8/15/80

Adopted 10/7/77

8/15/80

RULE 1101
SECONDARY LEAD SMELTERS/SULFUR OXIDES

(a) A person shall not discharge into the atmosphere from any lead melting furnace such as described in Section (b) below, effluent process gas containing sulfur oxides in excess of the concentration and mass flow rate indicated by both subsections (a) (1) and (a) (2):

(1) 200 ppm of sulfur oxides expressed as sulfur dioxide, measured at the point of emission to the atmosphere, and calculated on a dry basis averaged over a minimum of 15 consecutive minutes, and

(2) 2.1 kilograms of sulfur oxides per metric ton of process weight (4.2 pounds of sulfur oxides per short ton of process weight) expressed as sulfur dioxide.

(b) This rule shall apply only to furnaces used to recover lead from the following:

(1) Automotive batteries, and/or

(2) Slag and dross resulting from the melting of automotive batteries.

ADOPTED
by the
South Coast Air Quality
Management District Board
Date: 10-7-77
Clerk of the Board

Resolution No. 77-44

(Adopted January 6, 1978)(Amended August 3, 1979)(Amended July 11, 1980)
(Amended August 3, 1990)(Amended December 7, 1990)
(Amended November 17, 2000)

RULE 1102. DRY CLEANERS USING SOLVENT OTHER THAN PERCHLOROETHYLENE

(a) Applicability

This rule applies to all persons owning or operating a dry cleaning facility using solvent other than perchloroethylene.

(b) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) CARTRIDGE FILTER means a replaceable perforated canister that contains paper, activated carbon, or a combination of paper and activated carbon and that is used in a pressurized system in conjunction with piping and ductwork, to trap and remove contaminants such as solid particles and fugitive dyes from soil-laden solvent. A cartridge filter contains no diatomaceous earth or activated clay. Cartridge filters include, but are not limited to: standard filters, split filters, "jumbo" filters, and all carbon polishing filters.

(2) CLOSED-LOOP MACHINE means dry cleaning equipment in which washing, extraction, and drying are performed in the same single unit and which re-circulates and recovers the solvent-laden vapor.

(3) CONDENSER means a closed-loop vapor recovery system into which solvent vapors are introduced and trapped by using a chilling system, with or without refrigeration, to cool the outlet temperature.

(4) COOL DOWN means the portion of the drying cycle that begins when the heating mechanism deactivates and a condenser, chilling coils or some other cooling device activates to reduce the temperature of the air re-circulating through the drum to reduce the concentration of solvent in the drum.

(5) DIP TANK means a vessel or container that is separate from dry cleaning equipment, in which materials are immersed in solution that contains solvent for purposes other than dry cleaning.

(6) DISTILLATION UNIT OR STILL means a device used to volatilize, separate and recover solvent from contaminated solvent.

(7) DISTRICT is as defined in Rule 102.

(8) DRUM means the rotating cylinder or wheel of the dry cleaning machine that holds the materials being cleaned, extracted or dried.

(9) DRYING CABINET means a separate housing unit from the washer or extractor, to which wet, solvent-laden materials, that would otherwise be damaged by the heat and tumbling action of the drying cycle are transferred for drying.

(10) DRYING CYCLE means the process used to actively remove the solvent remaining in the materials after washing and extraction. The drying cycle begins when heating coils are activated and ends when the machine ceases rotation of the drum. For closed-loop machines, the heated portion of the drying cycle is followed by cool down.

(11) EXEMPT COMPOUNDS are defined in Rule 102.

(12) GALLONS OF SOLVENT USED means the volume of solvent, in gallons, introduced into the dry cleaning equipment, and not recovered at the facility for re-use on-site in the dry cleaning equipment, over a specified time period.

(13) GROUP II EXEMPT COMPOUNDS are defined in Rule 102.

(14) LIQUID LEAK means an emission of solvent from openings in the dry cleaning equipment as a visible mist or at the rate of more than one (1) drop every three (3) minutes, as determined by visual inspection.

(15) MATERIALS mean wearing apparel, draperies, linens, fabrics, textiles, rugs, leather, and all other goods that are being dry cleaned.

(16) NON-HALOGENATED HYDROCARBON DETECTOR means a portable device capable of detecting vapor concentrations of solvent of 250 ppm by volume or less and indicating an increasing concentration by emitting an audible signal or visual indicator that varies as the concentration changes.

(17) PORTABLE HYDROCARBON ANALYZER means a portable device which uses the flame ionization detection or thermal conductivity methods and satisfies EPA Method 21, 40 CFR Part 60, to analyze hydrocarbon vapor concentrations. The instrument shall be equated to calibrating on methane and sampling at one liter per minute.

(18) PRE-WASH WEIGHT OF MATERIALS CLEANED PER LOAD means the total dry weight, in pounds, of the materials in each load dry cleaned at the facility, as determined by weighing each load on a scale prior to dry cleaning.

(19) SETTLING TANK means a container which gravimetrically separates oils, grease, dirt and any other contaminants from solvent.

(20) SOLVENT, for the purpose of this rule only, means a substance, including any detergents and additives, containing volatile organic compounds (VOC) or Group II exempt compound other than perchloroethylene that is used to dry clean materials and that exists as a liquid under standard conditions.

(21) SOLVENT DRY CLEANING EQUIPMENT OR DRY CLEANING EQUIPMENT means any machine, device, or apparatus used to dry clean materials with solvent or to remove residual solvents from previously cleaned materials. Dry cleaning equipment may include, but is not limited to, a transfer machine, a closed-loop machine, a solvent recovery dryer, washer tumblers, extractors, dryers, reclaimers, condensers, chillers, heating coils, chilling coils, filters, purification systems, settling tanks, separators, stills, waste disposal systems, holding tanks, pumps, flanges, valves and associated piping.

(22) SOLVENT DRY CLEANING FACILITY OR DRY CLEANING FACILITY is any facility engaged in the dry cleaning of materials using solvent.

(23) SOLVENT DRY CLEANING OR DRY CLEANING, for the purpose of this rule only, means the process used to remove soil, greases, paints, odors, and other unwanted substances from materials with a solvent.

(24) SOLVENT DRY CLEANING SYSTEM OR DRY CLEANING SYSTEM includes, but is not limited to, all of the following equipment, devices, or apparatus associated with the solvent dry cleaning process: dry cleaning equipment; filter or purification systems; waste holding, treatment, or disposal systems; solvent supply systems and storage tanks; pumps; gaskets; piping, ducting, fittings, valves, or flanges that convey solvent-contaminated air; and pollution control systems.

(25) SOLVENT RECOVERY DRYER, DRYER, RECLAIMER, OR RECLAIMER DRYER is a class of dry cleaning dryers that employs a condenser or other cooling device to liquefy and recover solvent vapors evaporated in a closed-loop, re-circulating stream of air.

(26) SPIN-DISC FILTER means a filter that traps and removes contaminants such as solid particles and fugitive dyes from soil-laden solvent and that can be cleaned, regenerated, and reused in closed-loop machines.

(27) TRANSFER CART is a cart or container used for the transfer of wet solvent-laden materials from the washer to the dryer or to the drying cabinet that has a lid and walls which are impervious to the solvent.

(28) TRANSFER MACHINE means a combination of solvent dry cleaning equipment in which washing and extraction are performed in one unit and drying is performed in a separate unit.

(29) VAPOR LEAK means an emission of solvent vapor from openings in the dry cleaning equipment which causes bubbling from the application of a soap solution, causes a portable analyzer to exceed 250 ppm as methane, as determined by EPA Method 21, or causes a non-halogenated hydrocarbon detector to emit an audible signal or visual signal.

(30) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(31) WASTE WATER EVAPORATOR means a device that vaporizes solvent contaminated waste water through the addition of thermal or chemical energy, or through physical action.

(32) WATER-REPELLING OPERATIONS means the treatment of materials with a solution that contain solvent to create a coating that repels water.

(c) Compliance Schedule

The owner or operator shall comply with the following:

(1) Effective January 1, 2001, a person shall not operate a dip tank.

(2) Effective January 1, 2001, a person shall not operate a drying cabinet.

(3) Effective July 1, 2001, a person shall not open a closed-loop machine prior to completion of the drying cycle.

(4) Effective January 1, 2003, a person shall not operate a transfer machine unless the requirements in either subparagraph (c)(4)(A) or subparagraph (c)(4)(B) are met:

(A) The owner or operator:

(i) submits to the Executive Officer a complete application by January 1, 2001 to obtain a permit condition that limits the quantity of solvent used to no more than 15 gallons per month;

(ii) demonstrates that the transfer machine has been operating in compliance for at least two years prior to November 17, 2000; and,

(iii) actually operates the transfer machine such that the solvent usage is no more than fifteen (15) gallons per month on and after January 1, 2001.

(B) The transfer machine is cleaning reusable soiled textile materials meeting the requirements of Health and Safety Code §25144.6(b) and the facility meets the requirements of Health and Safety Code §25144.6 (c).

