

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

**RULE 9-1 – INORGANIC GASEOUS POLLUTANTS, SULFUR DIOXIDE**

*(Adopted December 19, 1979) (Amended May 21, 1980; March 17, 1982; February 16, 1983; July 18, 1990; May 20, 1992; March 15, 1995)*

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**REGULATION 9  
INORGANIC GASEOUS POLLUTANTS  
RULE 1  
SULFUR DIOXIDE**

**9-1-100 GENERAL**

**9-1-101 Description:** This Rule establishes emission limits for sulfur dioxide from all sources including ships, and limits ground level concentrations of sulfur dioxide.

**9-1-110 Conditional Exemption, Area Monitoring:** The 300 ppm limitation of Section 9-1-302 shall not apply to a person who meets the requirements of subsections 9-1-110.1 and 110.2, provided such person has complied with those requirements prior to January 1, 1980.

110.1 A person shall be subject to the monitoring, records and reporting requirements contained in Regulation 1, including Sections 1-510, 530, 540, 542, 543, and 544.

110.2 A person shall not emit sulfur dioxide in quantities which result in ground level concentrations of sulfur dioxide in excess of the limits specified in Section 9-1-301. This subsection shall not apply to ground level concentrations occurring on the property from which such emission occurs, provided such property, from the emission point to the point where the excess occurs, is physically secured against public access by the person responsible for the emission. (Amended May 20, 1992)

**9-1-200 DEFINITIONS**

**9-1-201 Deleted May 20, 1992**

**9-1-202 Deleted May 20, 1992**

**9-1-203 Deleted May 20, 1992**

**9-1-204 Start-up:** For the purposes of Section 9-1-605, start-up begins at the time the feed stock is introduced into the process and may proceed for a period not to exceed four consecutive hours. (Amended May 20, 1992)

**9-1-205 Fresh Fruit Sulfuring Operation:** Any operation where freshly cut fruit is placed in a sulfur house in order to come into contact with sulfur dioxide. (Adopted February 16, 1983)

**9-1-206 Sulfur Removal and Recovery System:** A set of process units which remove H<sub>2</sub>S from refinery gas streams and the reduced sulfur compounds and ammonia from process water streams. The reduced sulfurous compounds are recovered as sodium hydrosulfide (NaSH), elemental sulfur, sulfuric acid, or other sulfate compounds. The sulfurous compounds are recovered as elemental sulfur or as sulfuric acid. The process units consist of a sour water stripper, regenerative gas treatment system, and a sulfur recovery plant, a sulfuric acid plant, or other process units and facilities which achieve removal efficiencies as required by Section 9-1-313.2. (Adopted July 18, 1990; Amended March 15, 1995)

**9-1-207 Sour Water Stripper:** A process unit which removes reduced sulfur compounds from process water using a distillation (stripping) process. (Adopted July 18, 1990)

**9-1-208 Regenerative Gas Treatment System:** A regenerative process system that removes H<sub>2</sub>S from refinery gas streams and recovers the H<sub>2</sub>S as H<sub>2</sub>S or sulfur. (Adopted July 18, 1990)

**9-1-209 Sulfur Recovery Plant:** A process unit which processes sulfur and ammonia containing material and produces a final product of elemental sulfur. (Adopted July 18, 1990)

**9-1-210 Sulfuric Acid Plant:** A process unit which processes sulfur containing material and produces a final product of sulfuric acid or oleum. (Adopted July 18, 1990)

**9-1-211 Shutdown:** For the purposes of Section 9-1-605, shutdown begins at the time the feed stock is discontinued. (Adopted May 20, 1992)

