**Title V Permit Evaluation**

**Site Number: A0778**
**Site Name: San Jose/Santa Clara Water Pollution Control**
**Site Address: 700 Los Esteros Road, San Jose, CA 95134**

This evaluation addresses the permitted sources at San Jose/Santa Clara Water Pollution Control facility and addresses regulatory requirements for these sources.

## Regulations/Discussion of Requirements & Operating Conditions

### S-1, S-2, S-3, S-27, S-28 Digester Gas Flares

These flares were initially identified as emission sources. In reality, they should be permitted as abatement devices for the anaerobic digester S-210. After this application these "sources" will be identified as abatement devices and no longer as sources. These will be known as abatement devices since there is no energy recovered/no financial benefit from their operation. Their sole purpose is to abate odors, which would result from the venting of digester gas. These sources will be known as:

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| S-1 | A-5 |
| S-2 | A-6 |
| S-3 | A-7 |
| S-27 | A-8 |
| S-28 | A-9 |

### S-4, S-5, S-6, S-7, S-8 Stationary IC Engines: Digester Gas, Natural Gas, and Diesel Fuel Fired

Existing BAAQMD Condition: 10475

All of these engines are preferentially fired on digester gas and secondarily on natural gas. The engines are set up to use diesel fuel for ignition and as a pilot fuel – although the engines can be fired on diesel exclusively.

**District Regulations:**

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|---|---|---|
| **TSP:** | Regulation 6-301: | Ringelmann No. 1 |
| | Regulation 6-305: | Visible Emissions |
| | Regulation 6-310: | 0.15 gr/dscf |

These are combustion sources using mostly gaseous fuels (although diesel fuel may be burned as needed). In general, we do not expect there to be significant particulate emissions from these sources. It is widely understood that no permit conditions are needed to achieve compliance with a Ringelmann 1 limitation.

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|---|---|---|
| **$SO_2$:** | Regulation 9-1-301: | GLC 0.5 ppm (3 min) or 0.25 ppm (60 min) or 0.05 ppm (24 hr) |
| | Regulation 9-1-302: | 300 ppm $SO_2$ from any source |
| | Regulation 9-1-304: | Fuel sulfur content (0.5% wt – liquid fuels) |

Liquid Fuels (diesel): To address the diesel fuel sulfur content limitation, a part will be added to Condition 10475 requiring San Jose/Santa Clara to demonstrate compliance by collecting vendor certifications of sulfur content with each fuel delivery or performing a District approved test of each delivery.

Digester Gas: We have estimated that as long as the digester gas sulfur concentrations do not exceed 1500 ppm, the 300 ppm sulfur compound emission standard will not be exceeded. This is due to the diluting effect of mixing the fuel with air followed by combustion to form exhaust emissions. The true limiting factor for allowable sulfur concentration in the digester gas is the sulfur emissions limit at engines S-36 and S-37. To keep $SO_2$ emissions from sources S-36 through S-39 below the total daily emission limit of 150-lb/24 hour, the total sulfur content in the digester gas will be limited to 350 ppm. For additional information on the derivation of this limit, see the discussion under sources S-36 and S-37. We do not expect this facility to have any difficulty meeting this 350-ppm digester gas total sulfur content standard.

Natural Gas: Sulfur compound emissions from natural gas combustion are expected to be insignificant. No exceedances of any $SO_2$ standard would be expected under any operating scenario.

| | | |
|---|---|---|
| **NOx:** | Regulation 9-8-301.2: | 140 ppm @15% oxygen (natural gas) |
| | Regulation 9-8-302.1: | 140 ppm @15% oxygen (digester gas) |

NOx limitations are written into Condition 10475 specifying 140-ppm maximum. A new part shall be written into this condition requiring annual source testing to demonstrate compliance with this limitation.

| | | |
|---|---|---|
| **CO:** | Regulation 9-8-301.3: | 2000 ppmv @15% oxygen (natural gas) |
| | Regulation 9-8-302.3: | 2000 ppmv @15% oxygen (digester gas) |

**NMHC:** No specific requirement is identified for this source. A previous condition existed that limited NMHC to 250 ppm. This may have been roughly based on the miscellaneous emissions standard of 300 ppm total carbon as listed in Regulation 8-2-301. The existing condition will remain as stated with an annual source test requirement listed in the revised condition 10475.

Note: The owner/operator may propose an alternative monitoring plan in place of the annual source test for NOx, CO, NMHC, SO2, and TSP to the District for approval. If the alternative monitoring plan is approved the plan will supercede the annual source-testing requirement. Approvals shall be processed using the permit revision procedure contained in Regulation 2 Rule 6, and the provisions of Regulation 2 Rule 1.