(5) Effective January 1, 2005, a person shall not operate any transfer machine.

(d) Equipment Specifications and Operating Requirements

The owner or operator shall operate and maintain the solvent dry cleaning system in accordance with the requirements of this subdivision, the conditions specified in the facility's permit, and in accordance with the manufacturer's recommendations. A person shall not operate a solvent dry cleaning facility except in accordance with the compliance dates established in subdivision (c) of this rule and in accordance with the following:

(1) General Specifications

(A) All washer lint traps, button traps, access doors, and other parts of the equipment where solvent may be exposed to the atmosphere shall be kept closed at all times except when required for proper operation or maintenance.

(B) Button and lint traps shall be cleaned each working day.

(C) The still residue, used filtering material, lint, used solvent and all other wastes containing solvent shall be stored in sealed containers until properly transported for disposal.

(D) For any dry cleaning system that is equipped with cartridge filters containing paper or carbon or a combination thereof, the cartridge filters shall be fully drained in a sealed filter housing for at least 24 hours before removal.

(E) All solvents shall be stored in closed containers.

(F) All parts of the dry cleaning system where solvent may be exposed to the atmosphere or workroom shall be kept closed at all times except when access is required for proper operation and maintenance.

(G) Waste water evaporators shall be operated to ensure that no liquid solvent or visible emulsion is allowed to vaporize to the atmosphere.

(2) Additional Specifications for Closed-Loop Machines

(A) A closed-loop machine shall not exhaust to the atmosphere or workroom during operation except when the vacuum pump exhausts to maintain a continuous vacuum.

(B) For any closed-loop machine that is not equipped with a locking mechanism, the operator shall not open the door of a closed-loop machine prior to completion of the drying cycle.

(C) For any closed-loop machine that is equipped with a locking mechanism, the operator shall not inactivate the locking mechanism and open the door of a closed-loop machine prior to completion of the drying cycle.

(3) Additional Specifications for Transfer Machines

(A) Materials which have been dry cleaned shall be transferred to the dryer by hand or in an enclosed transfer cart within five minutes after they are removed from the washer.

(B) The washer doors shall not be opened to transfer materials which have been dry cleaned unless there are an adequate number of dryers ready to take up the washed load.

(C) The solvent recovery dryer shall remain closed until there is no visible flow in the sight glass of the condenser for at least one minute.

(D) A solvent recovery dryer or an equivalent control device that reduces VOC emissions from drying tumblers by at least 90 percent by weight shall be installed and operated.

(E) The overall gallons of solvent used shall be less than 4.5 pounds per 100 pounds of materials dry cleaned.

(e) Leak Check and Repair Requirements

(1) No less frequently than monthly, the owner or operator shall inspect the dry cleaning system for liquid and vapor leaks, including, but not limited to, the following:

(A) hose connections, unions, couplings, valves, and flanges;

(B) machine door gasket and seating of the machine cylinder;

(C) filter head gasket and seating;

(D) pumps;

(E) base tanks and storage containers;

(F) water separators;

(G) filter sludge recovery;
(H) seals and gaskets of distillation unit(s);
(I) diverter valves;
(J) saturated lint from lint trap basket;
(K) button trap lid;
(L) cartridge or other types of filters;
(M) seals, gaskets and the diverter valve of the refrigerated condenser;
(N) exhaust stream ducts;
(O) lint trap ducts; and,
(P) gaskets and ducts of the carbon adsorber.

(2) To inspect for a vapor leak, the operator shall use at least one of the following techniques:
(A) soap bubble technique in accordance with the procedures in EPA Method 21, Section 4.3.3 – Alternative Screening Procedure; or
(B) a non-halogenated hydrocarbon detector; or
(C) a portable hydrocarbon analyzer or an alternative method approved by the District.

(3) To inspect for a liquid leak, the operator shall visually inspect the equipment for liquid leaking in a visible mist or at the rate of more than one drop every three minutes.

(4) Any liquid leak or vapor leak that has been detected by the operator shall be repaired within three (3) working days of detection. If repair parts are not available at the facility, the parts shall be ordered within two working days of detecting such a leak and the operator shall provide written notification to the Executive Officer that explains the reason(s) for delaying the leak repair. Such repair parts shall be installed within five working days after receipt. A facility with a leak that has not been repaired by the end of the seventh (7^{th}) working day after detection shall not operate the dry cleaning equipment, until the leak is repaired.

(f) Recordkeeping and Reporting Requirements

(1) For each dry cleaning machine operated during a specified reporting period, the owner or operator shall maintain records containing:
(A) a log showing the date and the pre-wash weight, in pounds, of materials cleaned per load;
(B) purchase and delivery receipts for the solvent;

(C) for those facilities with solvent tanks that are not directly filled by the supplier upon delivery, a log showing the date(s) and amount, in gallons, of solvent added to the solvent tank of each dry cleaning machine;

(D) the inventory of solvent, in gallons, at the start and end of the reporting period;

(E) the amount, in gallons, of solvent used;

(F) a log showing the dates of leak inspections;

(G) for any liquid leak or vapor leak that is detected, a log showing the dates of detection and repair, the location of the leak, and the action taken to repair the leak; and,

(H) the calculated facility mileage, determined from all solvent additions in the reporting period, as follows:

$$\frac{\text{Total Weight, in pounds, of Materials Cleaned Per Load}}{\text{Total Quantity, in gallons, of Solvent Used}}$$

(2) All records shall be maintained pursuant to Rule 109.

(g) Test Methods

EPA Test Method 25 or SCAQMD Test Method 25.1 (March 1989), shall be used to determine compliance with this rule. Emissions determined to exceed limits established by this rule through the use of either of the above referenced test methods shall constitute a violation of this rule.

(h) Exemptions

(1) Dry cleaning equipment which exclusively uses perchloroethylene as the cleaning solvent is exempt from this rule.

(2) Dry cleaning equipment which exclusively uses a Group II exempt compound other than perchloroethylene as the cleaning solvent is exempt from subdivisions (c), (d), (e), and (g) and subparagraphs (f)(1)(F) and (f)(1)(G) of this rule provided that the detergents and additives used with these substances contain less than 50 grams per liter VOC.

(3) Professional laundering equipment that uses liquid carbon dioxide as the cleaning solvent, provided that the detergents and additives used with these

substances contain less than 50 grams per liter VOC, is exempt from this rule.

(4) Professional wet cleaning equipment that uses water as the cleaning solvent, provided that the detergents and additives used with these substances contain less than 50 grams per liter VOC, is exempt from this rule.

5/13/91

(Adopted June 6, 1980)(Amended February 13, 1981)(Amended April 2, 1982)
(Amended April 3, 1987)(Amended December 7, 1990)

RULE 1102.1. PERCHLOROETHYLENE DRY CLEANING SYSTEMS

(a) Definitions

For the purpose of this rule, the following definition shall apply:

DRY CLEANING FACILITY is any facility engaged in the cleaning of fabrics or leather using one or more washes in perchloroethylene solvent, extracting excess solvent by spinning, and drying by tumbling in an airstream. The facility includes, but is not limited to, washers, dryers, filter and purification systems, waste disposal systems, holding tanks, pumps and attendant piping and valves.

(b) Operating Requirements

A person shall not operate any perchloroethylene dry cleaning facility unless:

(1) there is no liquid leaking in a continuous flow, or in a visible mist, or at the rate of three drops per minute or more from any portion of the equipment.

(2) all washer lint traps, access doors, and other parts of this equipment where perchloroethylene may be exposed to the atmosphere are kept closed at all times, except when required to be open for proper operation or maintenance.

(3) backwash from all filters, other than diatomaceous earth types, is treated in a still or muck cooker so that the perchloroethylene content of the residue does not exceed 60 percent, by weight.

(4) backwash from all diatomaceous earth type filters is treated in a still or muck cooker so that the residue contains no more than 25 percent perchloroethylene, by weight.

(5) cartridge-type filters are drained in the filter housing for at least 24 hours before discarding the cartridges or for at least 12 hours, provided that drained cartridges are dried in a dryer which is equipped with perchloroethylene control equipment approved by the Executive Officer.

(6) all waste containing perchloroethylene is stored in sealed containers and disposed in accordance with local, state, and federal regulations.

(c) Control Equipment Requirements

A person shall not operate any perchloroethylene dry cleaning facility unless all vents from dry cleaning equipment and floor pickups are vented through a control device approved in writing by the Executive Officer. The control equipment shall meet one of the following conditions.

(1) The concentration of perchloroethylene at the outlet of a carbon adsorber shall not exceed 100 ppm as measured over a period of one minute before dilution; or

(2) The air temperature at the outlet of a refrigerated condenser must reach 45°F or less during the cool-down period. A temperature gauge with a minimum range from 0°F to 150°F must be installed on the condenser outlet duct; or

(3) The demonstrated control efficiency for any other control device must be 90 percent or greater, by weight, prior to the discharge to the atmosphere measured over a complete control cycle, based upon the amount of perchloroethylene entering the control device.

