas inlet concentration (20 ppmv) of NMOC would, upon combustion at 90% efficiency result in an outlet concentration of 2 ppm NMOC, makes measurement and continued verification problematic, due to the error limits of the testing methods. Based on these findings the District concludes 8-1-

110.3 may not be applicable for digester gas combustion, since 90% destruction efficiency cannot be reasonably expected at all times.

We conclude the 8-2-301 is applicable to the digester gas sources and combustion devices. Based on the aforementioned calculation presented in Appendix C, and assuming all digester gas is vented at the maximum NMOC concentration gives a daily uncontrolled emission rate of approximately 2.3 lb per day (controlled emissions estimated as 1.9 lb/day), at an maximum concentration of 16 ppmv. Since the controlled emission level of NMOC from digester gas is less than both the daily limit and the emission stream concentration limit (on both molar and mass basis) as specified in 8-2-301, we conclude that the digester S-190 and the respective digester gas fired engines, boilers and flare are subject to and will comply with Reg 8-2-301. Regulation 8-2-301 will be included in Table IV, Applicable Requirements for S-190 Anaerobic Digester as well as all combustion devices burning or abating digester gas.

Compliance Assurance Monitoring**:** The applicability of compliance assurance monitoring (CAM) must be considered at this facility because the facility uses an emission control device to achieve compliance with a federally enforceable emission limit. The control device in use is flare A-35. In addition, the boilers S-28 and cogeneration engines S-29, S-31, and S-35 burn digester gas to make power and heat and therefore control the emissions of digester gas. All of these devices control emissions from the anaerobic digesters S-190, and are subject to the requirements of Regulation 8, Rule 2-301 (see discussion above) This section prohibits the discharge of an emission containing more than 15 lbs/day and a concentration of more than 300 ppm total carbon.

In Appendix C, the District performed a conservative calculation to estimate the NMOC emissions potential from digester gas. The calculation includes all compounds of carbon with the exception of methane and carbon dioxide. Laguna has a historical maximum daily digester gas production rate of 365,000 cu ft with an estimated maximum concentration of 100 micro-grams NMOC per liter (20 ppmv), of digester gas. Assuming all digester gas is vented at the maximum NMOC concentration gives a daily uncontrolled emission rate of approximately 4.6 lb per day (see Appendix C for calculation). CAM only applies if the uncontrolled emissions are more than 100 tpy. Since the maximum potential annual uncontrolled emissions are 0.84 ton (1,679 lb/yr), CAM is not required.

112 (j) Case By Case MACT: This requirement does not apply because there are no major sources for HAP, nor does the facility qualify as a major facility for HAP.

Changes to permit:

BAAQMD Regulation 6, Particulate Matter and Visible Emissions, will be added to all combustion sources, since they are sources of particulate emissions. In the case of combustion sources which burn gaseous fuel, BAAQMD Regulation 6-401 is not applicable, since the requirement states “Every person responsible for an emission (except from gas fired heat transfer operations regulated by Sections 6-301, 6-303 and 6-304) shall have and maintain means whereby the operator of the plant shall be able to know the appearance of the emission at all times.” The hot water boilers S-28 as well as the cogeneration engines S-29, S-31 and S-35 are all gaseous fuel sources. The diesel engine sources S-33 and S-34 as well as S-36, S-37, and S-

38 are all subject to the Appearance of Emissions requirement, since they also burn diesel fuel (liquid fuel). Our interpretation of this requirement is that the Permit Holder must provide the means for an operator to observe the emissions. In other words, the emission sources may not be placed in such a way as to prevent a plant operator from making a casual observation of the emissions.

BAAQMD Regulation 8, Rule 2, Miscellaneous Operations, will be added to all sources that burn digester gas, since the digester is subject to the standard and the combustion sources are control devices.

BAAQMD Regulation 9 Rule 1, Sulfur Dioxide, will be added to all combustion sources, since they are sources of sulfur dioxide.

Sources S-3, S-4, S-5, S-17, S-18: The source descriptions for all of these sources have been modified to provide better descriptions of the respective source.

Source S-28 Boilers: The capacity of these boilers is less than 10 MMbtu/hr (8.4 MM Btu/hr each). Therefore these units are not subject to the requirements of 9-7-301, 302, or 303. As far as Reg 9-7 is concerned, S-28 is subject to 9-7-304, and the Permit Holder has chosen to perform a tune up on the boiler as per 9-7-304.2 at a frequency of at least once every 12 months.

Condition 1541 will be modified accordingly to include this requirement.

S-33 and S-34, Backup Generators (BUG), 2836 HP each (permitted under loss of exemption AN 4251): These diesel-fired generators were permitted under loss of exemption permit application 4251 to operate as emergency backup generators according to Condition 18856. Since this condition only requires the keeping of records for 2 years, the condition will be modified to require 5 years of records. This condition establishes conditions on the type of operation, diesel fuel sulfur content limitations, as well as monitoring, recordkeeping and recording. In addition to the standard operating conditions containing the above requirements, the engine must meet federally enforceable regulations for particulate/visible emissions (Regulation 6) and sulfur dioxide (Regulation 9-1). In addition, the condition will be modified to address the new Statewide Air Toxic Control Measure for Stationary Compression Ignition Internal Combustion Engines. The hours of operation for reliability and maintenance will be reduced from 200 hr/yr to 20 hours/yr.