**Thermal Capacity Limitations:** Due to the possible use of multiple fuels, a throughput condition will be established (as part of Condition 10475) limiting these sources to a total thermal throughput. The throughputs will be based on the nameplate thermal capacities for these sources as shown below. San Jose/Santa Clara must keep fuel throughput records to show their compliance with these requirements. San Jose/Santa Clara is already required to have District-approved flowmeters installed and operational for fuel monitoring.

| | |
|---|---|
| S-4 | 9.1 MM Btu/hr |
| S-5 | 9.1 MM Btu/hr |
| S-6 | 9.1 MM Btu/hr |
| S-7 | 20.9 MM Btu/hr |
| S-8 | 20.9 MM Btu/hr |

**Suggested Permit Conditions – S-4, S-5, S-6, S-7, S-8**

1. These engines shall be fired on natural gas, sewage sludge digester gas, diesel fuel, or any combination thereof. (Basis: Cumulative Increase)

2. NOx emissions, expressed as NO2, shall not exceed 140 ppmv at 15% O2. (Basis: 9-8-301.2, 9-8-302.1)

3. CO emissions shall not exceed 2000 ppmv at 15% O2. (Basis: 9-8-301.3, 9-8-302.3)

4. NMHC emissions shall not exceed 250 ppmv at 15% O2. Basis: Cumulative Increase)

5. District approved flowmeters, to measure fuel flow into the engines, shall be installed prior to any operation and maintained in good working order. (Basis: Cumulative Increase)

~~6. Visible particulate emissions shall not exceed 0.5 on the Ringelmann chart. (~~This part shall be removed because it has no regulatory basis.)

6. Thermal Capacity Limitations: Total thermal throughput shall not exceed the following limits (Basis: Cumulative Increase)

| | |
|---|---|
| S-4 | 9.1 MM Btu/hr |
| S-5 | 9.1 MM Btu/hr |
| S-6 | 9.1 MM Btu/hr |
| S-7 | 20.9 MM Btu/hr |
| S-8 | 20.9 MM Btu/hr |

7. The owner/operator shall ensure that an annual performance test is conducted on each engine in accordance with the District test procedures to demonstrate compliance with the NOx, CO, and NMHC limits required by parts 2, 3, and 4, respectively. (Basis: Regulation 2-6-409.2)

8. To determine compliance with the above conditions, the permit holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions. (Basis: Regulation 2-6-409.2)

   a. Monthly records of the quantity of gaseous fuel (therms) and distillate oil (gal) burned 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.

9. The permit holder shall not burn diesel fuel with a sulfur content in excess of 0.5% by weight (Basis: BAAQMD Regulation 9-1-304). To demonstrate compliance with this limit, every delivery of diesel fuel received onsite shall be accompanied by a vendor certification of sulfur content or shall be tested for sulfur content using a District-approved method. The vendor certifications or lab results shall be maintained onsite for at least 5 years and shall be made available to the District upon request. (Basis: Regulation 2-6-409.2, 2-6-501)

**S-9, S-10, S-11, S-12, S-13, S-14 Stationary IC Engines fired on Natural Gas or Digester Gas**

Sources S-9 through S-14 will be assigned condition # 17736

**District Regulations:**

| | | |
|---|---|---|
| **TSP:** | Regulation 6-301: | Ringelmann No. 1 |
| | Regulation 6-305: | Visible Emissions |
| | Regulation 6-310: | 0.15 gr/dscf |

These are combustion sources, which fire digester gas or natural gas. In general, we do not expect there to be significant particulate emissions from these sources. Condition 10475 will be assigned to sources S-4, S-5, S-6, S-7, S-8 (tri-fueled internal combustion engines) while a new condition will be established for S-9 through S-14.

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|---|---|---|
| **$SO_2$:** | Regulation 9-1-301: | GLC 0.5 ppm (3 min) or 0.25 ppm (60 min) or 0.05 ppm (24 hr) |
| | Regulation 9-1-302: | 300 ppm $SO_2$ from any source |
| | Regulation 9-1-304: | Fuel sulfur content (0.5% wt – liquid fuels) |

Digester Gas: We have estimated that as long as the digester gas sulfur concentrations do not exceed 1500 ppm, the 300 ppm sulfur compound emission standard will not be exceeded. The limiting factor for sulfur concentration in the digester gas is the sulfur emissions limit at engines S-36 and S-37. To keep $SO_2$ emissions from sources S-36 through S-39 below the total daily emission limit of 150-lb/24 hour, the total sulfur content in the digester gas will be limited to 350 ppm. For additional information on the derivation of this limit, see the discussion under sources S-36 and S-37. We do not expect this facility to have any difficult meeting this 350-ppm digester gas total sulfur content standard.

Natural Gas: Sulfur compound emissions from natural gas combustion are expected to be insignificant. No exceedances of any $SO_2$ standard would be expected under any operating scenario.

| | | |
|---|---|---|
| **NOx:** | Regulation 9-8-301.2: | 140 ppm @15% oxygen |
| | Regulation 9-8-302.1: | 140 ppm @15% oxygen |

NOx limitations are written into Condition 10475 specifying 140-ppm maximum. A new part will be written into this condition requiring annual source testing to demonstrate compliance with this limitation.

| | | |
|---|---|---|
| **CO:** | Regulation 9-8-301.3: | 2000 ppmv @15% oxygen |
| | Regulation 9-8-302.3: | 2000 ppmv @15% oxygen |

**NMHC:** No specific requirement is identified for this source. A previous condition existed that limited NMHC to 250 ppm. This may have been roughly based on the miscellaneous emissions standard of 300 ppm total carbon as listed in Regulation 8-2-301. The existing condition will remain as stated with an annual source test requirement listed in the newly established condition for these sources.