(d) Recordkeeping Requirements

A person operating a perchloroethylene daily cleaning facility shall maintain daily records of perchloroethylene purchase and use, and equipment maintenance and repair information. Records shall be maintained at the facility for at least two years and be made available to the District upon request.

(e) Test Methods

Efficiency of the control device shall be determined according to EPA Method 18.

(f) Compliance Determination

Compliance with liquid leak requirements in subparagraph (b)(1) of this rule shall be determined by means of visual inspection of the following components:

(1) hose connection, union, coupling and valves;

(2) machine door gaskets and seatings;

(3) filter head gasket and seating;

(4) pumps;

(5) base tanks and storage container;
(6) water separators;
(7) filter sludge recovery;
(8) distillation unit;
(9) diverter valves;
(10) saturated lint from lint basket; and
(11) cartridge filters.

(g) Exemptions

The provisions of paragraph (c) shall not apply to facilities using less than 1,210 liters (320 gallons) per year of perchloroethylene.

5/13/99

(Adopted April 6, 1980) (Amended December 7, 1990)
(Amended March 12, 1999)

RULE 1103. PHARMACEUTICALS AND COSMETICS MANUFACTURING OPERATIONS

(a) Applicability

The purpose of this rule is to reduce VOC emissions from; and the provisions of this rule shall apply to:

(1) The manufacture of pharmaceutical and cosmetic products by chemical processes.

(2) The production and separation of medicinal chemicals such as antibiotics and vitamins from microorganisms.

(3) The manufacture of botanical and biological products by the extraction of organic chemicals from vegetable materials or animal tissues.

(4) The formulation of pharmaceuticals into various dosage forms such as tablets, capsules, injectable solutions or ointments, that can be taken by the patient immediately and in an accurate amount; and the formulation of cosmetics into configurations intended for consumer use.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) CAPTURE EFFICIENCY, in percent, is the ratio of the weight of the VOC in the effluent stream entering the control device to the weight of VOC emitted from pharmaceutical or cosmetic manufacturing operations, both measured simultaneously, and shall be calculated by the following equation:

Capture Efficiency = [Wc/We] x 100

Where: Wc = weight of VOC entering control device

We = weight of VOC emitted from the process

(2) CONTROL DEVICE EFFICIENCY, in percent, is the ratio of the weight of the VOC removed by the control device from the effluent stream entering the control device to the weight of VOC in the effluent stream entering the control device, both measured simultaneously, and shall be calculated by the following equation:

Control Device Efficiency = [(Wc-Wa)/Wc] x 100

Where: Wc = Weight of VOC entering control device
Wa = Weight of VOC discharged from the control device

(3) COSMETICS MANUFACTURING PLANT is any plant producing or blending chemicals for use in cosmetic products and/or manufacturing cosmetic products by chemical processes.

(4) EXEMPT COMPOUNDS See Rule 102 - Definition of Terms

(5) IN-PROCESS TANKS are containers used for mixing, blending, heating, reacting, holding, crystallizing, evaporating, or cleaning operations in the manufacture of pharmaceuticals or cosmetics.

(6) KEY SYSTEM OPERATING PARAMETER is an emission control system operating parameter, such as temperature, flow rate or pressure, that ensures operation of the abatement equipment within manufacturer specifications and compliance with the standards in Paragraphs (d)(1), (d)(2), and (d)(3).

(7) LIQUID LEAK is the dripping of liquid volatile organic compounds at the rate of more than three drops per minute.

(8) PHARMACEUTICAL MANUFACTURING PLANT is any plant producing or blending chemicals for use in pharmaceutical products and/or manufacturing pharmaceutical products by chemical processes with the Standard Industrial Classification of 2833, 2834, 2835, and 2836.

(9) PRODUCTION EQUIPMENT is any equipment using or emitting VOC that is used in the manufacture of cosmetics or pharmaceuticals and is not exempt from permits pursuant to Rule 219 and does not include reactors, distillation columns, crystallizers and centrifuges which are subject to Subdivision (c) of this rule.

(10) TOTAL VOC VAPOR PRESSURE is the sum of the vapor pressures of each of the compounds defined as VOCs.

VOC Composite Total Pressure is calculated as follows:

$$TP_c = \sum_{i=1}^{n} \frac{(W_i)(VP_i)/MW_i}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

Where:

W_c = Weight of VOC entering control device

W_i = Weight of the "i"th VOC compound, in grams (g)

W_w = Weight of water, in grams (g)

W_e = Weight of exempt compound, in grams (g)

MW_i = Molecular weight of the "i"th VOC compound, in $\frac{G}{g\text{-mole}}$

MW_w = Molecular weight of water, in $\frac{G}{g\text{-mole}}$

MW_e = Molecular weight of exempt compound, in $\frac{g}{g\text{-mole}}$

TP_c = VOC composite partial pressure at 20°C, in mm Hg

VP_i = Vapor pressure of the "i"th VOC compound at 20°C, in mm Hg

(11) VOLATILE ORGANIC COMPOUND (VOC) is any chemical compound containing the element carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonates, ammonium carbonate, and exempt compounds.

(c) Equipment Requirements

(1) An owner/operator shall not use reactors, distillation columns, crystallizers, or centrifuges emitting more than 15 pounds per day of VOC for each permit unit unless the vents are equipped with surface condensers or equivalent control devices as specified under Subparagraph (c)(1)(B).

(A) An operator shall not use surface condensers for the control of organic gases unless the condenser outlet gas temperature is controlled as shown in the following table:

	Total Vapor Pressure of VOC at 20°C	Maximum Condenser Outlet Gas Temperature
	0.5 psi to 1.0 psi	25°C
>	1.0 psi to 1.5 psi	10
>	1.5 psi to 2.9 psi	0
>	2.9 psi to 5.8 psi	- 15
	over 5.8 psi	- 25

(B) An equivalent control devices may be used if it can achieve the equivalent percent of VOC condensed as determined by the method outlined in Subsection 4.1.1 (Condenser Performance) of Section 4.0 "Performance of Control Systems" in the EPA Document No. EPA-450/2-78-029 "Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products" December 1978. A condensed version of this method is shown below.

The percent of VOC condensed shall be calculated with the following equation:

$$PC = \frac{MFS_1 - \left(\frac{1 - MFS_1 \times MFS_2}{1 - MFS_2}\right)}{MFS_1} \times 100$$

Where PC = percent of VOC condensed

MFS_1 = mole fraction VOC into condenser

MFS_2 = mole fraction VOC out of condenser

Mole fraction of VOC in the condenser inlet and outlet shall be determined by chemical analysis or by dew point method as described in EPA document "Control of Volatile Organic Emissions from Manufacture of Synthesized

Pharmaceutical Products," Report No. EPA-450/2-78-029, Section 4.0 "Performance of Control Systems," pages 4-2 through 4-6.

(2) An operator shall not use centrifuges, rotary vacuum filters, or any other filters, or devices having an exposed liquid surface where the liquid contains VOC having a total VOC vapor pressure of 0.5 psi or more at 20°C, unless such devices incorporate a hood or enclosure with a delivery system or ductwork to collect VOC emissions, exhausting to a control device which meets the applicable requirements in either Paragraphs (d)(1) or (d)(2) of this rule.

(3) An operator shall not use in-process tanks for material containing VOC unless an apparatus or cover which prevents VOC evaporation is provided for the tank. The cover shall be closed or in place on the tank at all times except while loading or unloading the tank.

(d) Operating Requirements

An operator shall conform to the following operational requirements:

(1) If the basic permit unit for production equipment including air dryers emits 330 pounds per day or more of volatile organic compounds, the emissions of such organic materials into the atmosphere shall be reduced by at least 90 percent by weight.

(2) If the basic permit unit for production equipment including air dryers emits less than 330 pounds per day of volatile organic compounds, the emissions of such organic materials into the atmosphere shall be reduced to less than 33 pounds per day.

(3) An operator shall not transfer VOC having a total VOC vapor pressure greater than 4.1 psi at 20°C, from any truck or rail car into any storage tank of a 2,000 gallon capacity or greater, unless VOC emissions during transfer are reduced by 90 percent by weight.

(4) An operator shall install pressure/vacuum vents set at +0.03 psig on all storage tanks that store VOC with a total VOC vapor pressure greater than 1.5 psia at 20°C.

(5) An operator shall repair all liquid leaks within 24 hours after the detection of the leak.

(e) Recordkeeping Requirements

Any person subject to Subdivisions (c) and (d) of this rule shall:

(1) Maintain a current list of organic compounds in use including the vapor pressure of each compound at 20°C.

(2) Record on a daily basis the types and amounts of organic compounds in use.

(3) Record on a daily basis approved emission control system key system operating parameters as defined in Paragraph (b)(6).