Digester Gas Sulfide Levels: Regulation 9-1-302 establishes an exhaust limit of 300 ppm sulfur dioxide from any emission stream. An SO2 level of 300 ppmv in the flue gas translates to an approximate digester gas H2S level of 1545 ppmv. To ensure the 300 ppmv standard is not exceeded, a limit of 1500 ppmv of sulfide in the digester gas was established in permit condition #18871 to ensure ongoing compliance with the 300 ppmv SO2 exhaust concentration standard of Reg 9-1. Santa Rosa WWTP controls their sulfide concentration to levels below 100 ppmv (typical range lies from 45 to 100 ppm) by ferric sulfide addition and therefore an exceedance of this limit is not expected nor acceptable for process reasons.

Engine S-35, which was permitted in 2002 to replace the failed engine S-30, was subject to BACT and NSR. BACT for sulfur emissions was not triggered, as the 10 lb/day limit was not

exceeded (due to maximum 100 ppm internal control limit). The digester gas limit of 1500 ppm will continue to be the standard for the anaerobic digester S-190. Although the 300 ppm exhaust concentration (SO2) limits holds for digester gas fired combustion sources, the only monitoring will be at the source of the fuel--the digesters.

As a practical matter, operators at Laguna Wastewater Reclamation Facility closely monitor the digester gas sulfide content, with typical levels ranging from 45 to 100 ppmv. Once 100 ppmv is exceeded, the ferric chloride injection is increased.

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; …"

Since the District has not determined that the facility is out of compliance with any 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 conducted a review of compliance over the past year and has determined that for the period of March 6, 2005 through March 6, 2006, one violation notice was issued to the facility - for submitting the semi-annual Title V monitoring report late. The facility came into compliance by submitting the report by the end of the period. There have been no other violations, no on-going non-compliance, and no recurring patterns of violations. 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.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting has been added to the permit.

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

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

Grandfathered Sources: The District has reviewed and, or added new daily throughput limits on grandfathered sources so as to help ensure compliance with District rules addressing preconstruction review. The applicability of preconstruction review depends on whether there is a "modified source" as defined in District Rule 2-1-234. Whether there is a modified source depends in part on whether there has been an "increase" in "emission level." 2-1-234 defines what will be considered an emissions level increase, and takes a somewhat different approach depending on whether a source has previously permitted by the District.

Sources that were modified or constructed since the District began issuing new source review permits will have permits that contain throughput limits, and these limits are reflected in the Title V permit. These limits have previously undergone District review, and are considered to be the legally binding "emission level" for purposes of 2-234.1 and 2-1-234.2. By contrast, for older sources that have never been through preconstruction review (commonly referred to as "grandfathered" sources), an "increase" in "emission level" is addressed in 2-1-234.3. A grandfathered source is not subject to preconstruction review unless its emission level increases above the highest of either: 1) the design capacity of the source, 3) 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.

The District has written throughput limits into the Title V permit for grandfathered sources S-28 and S-100. As discussed above, these limits are written for the purpose of determining whether an increase in emission levels has occurred. The purpose of these limits is to facilitate implementation of preconstruction review program. If these limits are exceeded, the facility would be expected to report the exceedence, and the District would treat the reported exceedence as presumptively establishing the occurrence of a modification. The facility would then be expected to apply for a preconstruction permit addressing the modification and the District would consider whether an enforcement action was appropriate.

It is important to note the presumptive nature of throughput limits for grandfathered sources that are created in the Title V permit. These limits are generally based upon the District's review of information provided by the facility regarding the design capacity or highest documented capacity of the grandfathered source. To verify whether these limits reflect the true design, documented, or "bottlenecked" capacity (pursuant to 2-10234.1) of each source is beyond the resource abilities of the District in this Title V process. Moreover, the District cannot be completely confident that the facility has had time or resources necessary to provide the most accurate information available in this regard. Creating throughput limits in the Title V permit for grandfathered sources is not required by either Part 70 or the District's Major Facility Review

rules. Despite the lack of such a requirement, and despite the resource and information challenges presented in the Title V process, the District believes that writing presumptive limits for grandfathered sources into the Title V permit will provide a measure of predictability regarding the future applicability of the preconstruction review program, and that this increased predictability is universally beneficial.

It follows from the presumptive nature of these throughput limits for grandfathered sources that exceedence of these limits is not per se a violation of the permit. *Failure to report an exceedence would be a permit violation.* In this sense, the throughput limits function as monitoring levels, and are imposed pursuant to the District's authority to required monitoring that provide a reasonable assurance of compliance. If an exceedence occurs, the facility would have an opportunity to demonstrate that the throughput limit in fact did not reflect the appropriate limit for purposes of 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 2-1-234.3, the District would consider that a preconstruction review-triggering event, notwithstanding compliance with the throughput limit in the Title V permit. In other words, the protection afforded the facility by complying with the throughput limit in the Title V permit is only as strong as the information on which it was based. There is no Title V "permit shield" associated with throughput limits for grandfathered sources, as they are being proposed. A shield may be provided if the District determines with certainty that a particular limit is appropriate for purposes of 2-1-234.3.