Note: The owner/operator may propose an alternative monitoring plan in place of the annual source test for NOx, CO, NMHC, SO2, and TSP to the District for approval. If the alternative monitoring plan is approved the plan will supercede the annual source-testing requirement. Approvals shall be processed using the permit revision procedure contained in Regulation 2 Rule 6, and the provisions of Regulation 2 Rule 1.

**Thermal Capacity Limitations:** Due to the possible use of dual fuels, a throughput condition will be established limiting these sources to a total thermal throughput. The throughputs will be based on the nameplate - permitted limitations for these sources as follows: San Jose/Santa Clara must keep fuel throughput records to show compliance with these requirements. San Jose/Santa Clara is already required to have District-approved flowmeters installed and operational for fuel monitoring.

| | |
|---|---|
| S-9 | 19.9 MM Btu/hr |
| S-10 | 19.9MM Btu/hr |
| S-11 | 19.9 MM Btu/hr |
| S-12 | 15.7 MM Btu/hr |
| S-13 | 15.7 MM Btu/hr |
| S-14 | 15.7 MM Btu/hr |

**Permit Condition #17736 – S-9, S-10, S-11, S-12, S-13, S-14**

1. These engines shall be fired on natural gas or sewage sludge digester gas or any combination thereof. (Basis: Cumulative Increase)

2. NOx emissions, expressed as $NO_2$, shall not exceed 140 ppmv at 15% O2. (Basis: 9-8-301.1, 9-8-302.1)

3. CO emissions shall not exceed 2000 ppmv at 15% O2. (Basis: 9-8-301.3, 9-8-302.3)

4. NMHC emissions shall not exceed 250 ppmv at 15% O2. (Basis: Cumulative Increase)

5. District approved flowmeters, to measure fuel flow into the engine(s), shall be installed prior to any operation and maintained in good working order. (Basis: Cumulative Increase)

6. Thermal Capacity Limitations: Total thermal throughput shall not exceed the following limits (Basis: Cumulative Increase)

| | |
|---|---|
| S-9 | 19.9 MM Btu/hr |
| S-10 | 19.9 MM Btu/hr |
| S-11 | 19.9 MM Btu/hr |
| S-12 | 15.7 MM Btu/hr |
| S-13 | 15.7 MM Btu/hr |
| S-14 | 15.7 MM Btu/hr |

7. The owner/operator shall ensure that an annual performance test is conducted on each engine in accordance with the District test procedures to demonstrate compliance with the NOx, CO, and NMHC limits required by parts 2, 3, and 4, respectively. (Basis: Regulation 2-6-409.2)

8. To determine compliance with the above conditions, 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 gaseous fuel (therms) burned at these sources.

   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.

**S-15, S-16 Paint Spray Booth**

There is no pre-existing BAAQMD permit Condition for these sources. These sources have been assigned condition # 17737.

**District Regulations:**

The applicable District rules for these sources are found in Regulation 8-1 (General Solvent & Surface Coating) and 8-19 (Surface Coating of Miscellaneous Metal Parts and Products). Included in these regulations are VOC limits for coatings, equipment limitations, loss minimization methods, recordkeeping, and general solvent clean-up requirements.

A condition will be established with coating, primer and cleanup solvent usage limitations. Recordkeeping requirements will also be included in the conditions.

**Suggested Permit Conditions – S-15, S-16**

1. The total amount of paint and primer coatings used at S-15 and S-16, Paint Spray Booths, shall not exceed the following limits during any consecutive twelve-month period. (Basis: Cumulative Increase)

   S-15: 50 gal paint, 50 gal primer
   S-16: 50 gal paint, 50 gal primer

2. The net amount of clean-up solvent used at S-15 and S-16, coating spray booths, shall not exceed the following limits during any consecutive twelve-month period. (Basis: Cumulative Increase)

   S-15: 50 gal MEK, 50 gal Mineral Spirits
   S-16: 50 gal MEK, 50 gal Mineral Spirits

3. To demonstrate compliance with the above conditions, the operator shall maintain the following records in a District-approved log (Basis: Regulation 2-6-409.2):

   a. Total daily coating usage at S-15 and S-16.
   b. Net daily clean-up solvent usage at S-15 and S-16.
   c. Cumulative monthly totals of the above daily usage rates, in gallons per month.

   These records shall be kept on-site and made available for District inspection for a period of five years from the date on which a record is made.

**S-26 Gasoline Dispensing Island**

There is no pre-existing BAAQMD permit Condition for this source. This source has been assigned condition # 17738.