(4) Records shall be retained at the facility for at least two years and be made available to the AQMD upon request.

(5) Facilities subject to Title V shall retain records at the facility for at least five years and make those records available to the AQMD upon request.

(f) Test Methods

(1) The calculation of emission reduction required in Paragraphs (d)(1) and (d)(2) shall be determined based on both the capture efficiency and control device efficiency as specified by the following:

(A) Capture efficiency shall be determined by the procedures presented in the USEPA technical guidance document, "Guidelines for Determining Capture Efficiency, January 9, 1995." Notwithstanding the test methods specified by the Guidelines any other method approved by the EPA, CARB, and AQMD Executive Officer may be substituted.

(B) Control device efficiency is based on the weight of VOC removed compared to the weight of VOC entering the device. The weight of VOC, measured and calculated as carbon, shall be determined by the USEPA Test Methods 25, 25A, or AQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. EPA Test Method 18, or CARB Method 422 shall be used to determine emissions of exempt compounds.

(2) The determination of the vapor pressure of a VOC compound shall be determined by using values in scientifically recognized published reference works or by testing using method ASTM Method D2879 when such reference works are not available.

(g) Exemptions

The provisions of this rule shall not apply to the following:

(1) Facilities that emit, at the design production rating, 15 pounds per day or less of volatile organic compounds; and,

(2) Sterilizers regulated by Rule 1405 - Control of Ethylene and Chlorofluorocarbon Emissions from Sterilizers or Fumigation Processes.

10/29/99

(Adopted April 7, 1978)(Amended December 7, 1984)(Amended May 5, 1989)
(Amended March 2, 1990)(Amended December 7, 1990)(Amended March 1, 1991)
(Amended August 2, 1991)(Amended August 13, 1999)

RULE 1104. WOOD FLAT STOCK COATING OPERATIONS

(a) Applicability

This rule applies to all persons applying coatings, inks, and adhesives to wood flat stock for the purpose of manufacturing a finished wood panel intended for attachment to the inside walls of buildings, including, but not limited to, homes and office buildings, mobile homes, trailers, prefabricated buildings and similar structures, boats, and ships; or a finished exterior wood siding intended for use in construction.

(b) Definitions

For the purpose of this rule the following definitions shall apply:

(1) ADHESIVE is any substance that is capable of bonding surfaces together by attachment.

(2) CLEAR TOPCOAT means a coating which contains resins and binders but not opaque pigments, and which is specifically formulated to form a transparent or translucent solid protective film.

(3) COATING is a material which is applied to a surface and which forms a film in order to beautify and/or protect such surface, which includes, but is not limited to, water repellent preservatives, semitransparent stains, opaques stains, filler, and clear top coat.

(4) DIP COATER is to dip an object into a vat of coating material and drain off any excess coating.

(5) ELECTROSTATIC APPLICATION is charging of atomized paint droplets for deposition by electrostatic attraction.

(6) EXEMPT COMPOUNDS (See Rule 102 - Definition of Terms)

(7) EXTERIOR WOOD SIDING is a wood or wood-containing board having a flat surface for use in commercial or residential construction, generally as a covering for an outside wall.

(8) FILLER is a semisolid viscous material used to fill voids.

(9) FLOW COATER is to coat an object by flowing a stream of coating over an object and draining off any excess coating.

(10) GRAMS OF VOC PER LITER OF COATING, ADHESIVES, OR INKS, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and coating solids, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Adhesives, or Inks, Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:
- W_s = weight of volatile compounds in grams
- W_w = weight of water in grams
- W_{es} = weight of exempt compounds in grams
- V_m = volume of material in liters
- V_w = volume of water in liters
- V_{es} = volume of exempt compounds in liters

(11) HAND APPLICATION METHODS is the application of coatings, sealants, or adhesives by manually held, non-mechanically-operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

(12) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY EQUIPMENT is used to spray a coating by means of a gun that operates between 0.1 and 10 pounds per square inch gauge (psig) air pressure.

(13) INK is any fluid or viscous composition used in printing, impressing, or transferring an image onto a panel.

(14) OPAQUE STAINS are all stains not classified as semitransparent stains.

(15) PANEL is a flat piece of wood or wood-containing products, usually rectangular, and is attached to the inside walls of homes, office buildings, mobile homes, trailers, prefabricated buildings and similar structures, boats, and ships.

(16) PERSON is any firm, business establishment, association, partnership, corporation, or individual, whether acting as principal, agent, employee, or other capacity, including any governmental entity or charitable organization.

(17) ROLL COATER is a series of mechanical rollers that forms a thin coating film on the surface of roller, which is applied to a substrate by moving the substrate underneath the roller.

(18) SEMITRANSPARENT STAINS are coatings which are formulated to change the color of a surface but not conceal the surface.

(19) SOLVENT CLEANING OPERATION is the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants which include, but are not limited to, dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas. Each distinct method of cleaning in a cleaning process which consists of a series of cleaning methods shall constitute a separate solvent cleaning operation.

(20) VOLATILE ORGANIC COMPOUND (VOC) (See Rule 102 - Definition of Terms)

(21) WATER-REPELLENT PRESERVATIVE is a penetrating coating designed to protect bare wood from mildew, decay, insect attack, and water staining.

(22) WOOD FLAT STOCK is defined as interior wood panels and exterior wood siding, which include, by way of illustration and not limitation, redwood, cedar or plywood stocks, plywood panels, particle boards, composition hard boards, and any other panels or siding constructed of solid wood or a wood-containing product.

(c) Requirements

Any person applying a coating, ink, or adhesive to wood flat stock shall comply with all of the following requirements:

(1) VOC Requirements

Wood flat stock coatings, inks, and adhesives for interior wood panels and exterior wood siding, shall contain no more than 250 grams of VOCs per liter of coating, ink, or adhesive (2.1 pounds per gallon), less water and exempt compounds. Notwithstanding the above, up until January 1, 2000, wood flat stock inks and exterior wood siding coatings may contain up to 300 grams of VOCs per liter of ink (2.5 pounds per gallon) and up to 350 grams of VOCs per liter of coating (2.9 pounds per gallon), respectively, less water and less exempt compounds.

(2) Application Methods

No owner or operator shall apply coatings, adhesives, or inks unless these materials are applied with properly operating equipment, according to operating procedures specified by the equipment manufacturer or the Executive Officer or his designee, and by the use of one of the following methods:

(A) Flow Coater, Roll Coater, or Dip Coater; or

(B) Hand Application Methods; or

(C) High-Volume, Low-Pressure (HVLP) or Electrostatic Application

(3) Solvent Cleaning Operations; Storage and Disposal of VOC-containing Materials

Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in solvent cleaning operations shall be carried out pursuant to Rule 1171 - Solvent Cleaning Operations.

(4) Control Equipment Requirements

Any person owning or operating a control equipment system, in association with a wood flat stock coating operation, may comply with provisions of subparagraph (c)(1) by using approved control equipment system provided that the VOC emissions from such operations or materials, or both, are reduced in accordance with the following provisions:

(A) The control device shall reduce emissions from an emission collection system by at least 95 percent, by weight, or the output of the air pollution control device is less than 50 ppm calculated as carbon.

(B) The emission collection system shall collect at least 90 percent, by weight, of the emissions generated by the sources of emissions.

(d) Recordkeeping Requirements

Notwithstanding provisions of paragraph (g), records shall be maintained pursuant to Rule 109 - Recordkeeping for Volatile Organic Compound Emissions.

(e) Compliance Test Methods

(1) The VOC content of materials subject to the provisions of this rule shall be determined by EPA Reference Method 24 (Determination of Volatile

Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A). The exempt compounds' content shall be determined by SCAQMD Laboratory Methods of Analysis for Enforcement Samples - Section III, Method 22.

(2) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by EPA Test Methods 25 and 25A, or SCAQMD Method 25.1 (March 1989) (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon).

(3) The collection efficiency of the fugitive emissions will be determined pursuant to EPA's "Guidelines For Developing Capture Efficiency Protocols."

(f) Alternative Emission Control Plan

Any person may achieve compliance with requirements of paragraph (c) by means of an Alternative Emission Control Plan pursuant to Rule 108 - Alternative Emission Control Plans.

(g) Exemptions

(1) Laminating of fiberglass, metal, or plastic sheets to wood panels that is subject to the provisions of Rule 1168 - Control of Volatile Organic Compound Emissions from Adhesive Application.

(2) Coating of wood panels for furniture end use that is subject to the provisions of Rule 1136 - Wood Products Coatings.

(3) Coating of wood panels for aircraft that is subject to the provisions of Rule 1124 - Aerospace Assembly and Component Manufacturing Operations.