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

Conditions have also been deleted due to the following:

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

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

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO 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.

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

Summary of Changes to Operating Conditions

The following table lists the conditions in order with the respective sources as well as the condition status.

Condition Number(s)	Source Number(s)	Comment (Status)
784	S-130	Condition to be deleted
947	S-100	To be revised
1541	S-28	To be revised
2612, 11031	S-29	To be deleted
2612, 11031	S-31	To be deleted
12848	S-3, S-4,S-5	No change
17392	S-32	New condition
18856	S-33	New condition
18867	S-29, S-31	New condition
18871	S-190	New condition
19192	S-36, S-37, S-38	New condition
19750	S-35	New condition

*Condition 18856 will be further revised in the future (but are not applicable at the present time) to comply with the CARB Stationary Diesel Engine Air Toxic Control Measure.

Condition Discussion

Condition 784 for source S-130

Source S-130 is a component process in the overall wastewater treatment plant with no peculiarities that make the source more or less odorous than most of the other treatment processes. Condition 947 for S-100 includes a generalized public nuisance clause. Therefore Condition 784 is unnecessary and will be deleted.

~~1. If the District receives more than five confirmed complaints in a week, the City of Santa Rosa WWTP shall take immediate action to abate the odor. [Basis: BAAQMD 7-102]~~

Condition 947 for source S-100

Source S-100 is a grandfathered source. The changes that are proposed establish throughput limits and monitoring requirements. See the discussion on grandfathered sources above.

1. Flowrate

Total wastewater flow shall not exceed 21.3 million gallons per day on a calendar month average during dry weather periods or 42 million gallons per day on a calendar month average during wet weather periods. For the purposes of this limit, wet weather is defined as the months from October through May. [Basis: Cumulative Increase]

2. Nuisance

In the event that a public nuisance odor source is identified at this facility, the Permit Holder shall employ all measures, practices, or modifications necessary to abate the nuisance. [Basis: Regulation 1-301] ~~If the District receives more than five confirmed complaints in a week, the City of Santa Rosa WWTP shall take immediate action to abate the odors.~~

3. Records

To demonstrate compliance with Part 1, above, the Permit Holder shall maintain the following records: [Basis: Regulation 2-6-409.2]

a. Daily and monthly (calendar basis) records of the quantity of wastewater processed at this source.
b. Monthly records shall be totaled for each consecutive 12-month period.
c. All records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request.
d. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.

Condition 1541 for source S-28

This reference to an odor source and confirmed complaints will be removed as this requirement is unnecessary. Instead, total thermal throughput and other limitations commensurate with the current (grandfathered) operation will be established as well as applicable monitoring and recordkeeping.

For S-28 Hot Water Boilers, Serial # 68-0166-01 and 68-0166-02

1. S-28 Boilers may be fired on any combination of sewage sludge digester gas or natural gas~~If the District receives more than five confirmed complaints in a week, the City of Santa Rosa WWTP shall take immediate action to abate the odors.~~ (Basis: Cumulative Increase)

2. Throughput

Total fuel usage at S-28 boilers shall not exceed 73.58 MM Btu/yr per boiler, gross heating basis. (Basis: Cumulative Increase)

3. The Permit Holder shall perform a regular inspection and tune up of the combustion section of both boilers to ensure the proper air-to-fuel ratio is being used to maximize efficiency and minimize the production of nitrogen oxides and carbon monoxide, following the procedures of Regulation 9 Rule 7, Section 604 (CARB BARCT Tune Up Procedures). The time interval between boiler tune-ups shall not exceed 12 months. (Basis: Reg 9-7-304.2)

4. Recordkeeping

To demonstrate compliance with parts 1,2 and 3, above, the Permit Holder of hot water boilers S-28 shall document the operation and tune ups by keeping the following records:

a. Total monthly records of operation including hours of operation and quantities and type of fuel fired.
b. Time and date of the tune up and the identity of the qualified technician.
c. Stack gas oxygen concentrations (ppm dry) and carbon monoxide concentrations (ppm dry) before and after any adjustments are made.

The records associated with the above requirements shall be maintained for a period of at least 5 years from the date of the inspection or test and be available for review by District personnel upon request. (Basis: Reg 2-6-501)

~~**Condition #2612**~~ for S-29, S-30, S-31
This condition was effective until 6/15/97 as noted in the source description in the condition text, to be replaced by Condition 11031, which is listed below. Condition 2612 should be archived.

~~For S-29, 30, 31 Internal Combustion Engines~~
~~Condition effective until 6/15/97~~

~~1. Only one of the three engines shall be operated at any given time (Basis: Cumulative Increase).~~

~~**Condition #11031**~~ for S-29, S-30, S-31
This condition became effective after Condition 2612 expired on 6/15/97. This condition will be replaced by Condition 18867 to account for the fact that engine S-30 failed and was replaced by the new cogeneration engine S-35.