Looking into the records has not provided information about how much gasoline throughput is appropriate. In light of this we have evaluated the actual annual usage and will adjust this usage upward by a factor between 1.5 and 2 for operating flexibility. From July 1 1999 to June 30, 2000, the actual usage was 28,141 gallons. 50,000 gallons represents a factor of 1.77. Annual usage will be conditioned to a limit of 50,000 gal/yr (rolling 12-month period).

This source is subject to the requirements of Reg 8 Rule 7 (Gasoline Dispensing Facilities), & SIP 8-7. The requirements in these regulations principally deal with phase 1 and phase 2 equipment requirements. The new permit condition for this source will require throughput monitoring and 5 year records retention.

**S-36, S-37 Stationary IC Engines fired on Natural Gas or Digester Gas**

Existing BAAQMD Conditions: 6065. This condition will be revised as needed to enhance the specification of operating requirements. This condition includes parts specific to sources S-36 and S-37, parts specific to sources S-38 and S-39, and parts common to S-36 through S-39.

**District Regulations:**

| | | |
|---|---|---|
| **TSP:** | Regulation 6-301: | Ringelmann No. 1 |
| | Regulation 6-305: | Visible Emissions |
| | Regulation 6-310: | 0.15 gr/dscf |

These are combustion sources using gaseous fuels. In general, we do not expect there to be significant particulate emissions from these sources. It is widely understood that the combustion of gaseous fuels does not require a permit conditions to achieve compliance with a Ringelmann 1 limitation. Condition 6065, Item 4 limits TSP emissions to 36.4 lb in any consecutive 24 hour period. Based on the exhaust flowrate for these engines, this amounts to a particulate concentration of approximately 0.04 grains/dscf. This is well below the Reg 6-310 standard of 0.15 gr/dscf. T

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|---|---|---|
| **$SO_2$:** | Regulation 9-1-301: | GLC 0.5 ppm (3 min) or 0.25 ppm (60 min) or 0.05 ppm (24 hr) |
| | Regulation 9-1-302: | 300 ppm $SO_2$ from any source |

Digester Gas: As shown below, the federally enforceable emission limit of 300 ppm $SO_2$ in the exhaust gas (BAAQMD Regulation 9-1-302) is equivalent to a total reduced sulfur concentration of 1545 ppmv in the digester gas. This is due to the increase in volume and resultant dilution from combustion of the air and gas mixture. This digester gas limit would be acceptable for all operation, were it not for the 126.9 lb/day per engine maximum $SO_2$ emission standard from S-36 and S-37 as well as the 150 lb/day total $SO_2$ emission limit in Condition 6065. Based on combustion stoichiometry, the sulfur content in the digester gas that is equivalent to 126.9 lb/day per engine (253.8 lb/day total, $SO_2$, from both engines combined) is 606 ppmv. The sulfur content in the digester gas that is equivalent to 150 lb/day total $SO_2$ (from S-36 – S-39 combined) emitted is 358 ppmv.

*Sulfur in digester gas (300 ppm $SO_2$ exhaust):* [300E-6 cu ft $SO_2$/cu ft flue gas][1 cu ft S/cu ft SO2][5.1506 cu ft f.g./cu ft digester gas][1E6] = 1545 ppmv of total reduced sulfur in digester gas.

*Sulfur in digester gas @253.8 total lb $SO_2$ max/day from S-36 & S-37 combined)*: Basis: 2.544E6 scf/day (53,000 scf/hr per engine, no sulfur from boilers): [253.8 lb/day/64 lb/mole $SO_2$][389 cu ft $SO_2$/mole $SO_2$][1E6]/[2.544E6 scf/day] = 606 ppmv total reduced sulfur in digester gas. [Note: Typical sulfur concentrations in the digester gas average approximately 150 ppm]

*Sulfur in digester gas @150 total lb $SO_2$ max/day from S-36 – S-39)*: Basis: 2.544E6 scf/day (53,000 scf/hr per engine, no sulfur from boilers burning natural gas): [150 lb/day/64 lb/mole $SO_2$][389 cu ft $SO_2$/mole $SO_2$][1E6]/[2.544E6 scf/day] = 358 ppmv total reduced sulfur in digester gas. Typical sulfur concentrations in the digester gas average approximately 150 ppm. The digester gas sulfur standard will be set at 350 ppm. Based on historical digester gas analyses San Jose/Santa Clara Water Pollution Control Plant should have no difficulty meeting the 350 ppm standard for digester gas sulfur content.

This limit (350 ppm total reduced sulfur in digester gas) will be established as a surrogate for the 150 lb/day $SO_2$ standard in Condition 6065. The 126.9 lb/day per engine condition will be removed.

Natural Gas: Sulfur compound emissions from natural gas combustion are expected to be insignificant. No exceedances of any $SO_2$ standard would be expected under any operating scenario.

| | | |
|---|---|---|
| **NOx:** | Regulation 9-8-301.2: | 140 ppm @15% oxygen |
| | Regulation 9-8-302.1: | 140 ppm @15% oxygen |

NOx limitations are written into Condition 6065 specifying 1.8 gr/hp-hr maximum. This standard is based on BACT requirements as established at the time the engines were permitted. For natural gas combustion 1.8 g/hp-hr is equivalent to about 131 ppm at 15% oxygen. For digester gas the 1.8 gr/hp-hr is approximately equivalent to 202 ppmv @ 15% oxygen. The 1.8 gr/hp-hr standard will be retained since the previous BACT standard is more stringent than the BARCT standard specified in Reg 9-8-301 and 9-8-302. A new part will be written into this condition requiring annual source testing to demonstrate compliance with this limitation.