2/6/85

Adopted April 7, 1978
Amended August 6, 1982
Amended September 16, 1983
Amended September 21, 1984

Rule 1105 - Fluid Catalytic Cracking Units - Oxides of Sulfur

(a) Requirements

A person shall not discharge into the atmosphere from any fluid catalytic cracking unit oxides of sulfur in excess of the following limits:

(1) Until January 1, 1987, 130 kilograms (286 pounds) per thousand barrels of feed charged to the fluid catalytic cracking unit, as measured in the exhaust to the atmosphere and calculated as a mass emission rate of sulfur dioxide (SO_2) from the regenerator.

(2) On and after January 1, 1987, 60 kilograms (132 pounds) per thousand barrels of feed charged to the fluid catalytic cracking unit, as measured in the exhaust to the atmosphere and calculated as a mass emission rate of sulfur dioxide (SO_2) from the regenerator.

(b) Compliance Schedule

The owner or operator of any existing fluid catalytic cracking unit which requires modifications to comply with paragraph (a)(2) shall be in compliance by January 1, 1987, and shall comply with the following increments of progress:

(1) January 1, 1985.

Submit to the Executive Officer for approval an application for permit to construct or a control plan which describes, at a minimum, the steps that will be taken to achieve compliance with the provisions of this rule.

(2) March 1, 1985.

Award the contract for an emission control system or issue orders for the purchase of component parts to accomplish emission control.

(3) May 1, 1985.

Initiate on-site construction or installation of emission control equipment.

(4) November 1, 1986.

Complete on-site construction or installation of emission control equipment.

(c) Compliance Determination

(1) For determination of compliance with the emission limits of section (a): oxides of sulfur shall be expressed as sulfur dioxide (SO_2), and averaged over 60 consecutive minutes, or other longer averaging time specified by the Executive Officer.

(2) Calculations of mass emission rate of sulfur oxides from the regenerator.

Within thirty days after September 16, 1983, the owner or operator of a fluid catalytic cracking unit shall submit to the Executive Officer for approval all formulas necessary to calculate the mass emission rates of sulfur oxides from the regenerator per thousand barrels of feed. All variable parameters included in the formulas and necessary to calculate mass emissions of sulfur oxides from regenerators shall be measured and recorded at least once per shift and maintained in a manner specified by the Executive Officer. Daily records of sulfur oxides emission rates per thousand barrels of feed shall be submitted monthly to the Executive Officer, within 30 days of the end of the month being reported.

(Adopted November 7, 2003)

RULE 1105.1 REDUCTION OF PM_{10} AND AMMONIA EMISSIONS FROM FLUID CATALYTIC CRACKING UNITS

(a) Purpose

The purpose of this rule is to reduce emissions of PM_{10} and ammonia from fluid catalytic cracking units.

(b) Applicability

This rule applies to all existing, new or modified fluid catalytic cracking units at petroleum refineries.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AMMONIA SLIP is the amount of unreacted ammonia emitted from a control equipment such as electrostatic precipitator, selective catalytic reduction, or selective non-catalytic reduction process, as collected and measured pursuant to the applicable reference test method listed in subdivision (f).

(2) CONDENSABLE PM_{10} is the PM_{10} collected in the impingers of the applicable reference test method listed in subdivision (f).

(3) CONTACT MATERIAL is any substance formulated to remove metals, sulfur, nitrogen, or any other contaminants from petroleum derivatives.

(4) FILTERABLE PM_{10} is the PM_{10} collected on the cyclone exit, probe, and filter(s) of the applicable reference test method(s) listed in subdivision (f).

(5) FLUID CATALYTIC CRACKING UNIT (FCCU) is a process unit in which petroleum derivative feedstock is charged and fractured into smaller molecules in the presence of a catalyst; or reacts with a contact material to improve feedstock quality for additional processing; and the catalyst or contact material is regenerated by burning off coke and other deposits. The unit includes, but is not limited to, the riser, reactor, regenerator, air blowers, spent catalyst, and all equipment for controlling air pollutant emissions and recovering heat.

(6) FLUID CATALYTIC CRACKING UNIT REGENERATOR is the portion of the fluid catalytic cracking unit in which coke burn-off and

catalyst regeneration occurs, and includes the regenerator combustion air blower(s).

(7) FRESH FEED is any petroleum derivative feedstock stream charged directly into the riser or reactor of a FCCU except for petroleum derivatives recycled within the FCCU.

(8) PETROLEUM REFINERY is any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking or other processes, as defined in the Standard Industrial Classification Manual as Industry No. 2911, Petroleum Refining.

(9) SHUT-DOWN is a period which begins when fresh feed is pulled from the FCCU reactor and ends when the main blower for catalyst recirculation is shutdown.

(10) START-UP is a period not to exceed one hundred twenty (120) hours which begins with the startup of the main blower for introduction of catalyst and ends when fresh feed is introduced to the FCCU reactor and the process reaches steady state

(d) Emission Limits

(1) The operator shall not operate the FCCU unless, by December 31, 2006, the operator complies with one of the PM_{10} emission limits that the operator has elected, and the ammonia slip limit shown below; and has demonstrated to the Executive Officer that the PM_{10} and ammonia emissions from the FCCU to the atmosphere, determined by the test methods listed in subdivision (f), are equal to or less than one of the following elected PM_{10} emission limits and ammonia limit:

(A) Filterable PM_{10}

(i) 3.6 pounds per hour, or

(ii) 0.005 grain per dry standard cubic foot of flue gas corrected to 3% O_2 dry, or

(iii) 2.8 pounds per thousand barrels of fresh feed.

(B) Ammonia slip - 10 ppmv corrected to 3% O_2 dry, averaged over 60 consecutive minutes.

(2) The operator may request an extension of the compliance date specified in paragraph (d)(1) up to December 31, 2008 for the purpose of

synchronizing the installation of the PM_{10} control equipment with the FCCU turnaround provided that the operator submits a request in writing to the Executive Officer no later than July 1, 2006 and receives a written approval from the Executive Officer by December 31, 2006. For an FCCU turnaround starting before December 31, 2008 that cannot be completed by that date, the Executive Officer may approve an additional extension of the compliance date up to ninety (90) days after start-up of the FCCU for the operator to conduct performance testing for the required demonstration, so long as the FCCU operates with all necessary control equipment to meet the emission limits in paragraph (d)(1).

(3) The operator shall submit a permit application to include one or more selected emission limit(s) to comply with subparagraph (d)(1)(A) at least thirty (30) calendar days prior to the compliance date. The operator shall also conduct a performance test pursuant to paragraph (e)(1) to demonstrate compliance with the selected emission limit(s). The emission limit(s) selected shall be specified in the permit. The operator may change the selected emission limit(s) at any time provided that the operator has submitted an application for permit revision, conducted a performance test to demonstrate compliance, and received a revised Permit to Operate from the Executive Officer.

(4) If the operator does not make a selection pursuant to paragraph (d)(3), the operator shall be deemed to have selected the emission limit of 3.6 pounds per hour.

(e) Monitoring, Reporting and Recordkeeping Requirements

(1) Performance Testing

(A) If the operator constructs a new FCCU or modifies the FCCU to meet the emission limit(s) specified in paragraph (d)(1), the operator shall conduct a performance source test for PM_{10} and ammonia in accordance with the applicable source test methods listed in subdivision (f) and subparagraph (e)(1)(D) no later than 180 calendar days after initial start-up of the equipment not to exceed the applicable time limits specified in paragraph (d)(1) or paragraph (d)(2).

(B) The operator with an existing FCCU that already meets the emission limit(s) specified in paragraph (d)(1) shall conduct a

performance source test by July 1, 2006 to demonstrate compliance with the selected emission limit(s) in accordance with the applicable source test methods listed in subdivision (f) and subparagraph (e)(1)(D).

(C) The operator shall submit a source test protocol to the Executive Officer no later than sixty (60) calendar days before the proposed test date for the Executive Officer's approval. The operator shall include in the test protocol, at a minimum, the following information: the selected PM_{10} emission limit(s) to be complied with set forth in paragraph (d)(1), the selected operating parameters to be monitored for the control equipment to ensure compliance with the emission limit(s), the operating conditions of the FCCU, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

(D) The operator shall conduct the performance source test for PM_{10} emissions using SCAQMD Source Test Method 5.2 modified as in subparagraph (f)(1)(F) to determine the filterable PM_{10} emissions and the condensable PM_{10} emissions. The operator shall recover the PM captured in the cyclone and report the data for informational purposes only. The operator may elect to conduct a performance source test for PM emissions using SCAQMD Source Test Method 5.2, simultaneous with the performance source test for PM_{10} emissions to determine the ratio of filterable PM_{10} emissions to filterable PM emissions. Subject to the approval of the Executive Officer following an evaluation of a performace source test report, the operator may conduct subsequent annual compliance source tests for PM_{10} emissions using SCAQMD Source Test Method 5.2 and the above determined ratio. The operator shall conduct a performance source test for ammonia emissions concurrently with the performance source test for PM_{10} emissions.