**9-1-300 STANDARDS**

- 9-1-301 Limitations on Ground Level Concentrations:** A person shall not emit from sources other than ships, sulfur dioxide in quantities which result in ground level concentrations in excess of 0.5 ppm continuously for 3 consecutive minutes or 0.25 ppm averaged over 60 consecutive minutes, or 0.05 ppm averaged over 24 hours. This section shall not apply to ground level concentrations occurring on the property from which such emission occurs, provided such property, from the emission point to the point where the excess occurs, is physically secured against public access by the person responsible for the emission. (Amended May 20, 1992)
- 9-1-302 General Emission Limitation:** A person shall not emit from any source, other than a ship, a gas stream containing sulfur dioxide in excess of 300 ppm (dry). This section shall not apply to the following sources:
- 302.1 Any source which is subject to any of the limitations in Sections 9-1-304 through 9-1-312.
- 302.2 Any source which satisfies the conditions in Sections 9-1-110. (Amended February 16, 1983)
- 9-1-303 Emissions from Ships:** A person shall not emit a gas stream containing sulfur dioxide in excess of 2000 ppm from any ship, except when the ship is entering the port from outside the District. Emissions resulting only from the combustion of liquid fuel with a sulfur content less than or equal to 3.34% by weight shall be considered in compliance with this Section.
- 9-1-304 Fuel Burning (Liquid and Solid Fuels):** A person shall not burn any liquid fuel having a sulfur content in excess of 0.5% by weight, or solid fuel of such sulfur content as would result in the emission of a gas stream containing more than 300 ppm (dry) of sulfur dioxide. This section shall not apply to:
- 304.1 The burning of sulfur, hydrogen sulfide, acid sludge or other compounds used in the manufacture of sulfur compounds;
- 304.2 The use of liquid or solid fuels to propel any motor vehicle, aircraft, missile, boat or ship;
- 304.3 The use of liquid or solid fuels which do not result in the emission of a gas stream containing more than 300 ppm (dry) of sulfur dioxide.
- 9-1-305 Deleted May 20, 1992**
- 9-1-306 Deleted May 20, 1992**
- 9-1-307 Emission Limitations for Sulfur Recovery Plants:** A person shall not emit, from any source in a sulfur recovery plant, effluent process gas containing sulfur dioxide in excess of 250 ppm by volume (dry) calculated at zero percent oxygen. Plants which emit less than 45 kg (100 lbs.) per day of sulfur dioxide shall not be subject to this limitation. (Amended February 16, 1983; May 20, 1992)
- 9-1-308 Deleted May 20, 1992**
- 9-1-309 Emission Limitations for Sulfuric Acid Plants:** A person shall not emit, from any source in a sulfuric acid plant, effluent process gas containing sulfur dioxide in excess of 300 ppm by volume calculated at 12% oxygen. (Amended February 16, 1983; May 20, 1992)
- 9-1-310 Emission Limitations for Fluid Catalytic Cracking Units, Fluid Cokers, and Coke Calcining Kilns:**
- 310.1 A person shall not emit, from any source in a fluid catalytic cracking unit or fluid coker, effluent process gas containing sulfur dioxide in excess of 1,000 ppm by volume.
- 310.2 A person shall not emit, from any coke calcining kiln, effluent process gas containing sulfur dioxide in excess of 400 ppm by volume or in excess of 113 kg (250 pounds) per hour, whichever is more restrictive.
- 310.3 A person subject to subsections 9-1-310.1 or 310.2 shall comply with the requirements in subsections 9-1-110.1 and 110.2.
- 9-1-311 Emission Limitations for Catalyst Manufacturing Plants:**
- 311.1 Deleted May 20, 1992
- 311.2 A person shall not emit, from any source in a catalyst manufacturing plant, effluent process gas containing sulfur dioxide in excess of 22 kg (50 pounds) per hour. (Adopted May 21, 1980; Amended May 20, 1992)

- 9-1-312 Emission Limitations for Fresh Fruit Sulfuring Operations:**
- 312.1 A person shall not operate any fresh apricot sulfuring operation which uses greater than 4.5 kg (10 pounds) of elemental sulfur or 9.0 kg (20 pounds) of gaseous SO<sub>2</sub> per 9.0 metric ton (1 short ton) of fresh apricots.
  - 312.2 A person shall not operate any fresh peach sulfuring operation which uses greater than 5.5 kg (12 pounds) of elemental sulfur or 10.9 kg (24 pounds) of gaseous SO<sub>2</sub> per 9.0 metric ton (1 short ton) of fresh peaches.
  - 312.3 A person shall not operate any fresh pear sulfuring operation which uses greater than 6.8 kg (15 pounds) of elemental sulfur or 13.6 kg (30 pounds) of gaseous SO<sub>2</sub> per 9.0 metric ton (1 short ton) of fresh pears.

(Adopted February 16, 1983; Amended May 20, 1992)