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|---|---|---|
| **CO:** | Regulation 9-8-301.3: | 2000 ppmv @15% oxygen |
| | Regulation 9-8-302.3: | 2000 ppmv @15% oxygen |

Condition 6065 specifies 413.4 lb/24 hr period. This number is based on previous calculations performed for the permitting of these engines – to minimize the cumulative increase. Based on source testing this is approximately equivalent to 725 ppm. Assuming 100% digester gas would give a worst case concentration of approximately 1,100 ppm – well below the 2000 ppm standard. Condition 6065 will retain the 413.3 lb/24 hr standard.

**NMHC:** No specific regulatory standard listed.

Condition 6065 specifies a limit of 87.8 lb/24hr. This standard is based on minimizing the cumulative increase and will be retained in the revised condition for these sources. This requirement will be demonstrated through an annual source test.

Note: The owner/operator may propose an alternative monitoring plan in place of the annual source test for NOx, CO, NMHC, SO2, and TSP to the District for approval. If the alternative monitoring plan is approved the plan will supercede the annual source-testing requirement. Approvals shall be processed using the permit revision procedure contained in Regulation 2 Rule 6, and the provisions of Regulation 2 Rule 1.

**Thermal Capacity Limitations:** Due to the possible use of multiple fuels, a throughput condition will be established (as part of Condition 6065) limiting these sources to a total thermal throughput. The throughputs will be based on the original permitted limitations for these sources as follows: San Jose/Santa Clara must keep fuel throughput records to show compliance with these requirements. San Jose/Santa Clara is already required to have District-approved flowmeters installed and operational for fuel monitoring.

| | |
|---|---|
| S-36 | 30 MM Btu/hr |
| S-37 | 30 MM Btu/hr |

**Permit Condition 6065 (partial) – S-36 and S-37**

1. These engines shall be fired on natural gas or sewage sludge digester gas or any combination thereof. (Basis: Cumulative Increase)

2.~~1.~~Emissions of NOx shall not exceed 1.8 grams/hp-hr per engine. (Basis: BACT)

3.~~2.~~ Emissions of CO shall not exceed 413.4 lb per engine in any consecutive 24 hour period. (Basis: Cumulative Increase)

~~3. Emissions of $SO_2$ shall not exceed 126.9 lb. in any consecutive 24 hour period. (Basis: Cumulative Increase)~~

4. Emissions of TSP shall not exceed 36.4 lb per engine in any consecutive 24 hour period. (Basis: Cumulative Increase)

5. Emissions of NMHC shall not exceed 87.8 lb per engine in any consecutive 24 hour period. (Basis: Cumulative Increase)

6. Thermal Capacity Limitations: Total thermal throughput shall not exceed the following limits (Basis: Cumulative Increase)

| | |
|---|---|
| S-36 | 30 MM Btu/hr |
| S-37 | 30 MM Btu/hr |

**S-38, S-39 Commercial Boilers fired on Natural Gas Only**

Existing BAAQMD Conditions: 6065. This condition will be revised as needed to enhance the specification of operating requirements. This condition includes parts specific to sources S-36 and S-37, parts specific to sources S-38 and S-39, and parts common to S-36 through S-39.

**District Regulations:**

| | | |
|---|---|---|
| **TSP:** | Regulation 6-301: | Ringelmann No. 1 |
| | Regulation 6-305: | Visible Emissions |
| | Regulation 6-310: | 0.15 gr/dscf |

These are combustion sources using exclusively gaseous fuels. In general, we do not expect there to be significant particulate emissions from these sources. It is widely understood that no permit conditions are needed to achieve compliance with a Ringelmann 1 limitation. No additional condition will be established for TSP.

| | | |
|---|---|---|
| **$SO_2$:** | Regulation 9-1-301: | GLC 0.5 ppm (3 min) or 0.25 ppm (60 min) or 0.05 ppm (24 hr) |
| | Regulation 9-1-302: | 300 ppm $SO_2$ from any source |

Natural Gas: Sulfur compound emissions from natural gas combustion are expected to be insignificant. No exceedances of any $SO_2$ standard would be expected under any operating scenario.

| | | |
|---|---|---|
| **NOx:** | Regulation 9-7-301.1: | 30 ppm @3% oxygen |

NOx limitations are currently written into Condition 6065 in the form of a combined weight daily NOx emission of 774 lb/24 hr for sources S-36 through S-39 combined. This 774 lb/day is a redundant standard – derived from the maximum allowable NOx emissions from these sources at their individual nameplate capacities and emission limits. Since the pound per day limit is redundant it will be removed from Condition 6065 in favor of the 1.8 g/hp-hr standard for S-36 and S-37 and 30 ppm for S-38 and S-39. A new part shall be written into this condition requiring annual source testing to demonstrate compliance with this limitation.

| | | |
|---|---|---|
| **CO:** | Regulation 9-7-301.2: | 400 ppmv @3% oxygen |

A new requirement will be written into Condition 6065 specifying the 400 ppmv standard for CO emissions. This will be demonstrated by annual source testing.