~~For Sources S-29, S-30 and S-31~~
~~Condition effective after 6/15/97~~

~~1. Emissions of NOx from this source shall not exceed 140 ppmv as corrected to 15% oxygen, dry basis. (basis: Regulation 9-8-302.1, cumulative increase)~~

~~2. Within 30 days after start-up, The City of Santa Rosa shall conduct a performance test in accordance with the District test procedures to demonstrate compliance with condition number 1. Written notice of the test shall be provided to the District 10 days prior to the test so that an observer from the District be present. (basis: Regulation 9-8-501)~~

~~3. City of Santa Rosa shall ensure that an annual performance test is conducted in accordance with the District test procedures to demonstrate compliance with the NOx limits. City of Santa Rosa may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supercede the annual source test requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)~~

~~4. Effective upon effective date of approval of Regulation 9, Rule 8 into the California State Implementation Plan by EPA: City of Santa Rosa shall ensure that an annual performance test is conducted in accordance with the District test procedures to demonstrate compliance with the CO limits. City of Santa Rosa may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supercede the annual source test requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)~~

~~5. A District approved engine log shall be maintained to record the hours of operation, amount of digester gas and natural gas combusted to produce the power. This log shall be maintained for a period of at least five years and shall be made available to District personnel upon request. (basis: cumulative increase, BAAQMD Regulation 2-6-501)~~

Condition #12848 for S-3, S-4, and S-5
There are no changes associated with this condition.

For S-3 Composting Bay, S-4 Stockpiles, S-5 Screens, A-1 Biofilter

1. Visible particulate emissions from this source shall not exceed Ringelmann 0.5 or result in fallout on adjacent property in such quantities to cause a public nuisance per Regulation 1-301. (Basis: BACT, Regulation 1-301)

*2. The facility shall conduct a District approved source test on A-1 Biofilter within 60 days of start-up to ensure that this facility is in compliance with Regulation 7, Section 303 for the following compounds: (Basis: Regulation 7)

   a Dimethylsulfide (CH3)2S
   b. Mercaptans, calculated as methylmercaptan CH3SH
   c. Ammonia NH3

   The samples shall be collected as prescribed in the Manual of Procedures, Volume IV and submitted to the District.

3. Throughput of sludge and yard waste mixture shall not exceed 36,500 tons in any consecutive 12 month period. (Basis: cumulative increase)

4. For the compost that is stockpiled, both in the curing pile and storage piles, water shall be added manually as needed to reduce particulates. (Basis: Regulation 6-301)

*5. The stockpile of shredded screen yard waste (i.e., green tree trimmings, green leaves, brushes) shall be processed no later than 5 days from the time they are received to prevent wood decomposition and odors. (Basis: Reg. 7)

*6. If the facility receives 2 or more Violation Notices from the District for “Public Nuisance” in any consecutive 12 month period, the owner/operator of this facility shall

submit to the District within 30 days, an application to modify the Permit to Operate to include the following control measures as applicable or any other that the District deems necessary and appropriate. (Basis: Reg. 7)

a. Reduce holding time of yard waste from 5 days to 3 days.
b. Replace biofilter media with new material if it no longer is effective and decomposition has set it, or increase the biofilters thickness so that no odors are detected.

7. In order to demonstrate compliance with the above conditions, the operator of sources S-3, S-4 and S-5 shall maintain the following records in a District approved log. These records shall be kept on facility and made available for District inspection for a period of five years from the date that the record was made. (Basis: Cumulative Increase, BAAQMD Regulation 2-6-501)

a. Daily throughput of sludge/yard waste material being processed, summarized on a monthly basis.
b. Cubic yards of stockpiled yard waste received in stockpiled area and removed for processing during a 5 day time period.
c. Daily hours of operation, summarized on a monthly basis.

Condition 17392 for source S-32
This is a new condition, resulting from application #608 for the portable recycle grinder

S-32 Recycle Grinder, Turbo Diesel Powered, John Deere, 375 HP

1. The total amount of diesel fuel burned in S-32 recycle grinder engine shall not exceed 2,448 gallons during any consecutive 12 month period. (Basis: Cumulative Increase)

2. S-32 recycle grinder diesel engine shall not burn diesel fuel having a sulfur content greater than 500 ppm (wt basis). (Basis: Cumulative Increase, 9-1-304)

3. S-32 recycle grinder diesel engine operation shall not exceed 3 hours in any calendar day. (Basis: Cumulative Increase)

4. Daily records shall be maintained, in a District-approved logbook, of the diesel fuel usage and engine hours of operation. The logbook shall be kept onsite and made available to District staff upon request. (Basis: Reg 1-441)

5. Visible particulate emissions from this operation shall not exceed a Ringelmann 1.0 during any consecutive three minutes in any hour. (Basis: Reg 6-301)

Condition 18856 for sources S-33 and S-34
The hours of operation for reliability will be changed from 200 hours/year to 20 hours/yr to comply with the requirements in the Statewide ATCM for Stationary Diesel Engines, which became effective for existing sources on January 1, 2006. The records retention period will also be increased form 2 years to 5 years, in accordance with Title V protocol.