(E) During the performance source test, the operator shall establish the operating levels for each parameter of the control equipment to be monitored pursuant to paragraph (e)(3). The operator shall monitor and record, at a minimum, all operating data for each

parameter, fresh feed rate, and flue gas flow rate and submit this data with the test report.

(F) The operator shall submit a complete test report to the Executive Officer no later than sixty (60) calendar days after completion of the source test.

(2) Compliance Testing

(A) The operator of any FCCU shall conduct, at a minimum, an annual compliance source test for PM_{10} and ammonia emissions in accordance with the test methods listed in subdivision (f) to demonstrate compliance with the selected emission limit(s) in subdivision (d). The operator shall conduct the compliance source tests for PM_{10} emissions concurrently with the compliance source test for ammonia emissions.

(B) During the annual compliance source test, the operator shall monitor and record, at a minimum, all operating data for the selected operating parameters of the FCCU control equipment, fresh feed rate and flue gas flow rate and submit this data with the test report.

(C) The operator shall conduct annual compliance source test(s) to determine the filterable and condensable PM_{10} emissions using SCAQMD Source Test Method 5.2 modified as in subparagraph (f)(1)(F). The operator may use SCAQMD Source Test Method 5.2 to determine the filterable PM emissions and estimate the filterable PM_{10} emissions using the ratio determined in the performance source test conducted pursuant to paragraph (e)(1).

(D) The operator shall conduct the first annual compliance source test in accordance with the approved source test protocol within sixty (60) calendar days after the compliance date specified in subdivision (d). For the first annual compliance source test, the operator shall submit a source test protocol to the Executive Officer no later than sixty (60) calendar days prior to the proposed test date for the Executive Officer's approval. The operator shall include in the test protocol the same information as required in subparagraph (e)(1)(C). The operator may use the performance source test as the first annual compliance source test if the performance source test is conducted within 180 calendar days

from the compliance date specified in subdivision (d). The operator need not submit a source test protocol for a subsequent annual compliance source test if the subsequent annual compliance source test will be conducted using the previously approved protocol.

(E) The operator shall conduct subsequent annual source tests within twelve (12) calendar months but no sooner than nine (9) calendar months from the date of completion of the previous annual source test.

(F) The operator shall submit a complete test report for any annual source test to the Executive Officer no later than sixty (60) calendar days of completion of the source test.

(G) Subject to the Executive Officer's approval, the operator may synchronize the timing of testing and submitting the test report required under subparagraphs (e)(2)(D) and (e)(2)(F) with the Relative Accuracy Test Audit (RATA) required under Rule 2011, *Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SO_x) Emissions*, and Rule 2012, *Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO_x) Emissions*, of Regional Clean Air Incentives Market (RECLAIM) program.

(3) Monitoring

(A) No later than May 7, 2004, the operator shall submit a plan, for Executive Officer approval, specifying the operating parameters to be monitored, the range of operating levels of each proposed parameter, and the frequency of monitoring and recording, for the control equipment of the FCCU installed and operated before November 7, 2003.

(B) With the application for permit to construct or modify the FCCU, the operator shall submit a plan, for Executive Officer approval, specifying the operating parameters to be monitored, the range of operating levels of each proposed parameter, and the frequency of monitoring and recording, for the control equipment of the FCCU constructed or modified after November 7, 2003.

(C) The operator shall select the operating parameters and frequency of monitoring and recording specified in Attachment A, or as an

alternative, the operator may propose other appropriate substitute parameters and frequencies for Executive Officer approval.

(D) The operator shall not be required to comply with the monitoring or recording requirements during a malfunction period or a planned routine maintenance period of the monitoring or recording device provided that:

(i) The malfunction period or the planned routine maintenance period of the monitoring or recording device does not exceed ninety-six (96) consecutive hours;

(ii) The monitoring or recording device has been either shutdown for a planned routine maintenance and the operator has provided a written notification to the Executive Officer at least two calendar weeks in advance; or by a mechanical or electrical failure or fire caused by circumstances beyond the operator's control; and

(iii) The operator has submitted a report to the Executive Officer within ninety-six (96) hours after the monitoring or recording device(s) returns to normal operation. Such written notification and report shall include information as prescribed by the Executive Officer including at a minimum the cause of the shutdown, the time the monitoring or recording device(s) became non-operational, the time or estimated time the monitoring or recording device(s) returned to normal operation, the maintenance performed or corrective and preventive actions taken to prevent future non-operational conditions

(4) Reporting

The operator shall report filterable PM_{10}, condensable PM_{10} and ammonia emissions measured according to the test method specified under subdivision (f) on an annual basis pursuant to paragraph (e)(2).

(5) Recordkeeping

The operator shall maintain all information required to demonstrate compliance in a manner approved by the Executive Officer for a period of at least five years and made available to the Executive Officer upon request.

(f) Source Test Methods and Calculation

(1) The operator shall use the following source test methods, as applicable, to determine the PM_{10} and ammonia emission rates. All source test methods referenced below shall be the most recent version issued by the respective organization.

(A) SCAQMD Source Test Method 1 – *Velocity and Sample Traverse Points*;

(B) SCAQMD Source Test Method 2 – *Stack Gas Flow Rate*;

(C) SCAQMD Source Test Method 3 – *Stack Gas Density*;

(D) SCAQMD Source Test Method 4 – *Stack Gas Moisture*;

(E) SCAQMD Source Test Method 5.2 - *Determination of Particulate Matter Emissions from Stationary Sources Using Heated Probe and Filter*;

(F) SCAQMD Source Test Method 5.2 modified to use an in-stack PM_{10} cut cyclone and operated at a constant sampling rate to sample PM_{10}, as specified in U.S. EPA Source Test Method 201A - *Determination of PM_{10} Emissions - Constant Sampling Rate Procedures*, 40 CFR Part 51, Appendix M. Analyses and calculations shall be performed according to SCAQMD Source Test Method 5.2, including those for the determination of the condensable PM_{10} portion;

(G) SCAQMD Source Test Method 207-1 - *Determination of Ammonia Emissions from Stationary Sources*;

(H) SCAQMD Source Test Method 10.1 - *Carbon Monoxide, Carbon Dioxide and Oxygen*; and

(I) SCAQMD Source Test Method 100.1 - *Nitrogen Oxides, Sulfur Dioxide, Carbon Monoxide, and Oxygen.*

(J) EPA Source Test Method 5 may be used in lieu of SCAQMD Method 5.2 modified.

(2) Source tests for PM and PM_{10} shall be taken and the average of the samples shall be used to determine the applicable emission rate in accordance with the following requirements:

(A) Simultaneous duplicate samples shall be obtained unless the operator demonstrates to the satisfaction of the Executive Officer that it is not physically feasible to do so, in which case the

operator shall take sequential triplicate samples;

(B) All samples must have minimum sampling volume of 120 cubic feet or a minimum filterable PM and PM_{10} catch of 6 milligrams per sample shall be collected;

(C) For duplicate samples, the source test shall be deemed invalid if the difference between the two samples is greater than 35% of the average of the two samples in the applicable units specified in subparagraph (d)(1)(A) and if the difference between the filterable sample catches normalized to the average sampling volume is greater than 3.5 milligrams. If the source test is deemed invalid, the test shall be repeated; and

(D) For triplicate samples, if the operator can demonstrate to the satisfaction of the Executive Officer that the process conditions, including but not limited to the throughput, the quantity, type, and quality of all feedstock to the FCCU, and the emission control equipment conditions have not changed throughout the sequential test period, then the operator may apply the Dixon outlier test at the 95% significance level to check for and discard one outlier, and shall use the average of the two remaining samples to determine filterable PM and PM_{10} emissions.

(3) The operator may use alternative or equivalent source test methods, as defined in U.S. EPA 40 CFR 60.2, if they are approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.

(4) The operator shall use a test lab approved under the SCAQMD Laboratory Approval Program for the source test methods cited in paragraph (f)(1) if such approved lab exists. If there is no approved lab, then approval shall be granted by the Executive Officer on a case-by-case basis.

(5) Any particulate emissions from existing CO boilers located downstream of existing electrostatic precipitators, existing as of November 7, 2003, may be excluded for the purpose of demonstrating compliance with the PM_{10} limit of paragraph (d)(1).

(g) Exemptions

(1) The operator shall not be required to comply with the emission limits specified under paragraph (d)(1) during planned startup and shutdown

periods related to the FCCU process turnaround provided that the operator utilizes the control equipment during these periods to the maximum extent possible, as demonstrated to the satisfaction of the Executive Officer, to minimize the PM_{10} emissions including drying, energizing the electrostatic precipitators, and using the electrostatic precipitators prior to filling the FCCU regenerator with catalyst, if applicable and considering the safe operation of the equipment. Each startup or shutdown period shall not exceed one hundred twenty (120) hours. The operator shall provide written notification to the Executive Officer at least two calendar weeks in advance of the beginning of the startup and shutdown period.