Note: The owner/operator may propose an alternative monitoring plan in place of the annual source test for NOx, CO, NMHC, SO2, and TSP to the District for approval. If the alternative monitoring plan is approved the

plan will supercede the annual source-testing requirement. Approvals shall be processed using the permit revision procedure contained in Regulation 2 Rule 6, and the provisions of Regulation 2 Rule 1.

**Thermal Capacity Limitations:** Throughput conditions based on thermal throughput will be established for these boilers. San Jose/Santa Clara must keep fuel throughput records to show compliance with these requirements. San Jose/Santa Clara is already required to have District-approved flowmeters installed and operational for fuel monitoring.

| | |
|---|---|
| S-38 | 12.5 MM Btu/hr |
| S-39 | 12.5 MM Btu/hr |

**Suggested Permit Conditions– S-38 and S-39 (per boiler basis)**
**[continuation of Condition 6065]**

8. These boilers shall only be fired on natural gas. (Basis: Cumulative Increase)

9. NOx emissions, expressed as $NO_2$, shall not exceed 30 ppmv at 15% O2. (Basis: 9-7-301.1)

10. CO emissions shall not exceed 400 ppmv at 15% O2. (Basis: 9-7-301.2)

11. District approved flowmeters, to measure fuel flow into the boiler, shall be installed prior to any operation and maintained in good working order. (Basis: Reg 2-6-409.2)

12. Thermal Capacity Limitations: Total thermal throughput shall not exceed the following limits (Basis: Cumulative Increase)

| | |
|---|---|
| S-38 | 12.5 MM Btu/hr |
| S-39 | 12.5 MM Btu/hr |

Conditions for S-36, S-37, S-38, and S-39 Combined

13. The combined emissions of NOx from S-36, S-37, S-38 and S-39 shall not exceed a total of 774 lb. in any consecutive 24 hour period. (Basis: Cumulative Increase)

14. The combined emissions of $SO_2$ from S-36, S-37, S-38 and S-39 shall not exceed a total of 150 lb. in any consecutive 24 hour period. (Basis: Cumulative Increase)

15. The owner/operator shall ensure that an annual performance test is conducted on each engine or boiler in accordance with the District test procedures to demonstrate compliance with the NOx, CO, NMHC, $SO_2$ and TSP limits (where applicable) as required by parts 2, 3, 4, 5, 8, and 9, respectively. The owner/operator 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 testing requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)

16. To determine compliance with the above conditions, 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 fuel (therms) burned at these sources.

b) Monthly records shall be totaled for each consecutive 12-month period.

All records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.

**S-42, S-43, S-44, S-45, S-46, S-47, S-49, S-50, S-51 Cold Solvent Cleaners**

There was no pre-existing BAAQMD permit Condition for these sources. These sources have been assigned condition # 17739.

**S-46 Cold Solvent Cleaner**

This solvent cleaner was previously exempt from permitting requirements. As of May 2000, the exemption was changed substantially. This cold cleaner now requires a permit. All solvent cleaning sources will have similar requirements and will be conditioned similarly. To bring this solvent cleaner into the permit system, a request for fees was issued – requiring payment of permit to operate fees and MFR fees (but no initial or filing fees). Once these fees have been paid, the data forms will be entered, the exempt status will be removed, and the conditions will be entered and linked to this solvent cold cleaner.

**Permit Condition 17739: S-42 – S-47, S-49 – S-51**

1. Net usage of stoddard solvent shall not exceed the following in any consecutive 12 month period: (Basis: Cumulative Increase)

| | |
|---|---|
| S-42 | 40 gallons |
| S-43 | 20 gallons |
| S-44 | 20 gallons |
| S-45 | 20 gallons |
| S-46 | 30 gallons |
| S-47 | 30 gallons |
| S-49 | 40 gallons |
| S-50 | 40 gallons |
| S-51 | 80 gallons |

2. Prior to changing the solvent type, San Jose/Santa Clara WWTP shall first apply for and receive an authority to construct for a process modification. (Basis: Cumulative Increase, District Toxics Policy)

3. In order to demonstrate compliance with the above usage limits, the following records shall be maintained on a District-approved log. These records shall be kept on-site and made available for District inspection for a period of 5 years from the date on which a record is made. These records will be made daily and summarized on a monthly basis: (Basis: Regulation 2-6-409.2)

   a. Quantities of each type of solvent used at this source.
   b. Quantities of each type of solvent recovered for disposal or recycling.
   c. Net usage of each type of solvent.