1. Hours of Operation

   The emergency standby engine generators S-33 and S-34 shall only be operated to mitigate emergency condition or for reliability-related activities. Operation for reliability-related activities shall not exceed ~~200~~20 hours in any calendar year per engine. Operation while mitigating emergency conditions is unlimited. (Basis: Reg 9-8-331)

2. Emergency Conditions is defined as any of the following: (Basis: Reg 9-8-231)

   a. Loss of regular natural gas supply.
   b. Failure of regular power supply.
   c. Flood mitigation.
   d. Sewage overflow mitigation.
   e. Fire.
   f. Failure of a primary motor, but only for such time as needed to repair or replace the primary motor.

3. Reliability-related activities is defined as any of the following: (Basis: Reg 9-8-232)

   a. Operation of an emergency standby engine to test its ability to perform for an emergency use, or
   b. Operation of an emergency standby engine during maintenance of a primary motor.

4. Each of the emergency standby engine generators shall be equipped with either a) a non-resettable totalizing meter that measures and records the hours of operation for the engine, or b) a non-resettable fuel usage meter. (Basis: Reg 9-8-530)

5. Records

   The following monthly records shall be maintained for each engine in a District-approved log for at least ~~2~~5 years and shall be made available for District inspection upon request. (Basis: Reg 9-8-530, 1-441)

   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 records.

Condition 18867 for sources S-29 and S-31

Condition 18867 was incorporated as a revised condition for sources S-29, S-30 and S-31. The original condition #11031 was adopted to include the BARCT NOx & CO limits specific to Reg 9 Rule 8. The original condition 2612 was effective until 6-15-97, with condition 11031 becoming effective after 6-15-97(as noted in the original Title V Permit for this facility).

Condition 18867 replaced Condition 11031 under application 12196, which clarified the lean burn engine requirements and removed expired requirements.

The only changes to this condition is the removal of all references to source S-30 engine (which failed, was removed from service, and replaced by S-35) will be deleted and other expired requirements will be removed from this permit condition. These are the only changes to condition 18867.

For Sources S-29, ~~S-30 and~~ S-31

1. Emissions of NOx from this source shall not exceed 140 ppmv as corrected to 15% oxygen, dry basis. (basis: BAAQMD 9-8-301.2, 302.1, cumulative increase)

2. Emissions of CO from this source shall not exceed 2000 ppmv as corrected to 15% oxygen, dry basis. (Basis: BAAQMD 9-8-301.3, 302.3)

3. ~~City of Santa Rosa shall ensure that an annual performance test is conducted in accordance with the District test procedures to demonstrate compliance with the NOx limits. City of Santa Rosa may submit an alternative monitoring plant to the District for approval. If the alternative monitoring plan is approved, the plan shall superccede the annual source test requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-~~ District approved flowmeters shall be installed on each engine, to measure the respective digester gas and natural gas flow. These flowmeters shall be installed prior to any operation and maintained in good working order. (Basis: BAAQMD 1-441, cumulative increase)

4. ~~Effective upon effective date of approval of Regulation 9, Rule 8 into the California State Implementation Plant by EPA~~: City of Santa Rosa shall ensure that an annual performance test is conducted in accordance with the District test procedures to demonstrate compliance with the NOx and CO limits. City of Santa Rosa may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the annual source test requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: BAAQMD 2-6-409.2)

5. A District approved engine log shall be maintained to record the hours of operation, amount of digester gas and natural gas combusted to produce the power. This log shall be maintained for a period of at least five years and shall be made available to District personnel upon request. (Basis: BAAQMD 2-6-501, cumulative increase)

Condition 18871 for source S-190

This is a new condition for source S-190 Anaerobic Digesters. For a more detailed discussion about this condition see the discussion about source S-190 in the Complex Applicability Determination Section of this Statement of Basis.

1. Emissions from S-190 shall be abated at all times by combustion at any or all of the following sources: S-28, S-29, S-30, and S-31 except as specified in Part 2. (Basis: Regulation 1-301)

2. Emissions from S-190 shall be abated by A-35 only when equipment failure or other emergencies require the flaring of digester gas. (Basis: Cumulative Increase)

3. Digester gas total sulfur content shall not exceed 1500 ppm. (Basis: Reg 9-1)

4. To demonstrate compliance with this standard the permit holder shall monitor and record the sulfur content of the digester gas at a frequency of at least once every calendar week. If the permit holder can demonstrate 3 months of digester gas sulfur results lower than 1000 ppm the monitoring frequency for sulfur analysis may be reduced to at least once every calendar month. (Basis: Regulation 9-1-302)

Condition 19192 for sources S-36, S-37, and S-38
This is a new condition for diesel powered emergency standby equipment.

S-36 Portable Compressor: Diesel Engine, Make: John Deere, Model: 300 Series, Rated Horsepower: 70 HP.
S-37 Portable Pump: Diesel Engine, Make: Deutz, Model: F4L 912 1441-32, Rated Horsepower: 51 HP.
S-38 Portable Pump: Diesel Engine, Make: Deutz, Model: F4L912, Rated Horsepower: 51 HP.