- 9-1-313 Sulfur Removal Operations at Petroleum Refineries:** Effective September 1, 1990, a person shall not operate a petroleum refinery processing more than 20,000 barrels per stream day of crude oil unless one of the following is met:
- 313.1 The sulfur content of the crude oil does not exceed 0.10 percent by weight, or
  - 313.2 There is a sulfur removal and recovery system that removes and recovers, on a refinery wide basis, 95% of the H<sub>2</sub>S from the refinery fuel gas, that removes and recovers, on a refinery wide basis, 95% of the H<sub>2</sub>S from the process water streams, and removes 95% of the ammonia from the process water streams, provided, however, any refinery which removes sulfurous compounds containing sulfur equivalent of 16.5 tons or more of elemental sulfur in any one day shall install a sulfur recovery plant or a sulfuric acid plant.
  - 313.3 A binding, legally enforceable agreement or court order exists which mandates the construction of a sulfur removal and recovery system pursuant to a schedule set forth therein; provided, however, that the sulfur removal and recovery system must be constructed by October 1, 1993, unless, in the judgment of the Air Pollution Control Officer, failure to complete construction by that date results from circumstances beyond the reasonable control of the refinery operator in which case the Air Pollution Control Officer may grant a reasonable extension of the October 1, 1993 deadline. The Air Pollution Control Officer may grant such extension, however, only if the refinery operator has made substantial progress in completing construction of its sulfur removal and recovery system by October 1, 1993.

(Adopted July 18, 1990; Amended March 15, 1995)

#### **9-1-400 ADMINISTRATIVE REQUIREMENTS**

- 9-1-401 Deleted May 20, 1992**
- 9-1-402 Deleted May 20, 1992**
- 9-1-403 Deleted May 20, 1992**
- 9-1-404 Deleted May 20, 1992**

#### **9-1-500 MONITORING AND RECORDS**

- 9-1-501 Area Monitoring Requirements:** Upon request of the APCO, a person subject to Section 9-1-301 shall comply with the monitoring, maintenance, records, and reporting requirements of Regulation 1, including Sections 1-510, 1-530, 1-540, 1-542, 1-543 and 1-544.
- 9-1-502 Emission Monitoring Requirements:** A person subject to Section 9-1-304, 307, 309 or 310 (with the exception of coke calcining kilns), shall comply with the monitoring requirements of 1-520 and 522. (Amended March 17, 1982; May 20, 1992)
- 9-1-503 Fresh Fruit Sulfuring Recordkeeping Requirements:** Any persons subject to Section 9-1-312 of this Rule shall record the daily weight of elemental sulfur burned or gaseous SO<sub>2</sub> used per unit weight of fresh fruit for each sulfuring operation. Records of the weights used shall be kept for the length of the specific fruit season and shall be made available to the APCO upon request. (Adopted February 16, 1983)

**9-1-600      MANUAL OF PROCEDURES**

- 9-1-601      Sampling and Analysis of Gas Streams:** The method of sampling and analysis of gas streams of sulfur dioxide concentrations is described in the Manual of Procedures, Volume IV, ST-19 A or B. (Amended March 17, 1982)
- 9-1-602      Sulfur Content of Fuels:** The sulfur content of solid and liquid fuels shall be determined as specified in the Manual of Procedures, Volume III, Method 10. (Amended March 17, 1982)
- 9-1-603      Averaging Times:** The averaging times for production determination and emission analysis are specified in the Manual of Procedures, Volume IV. (Amended March 17, 1982)
- 9-1-604      Ground Level Monitoring:** The monitoring requirements for ground level concentrations of sulfur dioxide, including siting procedures and instrument specifications, calibration and maintenance procedures, are described in the Manual of Procedures, Volume VI, Section 1. (Amended March 17, 1982)
- 9-1-605      Emission Monitoring:** The emission monitoring requirements, including instrument placement, specifications, calibration, and maintenance procedures are described in the Manual of Procedures, Volume V. (Amended March 17, 1982).
- 9-1-606      Analysis of Gas Streams for H<sub>2</sub>S:** The method for analyzing refinery fuel gas streams for H<sub>2</sub>S before and after control shall be as prescribed in the Manual of Procedures, Volume III, LAB 32 or equivalent method approved by the APCO. (Adopted July 18, 1990; Amended May 20, 1992)
- 9-1-607      Analysis of Water Streams for H<sub>2</sub>S:** The method for analyzing refinery process water streams for H<sub>2</sub>S before and after control shall be as prescribed in the Manual of Procedures, Volume III, LAB 32 or equivalent method approved by the APCO. (Adopted July 18, 1990; Amended May 20, 1992)
- 9-1-608      Analysis of Water Streams for NH<sub>3</sub>:** The method for analyzing refinery process water streams for NH<sub>3</sub> before and after control shall be as prescribed in the Manual of Procedures, Volume III, LAB 1 or equivalent method approved by the APCO. (Adopted July 18, 1990; Amended May 20, 1992)
- 9-1-609      Analysis of Sulfur Content of Crude Oil:** The method for analyzing the sulfur content of the crude oil shall be as prescribed in the Manual of Procedures, Volume III, Method LAB 10 or equivalent method approved by the APCO. (Adopted July 18, 1990; Amended May 20, 1992)