**S-54, Engine Generator: Digester Gas, Natural Gas, Diesel Fuel Fired**

Existing BAAQMD Condition: 8499

This engine is preferentially fired on digester gas and secondarily on natural gas. The engine can be fired on diesel exclusively. The existing conditions which limit emissions of NOx, CO, NMHC, SO2 and particulate emissions are adequate although additional conditions will be added to address the thermal throughput limitations, sulfur content in diesel fuel, visible emissions, and monitoring and recordkeeping. Annual performance testing will be required to demonstrate compliance.

Note: The owner/operator may propose an alternative monitoring plan in place of the annual source test for NOX, CO, and NMHC to the District for approval. If the alternative monitoring plan is approved, the plan will supersede the annual source-testing requirement. Approvals shall be processed using the permit revision procedure contained in Regulation 2, Rule 6, and the provisions of Regulation 2, Rule 1.

**Permit Condition 8499 – S-54**

1. Except as provided in item 3 below, S-54 shall be fired on sewage sludge digester gas, natural gas, or a blend of sewage sludge digester gas and natural gas, with a diesel pilot fuel. (Basis: Cumulative Increase)

2. Thermal Capacity Limitations: Total thermal throughput shall not exceed 28.9 MM Btu/hr (Basis: Cumulative Increase)

3.~~2.~~ In the event of catastrophic damage to the natural gas fuel supply, the engine may be fired ~~solely on sewage sludge digester gas with a diesel pilot fuel or~~ solely on diesel fuel if insufficient sewage sludge digester gas exists. (Basis: Cumulative Increase)

4.~~3.~~ ~~Diesel fuel sulfur content shall be less than 0.05%. San Jose/Santa Clara WWTP~~ The permit holder shall not burn diesel oil with a sulfur content in excess of 0.5% by weight (Basis: BAAQMD Regulation 9-1-304). To demonstrate compliance with this limit, every delivery of diesel oil received onsite shall be accompanied by a vendor certification of sulfur content or shall be tested for sulfur content using a District-approved method. The vendor certifications or lab results shall be maintained onsite for at least 5 years and shall be made available to the District upon request. (Basis: Regulation 2-6-409.2, 2-6-501)

5.~~4.~~ NOx emissions, calculated as $NO_2$, shall not exceed 1.0 gram/bhp-hr, except in the event of catastrophic damage to the natural gas fuel supply, when the engine may be fired solely on diesel fuel ~~or solely on sewage sludge digester gas with a diesel pilot fuel~~. (Basis: BACT, Cumulative Increase)

6.~~5.~~ CO emissions from S-54 shall not exceed 3.3 grams/bhp-hr. (Basis: BACT, PSD)

7.~~6.~~ NMHC emissions from S-54 shall not exceed 0.80 grams/bhp-hr. (Basis: BACT, Cumulative Increase)

8.~~7.~~ $SO_2$ emissions from S-54 shall not exceed 0.20 grams/bhp-hr, except in the event of catastrophic damage to the natural gas fuel supply, when the engine may be fired solely on diesel fuel ~~or solely on sewage sludge digester gas with a diesel pilot fuel~~. (Basis: Cumulative Increase)

9~~8.~~ Particulate emissions from S-54 shall not exceed 0.085 grams/bhp-hr, except in the event of catastrophic damage to the natural gas fuel supply, when the engine may be fired solely on diesel fuel ~~or solely on sewage sludge digester gas with a diesel pilot fuel~~. (Basis: Cumulative Increase)

10.~~9.~~ The total release of emissions from S-54 shall not exceed the following amounts in any rolling 365 consecutive day period: (Basis: Cumulative Increase)

NOx 36.2 tons

| | |
|---|---|
| CO | 119.4 tons |
| NMHC | 28.9 tons |
| PM10 | 3.1 tons |
| SO2 | 7.2 tons |

11.~~10.~~ District approved flowmeters to measure fuel flow for each fuel into S-54 shall be installed and maintained. (Basis: Regulation 1-441)

~~12.11. The logbook shall be maintained onsite and made available to District staff upon request. These records shall be retained for a period of at least two years from the date of entry.~~

12.- Visible particulate emissions from S-54 shall not exceed Ringelmann 1.0. (Basis: Regulation 6-301)

13. The owner/operator shall ensure that an annual performance test is conducted on this engine in accordance with the District test procedures to demonstrate compliance with the NOx, CO, NMHC, $SO_2$ and TSP limits as required by parts 4, 5, 6, 7, 8, and 9 respectively and the limits in Regulation 9, Rule 8. (Basis: Regulation 2-6-409.2)

14. To determine compliance with the above conditions, the Permit Holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions. (Basis: Regulation 2-6-409.2):

a. Daily records of the hours of operation and horsepower or kilowatt output of S-54.

b. Monthly records of the quantity of gaseous fuel (therms) and distillate oil (gal) burned at this source.

c. Monthly records shall be totaled for each consecutive 12-month period.