Portable Equipment Requirements

1. This mobile equipment shall operate at all times in conformance with the eligibility requirements set forth in BAAQMD Regulation 2-1-220 for portable equipment. [Basis: BAAQMD 2-1-220]

2. If this portable equipment remains at any fixed location in the Bay Area Air Basin for more than 12 months, the portable permit will automatically revert to a conventional permanent location BAAQMD permit and will lose its portability. [Basis: BAAQMD 2-1-220.10]

3. Any loss of portability per part 2, shall be reported to the Director of the Compliance and Enforcement Division no later than 30 days after the loss of its portability. [Basis: BAAQMD 2-1-404]

Regulatory Compliance Requirement

4. S-36, S-37, and S-38 shall only fire diesel fuel containing less than 0.5% by weight sulfur. [Basis: BAAQMD 9-1-304]

To demonstrate compliance with the above sulfur limit, the Permit Holder shall secure and maintain onsite, for at least 5 years from the date of entry, one of the following records:

a. A written statement, as applicable, received from the diesel fuel supplier(s) certifying that the diesel fuel purchased from the supplier does not exceed 0.5% by weight or meets the sulfur limitations for CARB Vehicular Diesel Fuel as specified in 13 CCR, Section 2281, California Code of Regulations, or
b. A vendor certification of sulfur content, or
c. Fuel test results showing the sulfur content from a District-approved test.

5. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour that is as dark or darker than Ringelmann #1 or equivalent to 20% opacity. [Basis: BAAQMD 6-301, 302]

6. Operation of S-36, S-37, and S-38 shall not create emissions in sufficient quantities as to cause a public nuisance under Regulation 1-301. [Basis: BAAQMD 1-301]

7. S-36, S-37, and S-38 shall not be operated for longer than 72 consecutive hours within 1,000 feet of a school. To operate for longer than 72 consecutive hours within 1,000 feet of a school, the Permit Holder must submit an application to the District so that proper notification of your intended operation can be made known to the affected public in advance of any usage of the equipment. [Basis: BAAQMD 2-1-412]

Recordkeeping Requirements

8. The following records shall be kept in a District-approved logbook and retained for a period of at least five years following the date of entry. The log shall be kept with the equipment and made available to District staff upon request. [Basis: BAAQMD 1-441]

a. Weekly hours of operation or fuel usage for S-36, S-37, and S-38.
b. Operating location address or location description and time at location.
c. Hours of operation or fuel usage shall be totaled on a monthly basis

Condition 19750 for source S-35

This is a new condition for the cogeneration engine S-35 which replaced S-30, which failed and had to be replaced.

For Source S-35, Cogen Engine #4, 1160 BHP, 800 KW

1. This engine shall be fired on digester gas and/or natural gas only. [Basis: Cumulative Increase]

2. Thermal Capacity Limitation: Total thermal input shall not exceed 56,772 MM Btu in any 12 month period. [Basis: Cumulative Increase]

3. NOx emissions, calculated an NO2, shall not exceed 95 ppm at 15 percent oxygen, or 0.35 lb/MM Btu fuel input [Basis: BACT, Cumulative Increase)

4. CO emissions shall not exceed 410 ppm at 15 percent oxygen, or 0.94 lb/MM Btu fuel input. [Basis: BACT, Cumulative Increase]

5. NMHC emissions, calculated as methane, shall not exceed 270 ppm at 15 percent oxygen, or 0.35 lb/MM Btu fuel input. [Basis: BACT, Cumulative Increase]

6. District approved flowmeters shall be installed on this engine to measure the respective digester gas and natural gas flow. These flowmeters shall be installed prior to any operation and maintained in good working order. [Basis: Cumulative Increase]

7. To demonstrate compliance with the limits specified in Parts 3, 4, and 5, above, the permit holder shall conduct a District-approved performance test within 60 days of startup. [Basis: BAAQMD 2-6-409.2]

8. City of Santa Rosa shall ensure that an annual performance test is conducted on this engine in accordance with District-approved test procedures to demonstrate ongoing compliance with the NOx, CO and NMHC limits specified in Parts 3, 4, and 5, above. [Basis: BAAQMD 1-441]

9. To determine compliance with the above Parts, the Permit Holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions, including the following information:
[Basis: Regulation 2-6-409.2]

   a. Monthly records of the quantity of digester gas and natural gas burned at this source.

   b. Monthly records of the total thermal input in BTU.

   c. All records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request.

   d. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulation.

VII. Applicable Limits and Compliance Monitoring Requirements

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

The District has reviewed all monitoring and has determined the monitoring identified in the Title V Permit is adequate. 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**.**

A discussion of sulfur monitoring and emission limitation issues follows.