(2) The operator of control equipment designed and installed prior to November 7, 2003 meeting the emission limits specified under paragraph (d)(1) shall not be required to comply with the emission limits under paragraph (d)(1) during routine maintenance periods of the electrostatic precipitators provided that the maintenance period does not occur more than once per any twelve month consecutive period for a duration of not more than ten (10) consecutive days. The operator shall provide written notification to the Executive Officer at least two calendar weeks in advance of the maintenance period. The operator may extend the routine maintenance period to more than ten (10) consecutive days provided that the operator pays a mitigation fee of $8,800 per day for each day in excess of ten (10) days. The mitigation fee shall be submitted within ninety (90) calendar days after the end of the routine maintenance period.

(h) Alternative Compliance Provision

In lieu of complying with the PM_{10} emission limit in clause (d)(1)(A)(ii), the operator may comply with the emission rate of 0.006 grain per dry standard cubic foot of flue gas, corrected to 3% O_2 dry, provided that the operator has a compliance plan approved by the Executive Officer that demonstrates equivalent PM_{10} emission reductions commencing December 31, 2006 through the use of alternative compliance method(s). The operator shall submit a complete compliance plan by June 15, 2004. Equivalent PM_{10} emission reductions between 0.006 grain/dscf and 0.005 grain/dscf shall be determined as follows.

$$E_{pm10} = (0.006 - 0.005 \text{ grain/dscf})(F)(CF_{pm10})$$

where:

E_{pm10} = Equivalent PM_{10} emission reductions per year between 0.006 grain/dscf and 0.005 grain/dscf, tons/yr;

F = Maximum design exhaust flue gas flow rate, dscfm; and

CF_{pm10} = Conversion factor from grains per minute to tons per year = 0.038.

The Executive Officer shall approve or deny the compliance plan, or any amendments to the compliance plan, within 180 calendar days from the date the plan is deemed complete. The operator shall, at a minimum, submit a compliance plan that includes:

(A) A precise description of the alternative compliance method(s), including but not limited to, a listing of equipment that are the source of PM_{10} emissions, operation schedule and modes of operation of such equipment, control techniques for PM_{10} emissions, documents to support the control efficiency used in the plan, a quantification of emission reductions from each of the alternative compliance method(s), and date when such reductions are to be achieved;

(B) A demonstration that the emission reductions are surplus, enforceable, real, and sustainable. Surplus means that the emission reductions are not required by the control options identified in the most recent Air Quality Management Plan approved by the District Governing Board, and are not used by the operator to meet any other regulatory requirements. Enforceable means that the alternative compliance method(s) to achieve emission reductions can be verified by the Executive Officer. Real and sustainable means that the emission reductions can be measured by appropriate source test methods approved by the District, CARB and U.S. EPA, and sustainable during the implementation time frame of the alternative compliance method(s) as specified in the compliance plan;

(C) A demonstration that at least 50% of the required equivalent PM_{10}

emission reductions are obtained within five (5) kilometers from the outer boundaries of the facility; and

(D) A demonstration that the overall PM_{10} emission reductions provided by the alternative compliance method(s) are comprised of at least an 80% emission reduction in $PM_{2.5}$.

Attachment A

Operating Parameters and Frequency of Monitoring and Recording [1]

Operating Parameters	Monitoring Frequency	Recording Frequency
Dry (or Wet) Electrostatic Precipitators		
Flue gas inlet temperature to ESP	Continuously [2]	Hourly [3]
Flue gas flow rate	Continuously [2]	Hourly [3]
Voltage and current across ESP (or total power input)	Continuously [2]	Hourly [3]
Ammonia injection rate	Continuously [2]	Hourly [3]
Wet Scrubbers (or Wet Electrostatic Precipitators)		
Flue gas flow rate	Continuously [2]	Hourly [3]
Type of scrubbing liquid and average pH	Daily [4]	Daily [4]
Scrubbing liquid flow rate	Continuously [2]	Hourly [3]
SO_2 Reducing Catalyst Additives		
Type of SO_2 reducing catalyst	Once and when change occurs	Once and when change occurs
Addition rate of SO_2 reducing catalyst	Daily [4]	Daily [4]
Pickup factor (i.e. lbs SO_2 reduced per lbs of additives)	Once and when change occurs	Once and when change occurs
Baghouses		
Flue gas flow rate	Continuously [2]	Hourly [3]
Pressure drop	Continuously [2]	Hourly [3]
Flue gas inlet temperature	Continuously [2]	Hourly [3]

Note:

1. Monitoring and recording as shown in this attachment shall not be required during periods of routine maintenance and malfunction of monitoring and recording devices.
2. "Continuously Monitoring" means monitoring at least once every 15 minutes.
3. "Hourly Recording" means recording at least one measurement every hour.
4. "Daily Monitoring" and "Daily Recording" means monitoring and recording at least one measurement every day.

SOUTH COAST
2/24/95

(Adopted November 4, 1988)(Amended May 5, 1989)(Amended June 2, 1989)
(Amended March 2, 1990)(Amended November 2, 1990)(Amended December 7, 1990)
(Amended August 2, 1991)(Amended January 13, 1995)

RULE 1106. MARINE COATING OPERATIONS

(a) Applicability

This rule applies to all coating operations of boats, ships, and their appurtenances, and to buoys and oil drilling rigs intended for the marine environment. Coating operations of vessels which are manufactured or operated primarily for recreational purposes are subject to the requirements of Rule 1106.1 - Pleasure Craft Coating Operations.

(b) Definitions

For the purpose of this rule the following definitions shall apply:

(1) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that is dispensed by means of a propellant, and is packaged in a disposable can for hand-held application.

(2) AIR DRIED COATING is any coating that is cured at a temperature below 90°C (194°F).

(3) ANTENNA COATING is any coating applied to equipment and associated structural appurtenances which are used to receive or transmit electromagnetic signals.

(4) ANTIFOULING COATING is any coating applied to the underwater portion of a vessel to prevent or reduce the attachment of biological organisms. An antifouling coating shall be registered with the Environmental Protection Agency (EPA) as a pesticide.

(5) BAKED COATING is any coating that is cured at a temperature at or above 90°C (194°F).

(6) ELASTOMERIC ADHESIVE is any adhesive containing natural or synthetic rubber.

(7) EXEMPT COMPOUNDS are any of the following compounds:

(A) Group I (General)

trifluoromethane (HFC-23)
pentafluoroethane (HFC-125)
1,1,2,2-tetrafluoroethane (HFC-134)
tetrafluoroethane (HFC-134a)

1,1,1-trifluoroethane (HFC-143a)
1,1-difluoroethane (HFC-152a)
chlorodifluoromethane (HCFC-22)
dichlorotrifluoroethane (HCFC-123)
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)
dichlorofluoroethane (HCFC-141b)
chlorodifluoroethane (HCFC-142b)
cyclic, branched, or linear, completely fluorinated alkanes
cyclic, branched, or linear, completely fluorinated ethers with no unsaturations
cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations
sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

(B) Group II

methylene chloride
1,1,1-trichloroethane (methyl chloroform)
trichlorotrifluoroethane (CFC-113)
dichlorodifluoromethane (CFC-12)
trichlorofluoromethane (CFC-11)
dichlorotetrafluoroethane (CFC-114)
chloropentafluoroethane (CFC-115)

The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, production of chlorofluorocarbons (CFC), 1,1,1,-trichloroethane (methyl chloroform), and carbon tetrachloride will be phased out in accordance with the Code of Federal Regulation Title 40, Part 82 (December 10, 1993).

(8) EXTREME HIGH GLOSS COATING is any coating which achieves at least 95 percent reflectance on a 60° meter when tested by ASTM Method D-523.

(9) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

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Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters

(10) HEAT RESISTANT COATING is any coating which during normal use must withstand temperatures of at least 204°C (400°F).

(11) HIGH GLOSS COATING is any coating which achieves at least 85 percent reflectance on a 60° meter when tested by ASTM Method D-523.

(12) HIGH TEMPERATURE COATING is any coating which must withstand temperatures of at least 426°C (800°F).

(13) LOW ACTIVATION INTERIOR COATING is any coating used on interior surfaces aboard ships to minimize the activation of pigments on painted surfaces within a radiation environment.

(14) MARINE COATING is any coating, except unsaturated polyester resin (fiberglass) coatings, containing volatile organic materials and applied by any means to ships, boats, and their appurtenances, and to buoys and oil drilling rigs intended for the marine environment.

(15) METALLIC HEAT RESISTANT COATING is any coating which contains more than 5 grams of metal particles per liter of coating as applied and which must withstand temperatures over 80°C (175°F).

(16) NAVIGATIONAL AIDS are buoys or other Coast Guard waterway markers.

(17) PRETREATMENT WASH PRIMER is any coating which contains at least 1/2-percent acids, by weight, to provide surface etching and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

(18) REPAIR AND MAINTENANCE THERMOPLASTIC COATING is any resin-bearing coating, such as vinyl, chlorinated rubber, or bituminous coatings, in which the resin becomes pliable with the application of heat, and is used to recoat portions of a previously coated substrate which has sustained damage to the coating following normal coating operations.