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

e. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations. (Basis: Cumulative Increase, BAAQMD 9-1-304)

**S-100, Municipal Wastewater Treatment Plant**

There was no pre-existing BAAQMD permit condition for this source. This source has been assigned condition # 17740.There is no existing BAAQMD Condition for this source. The new condition will establish a dry weather and wet weather throughput limitation, as well as address issues of public nuisance (odors) and monitoring, recordkeeping and reporting.

**Suggested Permit Conditions – Source S-100 Municipal Wastewater Treatment Plant**

1. Total wastewater flow shall not exceed 167 million gallons/day dry flow, 360 million gallons/day wet flow. (Basis: Regulation 2-1-301)

2. To determine compliance with the above conditions, the Permit Holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions: (Basis: Regulation 2-6-409.2)

a. Daily and monthly 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.

**S-210, Anaerobic Digesters**

There was no pre-existing BAAQMD permit condition for this source. This source has been assigned condition # 17741. This addresses the following: 1) abatement of digester gas emissions (by either combustion at the energy recovery systems) or through the flares, 2) digester gas sulfur content, 3) flaring recordkeeping.

Digester Gas: We have estimated that as long as the digester gas sulfur concentration does not exceed 1500 ppm, the 300 ppm sulfur compound emission standard will not be exceeded. The limiting factor for sulfur concentration in the digester gas however, is the sulfur emissions limit at engines S-36 and S-37. To keep $SO_2$ emissions below the 150 lb/24 hour limit the total sulfur content in the digester gas will be limited to 350 ppm. For additional information on the derivation of this limit, see the discussion under sources S-36 and S-37.

A condition will be written for the digester source S-210 limiting the sulfur content to 350 ppm. Further, a part will be included in the new condition requiring digester gas monitoring at least once a week. Typical digester gas sulfur concentrations range from 100 to 200 ppm. We do not expect this facility to have any problem meeting the 350-ppm sulfur content limitation.

**Suggested Permit Conditions – Source S-210 Anaerobic Digesters**

1. Emissions from S-210 shall be abated at all times by combustion at any or all of the following sources: S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-36, S-37, S-54 or at abatement devices A-5, A-6, A-7, A-8, or A-9, subject to the criteria identified in Part 2 of these conditions. (Basis: Regulation 1-301)

2. Emissions from S-210 shall be abated by any or all of the following: A-5, A-6, A-7, A-8, and A-9 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 350 ppm.

   To demonstrate compliance with this standard the permit holder shall monitor and record the sulfur content of the digester gas at least once every calendar week. If the permit holder can demonstrate 3 months of digester gas sulfur results lower than 200 ppm the monitoring frequency for sulfur analysis may be reduced to at least once every calendar month. (Basis: Regulation 9-1-302)

4. San Jose/Santa Clara WWTP shall record the dates, hours of use, and purpose of flaring in a District approved logbook, when any of the flares are used. (Basis: Regulation 2-6-409.2)

**S-221, Cold Solvent Cleaner**

Existing Condition: 7910

Although a condition was established for this source, this solvent cleaner was previously exempt from permitting requirements. As of May 2000, the exemption was changed substantially. This cold cleaner will now be a permitted source. All solvent cleaning sources will have similar requirements and will be conditioned similarly. To bring this solvent cleaner into the permit system, a request for fees was issued – requiring payment of permit to operate fees and MFR fees (but no initial or filing fees). Once these fees have been paid, the data forms will be entered, the exempt status will be removed, and the conditions will be entered and linked to this solvent cold cleaner.

**Permit Condition 7910 – Source S-221 Cold Solvent Cleaner**

1. The ~~combined total~~ net usage of ~~methyl ethyl ketone,~~ stoddard solvent~~, monusol, and kerosene~~ at S-221 shall not exceed 21 gallons ~~7.2 pounds~~ in any 12 month period. (Basis: Cumulative Increase)

~~2) Precursor organic compound emissions at S-221 shall not exceed 0.004 tons in any rolling 12 consecutive month period.~~

~~3) There shall be no non-precursor organic compound emissions at S-221.~~

~~4) The monthly net solvent usage at S-221 shall be recorded, by name, in a District approved log and retained for at least two~~ five ~~years from date of entry. This log shall be kept on site and made available to the District staff on request.~~

2. In order to demonstrate compliance with the above condition, the following records shall be maintained on a District approved log. These records shall be kept on-site and made available for District inspection for a period of 24-months from the date on which a record is made. These records will be made daily and summarized on a monthly basis (Regulation 2-6-409.2):
   a. quantities of each type of solvent used at this source
   b. quantities of each type of solvent recovered for disposal or recycling
   c. net usage of each type of solvent.

3) Prior to changing the solvent type, the permit holder ~~San Jose/Santa Clara WWTP~~ shall apply for and receive an Authority to Construct for a process modification. (Basis: Cumulative Increase, District Toxics Policy)

**Permit Shield:**

No permit shield was requested.

## Alternate Operating Scenario:

No alternative operating scenarios were presented in the permit application.

## Compliance Status:

No non-compliance was identified in the permit application. The Compliance Certification was signed by Ronald E. Garner, dated June 9, 2000.