BAAQMD Regulation 9-1-301 (Ground-Level SO2 Concentration Limitations)

Area monitoring to demonstrate compliance with the ground level SO2 concentration requirements of Regulation 9-1-301 is at the discretion of the APCO (per BAAQMD Regulation 9-1-501). Modeling studies from a previous permit application indicate that a POTW producing 159,000 cu ft/hr (Santa Rosa produces about 15,000 scf/hr) of digester gas at 300 ppmv (Santa Rosa controls their digester gas sulfide levels to less than 100 ppm) sulfide level would result in an emission rate of approximately 8 lb/hr and a worst case ground level fenceline concentration of 0.02 ppm of SO2. Since this is less than the 0.05 ppmv limit specified in 9-1-301 (most dilute limit), and since the maximum digester gas production rate is approximately 15,000 scf/hr, there is no expectation that the SO2 ground-level concentration limit would be exceeded. This facility does not have equipment that emits large amounts of SO2 and therefore is not required by the APCO to have ground level monitoring for SO2.

All facility combustion sources are subject to the SO2 emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). In EPA's June 24, 1999 agreement with CAPCOA and ARB, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", EPA has agreed that natural-gas-fired combustion sources do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since violations of the regulation are unlikely. Therefore, no monitoring is necessary for this requirement.

BAAQMD Regulation 9-1-302 (300 ppm maximum, from any vapor stream)

Permit condition 18871 for the digester S-190 limits the digester gas concentration to 1500 ppm total sulfur. This is less than the calculated level which would directly produce an exhaust stream of 300 ppmv SO2. Santa Rosa-Laguna controls their digester gas to levels typically

below 100 ppm, hence the 300 ppmv standard is not expected to be approached from 100% digester gas combustion.

BAAQMD Regulation 9-1-304 (Sulfur Content of Liquid and Solid Fuels)

The only liquid fuel used at this facility is diesel fuel, hence this part is applicable to those sources burning diesel fuel. The standard in 9-1-304 is 0.5% sulfur maximum in the fuel, which is equivalent to 5,000 ppm. California state requirements specify that CARB diesel shall be used in all sources (mobile and stationary) with the exception of locomotives and ships. The current CARB Diesel sulfur standard is 500 ppm. Further, in June of 2006, the sulfur level of CARB Diesel will be further reduced to 15 ppm.

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

BAAQMD Regulation 6-303, Ringelmann No. 2 limitation, has been added because it applies to the emergency generators.

IX. Permit Shield:

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

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

This facility has no permit shields.

X. Revision History

Initial Issuance: July 1, 1997

There have been no revisions to the Title V Permit since the original permit was issued.

XI. Glossary

The glossary was updated.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Compliance Status:

A November 29, 2005 office memorandum from the Director of Compliance and Enforcement to the Director of the Engineering Division, presents a review of the compliance record of City of Santa Rosa Wastewater Treatment (Site #: A1403). The Compliance and Enforcement Division staff has reviewed the records for Site A1403 for the period between November 22, 2004 through November 22, 2005. This review was initiated as part of the District evaluation of an application by City of Santa Rosa Wastewater Treatment for a renewal Title V permit. During the period subject to review, activities known to the District include:

- There were no Notices of Violation issued during this review period.
- The District did not receive any air pollution complaints alleging the City of Santa Rosa's Wastewater Treatment facility as the source.
- The District did not receive any notifications for continuous emission monitoring (CEM).

The owner certified that all equipment was operating in compliance on December 28, 2001. The Compliance and Enforcement Division has determined that there is no evidence of on-going compliance and no recurring pattern of violations that would warrant consideration of a Title V permit compliance schedule.

F. Differences between the Application and the Proposed Permit:

The California Statewide Air Toxic Control Measure for stationary compression ignition engines was adopted in 2004. This ATCM applies to engines S-33 and S-34 and reduces the allowable hours of operation for reliability and maintenance from 200 hours/year to 20 hours/year. These changes became effective January 1, 2006. The permit conditions have been modified and are classified as administrative amendments.

APPENDIX A

BAAQMD COMPLIANCE REPORT

APPENDIX B

GLOSSARY

ACT
Federal Clean Air Act

APCO
Air Pollution Control Officer

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

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.

CO
Carbon Monoxide

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). Cumulative increase is used to determine whether threshold-based requirements are triggered.

District

The Bay Area Air Quality Management District

dscf
Dry Standard Cubic Feet

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.

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.

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.

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.

MOP
The District's Manual of Procedures.

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

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.)

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
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.

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

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 Plan

TSP
Total Suspended Particulate

VOC
Volatile Organic Compounds

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cfm	=	cubic feet per minute
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m^2	=	square meter
min	=	minute
mm	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
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

APPENDIX C

CALCULATIONS

1. NMOC Compound Concentrations in Digester Gas

Estimated Average MW of NMOC*: 113 lb/lb-mole (113 g/g-mole)
Estimated Concentration of NMOC*: 100 µg/l = 82 E-06 g/l (µg = microgram = 1,000,000th of a gram; average measured concentration = 50 µg/l)
Laguna Maximum Digester Gas Production Rate: 365E3 cu ft/day (15,208 cu ft/hr)
(Note: Highest monthly average, actual = 365,000 cu ft/day, August 2004)
Digester Gas Typical Composition:
Methane: 59% (typical, dry basis)
CO2: 41%
(Average DG Density = 1.22 g/l at STP)
Nitrogen + Oxygen: <1%

NMOC Emissions, maximum-Uncontrolled = (365,000 cu ft/day)(100 E-06 g NMOC/liter)(1000 liter/cu m)(cu m/35.314 cu ft)(lb/454 g) = 2.3 lb/day (831 lb/yr)

Conversion of 100 µg/l to ppmv, basis 1,000,000 liter digester gas: (100 E-06 g NMOC/liter DG)(1,000,000 liter DG)(g-mole NMOC/113 g NMOC)(22.4 liter NMOC/g-mole NMOC) = 19.8 liter NMOC per 1,000,000 liter DG = 20 ppmv

300 ppm Carbon in Digester Gas (DG):
MW, Methane: 16.1 lb/mole
Highest monthly average digester gas production rate: 365,000 cu ft/day

Total carbon (NMOC) emitted @ 300 ppm = [365,000 cu ft/day][300 cu ft NMOC as methane/1E6 cu ft DG][lb-mole/386 cu ft][16.1 lb/lb-mole] = 4.6 lb/day

2. Flue Gas Oxygen Correction Factors

Oxygen Correction, scf @ 3% O2 per scf @ 0% O2 = (20.95 – 0)/(20.95 – 3) = 1.167
Oxygen Correction, scf @ 15% O2 per scf @ 0% O2 = (20.95 – 0)/(20.95 – 15) = 3.521
Oxygen Correction, scf @ 11.3% O2 per scf @ 0% O2 = (20.95 – 0)/(20.95 – 11.3) = 2.171

3. SO2 Emission based on Digester Gas Sulfide Concentration of 300 ppm

Basis: 1 hour
MW: SO2 = 64.05 lb/lb-mole

SO2 emissions = (300 cu ft sulfur/1E6 cu ft DG)(15,208 cu ft DG/hr)(lb-mole/386.8 scf)(1 mole SO2/mole S)(64.05 lb SO2/lb-mole SO2) = 0.755 lb/hr (3.31 tpy)

4. Conversion of 300 ppm sulfur dioxide in flue gas to H2S level in digester gas.
H2S in Digester Gas = (300E-6 cu ft SO_2/cu ft flue gas][1 cu ft S/cu ft SO2][5.1506 cu ft FG./cu ft digester gas][1E6] = 1545 ppmv of total reduced sulfur in digester gas.

*Concentrations based on highest concentration sampled at East Bay Municipal Utility District (82 µg/l), highest observed concentration

APPENDIX D

EMISSIONS CHANGES

The following table lists the emissions increases from the eleven permit applications processed since the original Title V Permit Issuance

City of Santa Rosa-Laguna Wastewater Reclamation Facility (plant A1403)
Emission Changes Since Initial Title V Permit

		NOx (tpy)	CO (tpy)	POC (tpy)	SO2 (tpy)	PM10 (tpy)
AN 608 (11-15-1999)	MM Btu/hr					
S-32 Recycle Grinder, Diesel Fired	0.714	0.54	0.09	0.03	0.007	0.03
AN 4251 (loss of exemption) (2-19-2002) (diesel fired)						
S-33 Emergency Backup Generator	19.3	0.7	0.05	0.01	0.003	0.004
S-34 Emergency Backup Generator	19.3	0.7	0.05	0.01	0.003	0.004
AN 4855 (loss of exemption) (3-29-2002)						
S-36 Portable Compressor, Diesel, 70 HP	0.49	0.08	0.014	0.003	0.0014	0.003
S-37 Portable Pump, Diesel, 51 HP	0.36	0.06	0.01	0.002	0.001	0.002
S-38 Portable Pump, Diesel, 51 HP	0.36	0.06	0.01	0.002	0.001	0.002
AN 4928 (4-24-2002)						
S-35 Cogen Engine, 1160 HP (digester & natural gas fired)	6.5	4.4	7.6	8.3	0.21	0.06
S-30 Cogen Engine, 1160 HP (Shutdown)	(6.5)	(6.5)	(37.1)	(8.3)	(0.21)	(0.06)
Total Net Emission Increases, tpy		**0.04 tpy**	**(29.3)**	**0.057**	**0.016**	**0.045**
Current (12-2005) Databank Emissions, tpy		**48.6**	**103**	**10**	**0.3**	**0.5**

NOTE: Numbers in parenthesis represent net emission reductions

APPENDIX E

PERMIT APPLICATION ENGINEERING EVALUATIONS

Engineering Evaluations for the following permit applications are attached to the Statement of Basis in this Appendix.

AN	TITLE
608	S-32 Recycle Grinder, Diesel Powered, 375 HP (submitted 11-15-1999)
4251	S-33, S-34 Emergency Standby Gensets, 2836 HP each, Permitted under Loss of Exemption (submitted 2-19-2002)
4855	S-36, S-37, S-38 Portable Diesel Engines, Permitted under Loss of Exemption (submitted 3-29-2002)
4928	S-35 Cogeneration Engine, 1160 hp, replacement for S-30 (submitted 4-24-2002)