(19) SEALANT FOR WIRE-SPRAYED ALUMINUM is any coating of up to one mil (0.001 inch) in thickness of an epoxy material which is reduced for application

with an equal part of an appropriate solvent (naphtha, or ethylene glycol monoethyl ether).

(20) SOLVENT CLEANING OPERATION is the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants from parts, products, tools, machinery, equipment, and general work areas. Contaminants include, but are not limited to, dirt, soil, and grease. In a cleaning process which consists of a series of cleaning methods, each distinct method shall constitute a separate solvent cleaning operation.

(21) SPECIAL MARKING COATING is any coating used for items such as flight decks, ships' numbers, and other safety/identification applications.

(22) TACK COAT is an epoxy coating of up to two mils (0.002 inch) thick applied to an existing epoxy coating. The existing epoxy coating must have aged beyond the time limit specified by the manufacturer for application of the next coat.

(23) TOUCH-UP COATING is any coating used to cover minor imperfections prior to shipment appearing after the main coating operation.

(24) UNDERSEA WEAPONS SYSTEM is any or all components of a weapons system that is launched or fired underwater.

(25) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(26) WIRE-SPRAYED ALUMINUM is any multi-aluminum coating applied to a steel substrate using oxygen fueled combustion spray methods.

(c) Requirements

(1) VOC Content of Marine Coatings

Except as otherwise provided in this rule, a person shall not apply a marine coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter of coating as applied, less water and less exempt solvents:

COATING	VOC LIMIT	
	Baked	Air Dried
General Coating	275 g/L	340 g/L

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COATING	VOC LIMIT	
	Baked	Air Dried
Specialty Coating		
Heat Resistant	360	420
Metallic Heat Resistant		530
High Temperature		500
Pre-Treatment Wash Primer	780	780
Underwater Weapons Systems	275	340
Elastomeric Adhesives with 15%, by Weight, Natural or Synthetic Rubber		730
Solvent-Based Inorganic Zinc		650
Navigational Aids		340
Sealant for Wire-Sprayed Aluminum		610
Special Marking		490
Tack Coat		610
Low Activation Interior Coating		420
Repair and Maintenance Thermoplastic		550
Extreme High-Gloss Coating	420	490
Antenna Coating		530
Antifoulant		400
High Gloss	275	340

(2) Approved Emission Control System

(A) Owners and/or operators may comply with the provisions of paragraph (c)(1) by using an emission control system, which has been approved in writing by the Executive Officer, for reducing VOC emissions. The control system must achieve a minimum capture efficiency using USEPA, ARB, and District methods specified in subparagraph (e)(4)(A) and a destruction efficiency of at least 85 percent by weight, and,

(B) The approved system shall reduce the VOC emissions, when using non-compliant coatings, to an equivalent or greater level that would be achieved by the provisions in paragraph (c)(1). The required efficiency of an emission control system at which an equivalent or greater level of

SOUTH COAST

VOC reduction will be achieved shall be calculated by the following equation:

$$C.E. = \left[1 - \left\{ \frac{(VOC_{LWc})}{(VOC_{LWn,Max})} \times \frac{1 - (VOC_{LWn,Max}/D_{n,Max})}{1 - (VOC_{LWc}/D_c)} \right\} \right] \times 100$$

Where:

C.E.	=	Control Efficiency, percent
VOC_{LWc}	=	VOC Limit of Rule 1106, less water and less exempt compounds, pursuant to subdivision (c).
$VOC_{LWn,Max}$	=	Maximum VOC content of non-compliant coating used in conjunction with a control device, less water and less exempt compounds.
$D_{n,Max}$	=	Density of solvent, reducer, or thinner contained in the non-compliant coating, containing the maximum VOC content of the multicomponent coating.
D_c	=	Density of corresponding solvent, reducer, or thinner used in the compliant coating system = 880g/L.

(3) Alternative Emission Control Plan

Owners and/or operators may achieve compliance with the requirements of paragraph (c)(1) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(4) Solvent Cleaning Operations; Storage and Disposal of VOC-containing Materials

All solvent cleaning operations and the storage and disposal of VOC-containing materials used in solvent cleaning operations shall be carried out pursuant to Rule 1171 - Solvent Cleaning Operations.

(5) Recordkeeping

Notwithstanding the provisions of subdivision (g), records shall be maintained pursuant to Rule 109.

(d) Prohibition of Specification

(1) A person shall not solicit or require any other person to use, in the dDistrict, any coating or combination of coatings to be applied to any marine vessel or

marine component subject to the provisions of this rule that does not meet the limits requirements of this rule or of an Alternative Emission Control Plan approved pursuant to the provisions of paragraph (c)(3) of this rule.

(2) The requirements of paragraph (d)(1) shall apply to all written or oral agreements executed or entered into after November 4, 1988.

(e) Test Methods

(1) Determination of VOC Content

The VOC content of coatings, subject to the provisions of this rule shall be determined by the following methods:

(A) United States Environmental Protection Agency (USEPA) Reference Method 24 (Code of Federal Regulations Title 40 Part 60, Appendix A,). The exempt compound content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOC) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with subdivision (c), only when manufacturers specify which individual compounds are used in the coating formulation. In addition, the manufacturers shall identify the USEPA, California Air Resources Board, and the SCAQMD approved test methods used to quantify the amount of each exempt compound

(2) Determination of Metal Content

The metal content in metallic coatings subject to the provisions of this rule shall be determined by the SCAQMD Method 311 (Analysis of Percent Metal in Metallic Coatings by Spectrographic Method) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(3) Determination of Acid Content

The acid content of coating subject to the provisions of this rule shall be determined by ASTM D 1613-85 (Acidity in Volatile Solvents and Chemical Intermediates Used in Paint. Varnish, Lacquer, and Related Products) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(4) Determination of Efficiency of Emission Control System

(A) The efficiency of the collection device of the emission control system as specified in paragraph (c)(2) shall be determined by the USEPA method cited in 55 Federal Register 26865 (June 29, 1990), or any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD.

(B) The efficiency of the control device of the emission control system as specified in paragraph (c)(2) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. USEPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(5) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(6) All test methods referenced in this section shall be the most recently approved version.

(f) Rule 442 Applicability

Any marine coating operation or facility which is exempt from all or a portion of this rule shall comply with the provisions of Rule 442.

(g) Exemptions

The provisions of this rule shall not apply to:

(1) marine coatings applied to interior surfaces of potable water containers.

(2) touch-up coatings

(3) marine coatings purchased before January 1, 1992, in containers of one quart or less and applied to pleasure craft.

(4) antifoulant coatings applied to aluminum hulls.

(5) aerosol coating products.

6/3/99

(Adopted May 1, 1992)(Amended March 8, 1996)
(Amended June 13, 1997)(Amended February 12, 1999)

Rule 1106.1. PLEASURE CRAFT COATING OPERATIONS

(a) Applicability

This rule is applicable to all coating operations of pleasure craft, as defined in paragraph (b)(10) of this rule, or their parts and components, for the purpose of refinishing, repairing, modification, or manufacturing such craft. This rule shall also apply to establishments engaged in activities described in the United States Office of Management and Budget's 1987 Standard Industrial Classification Manual, under Standard Industrial Classification (SIC) codes 3732 - Boat Building and Repairing and 4493 - Marinas. Pleasure craft coating operations which are subject to the requirements of this rule shall not be subject to the requirements of Rule 1106 - Marine Coating Operations.

(b) Definitions

For purposes of this rule, the following definitions shall apply:

(1) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic/marking applications.

(2) ANTIFOULANT COATING is any coating applied to the underwater portion of a pleasure craft to prevent or reduce the attachment of biological organisms, and registered with the United States Environmental Protection Agency (EPA) as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code Section 136).

(3) CLEAR WOOD FINISHES are clear and semi-transparent topcoats applied to wood substrates to provide a transparent or translucent film.

(4) EXEMPT COMPOUNDS (See Rule 102-Definition of Terms).

(5) EXTREME HIGH GLOSS COATING is any coating which achieves at least 95 percent reflectance on a 60o meter when tested by ASTM Method D 523-89.

(6) FINISH PRIMER/SURFACER is a coating applied with a wet film thickness of less then 10 mils prior to the application of a topcoat for

purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier, or promotion of a uniform surface necessary for filling in surface imperfections.

(7) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and coating solids and which is calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{Ws - Ww - Wes}{Vm - Vw - Ves}$$

Where:

W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters

(8) HIGH BUILD PRIMER/SURFACER is a coating applied with a wet film thickness of 10 mils or more prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, or a moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections.

(9) HIGH GLOSS COATING is any coating which achieves at least 85 percent reflectance on a 60o meter when tested by ASTM D 523-89.

(10) PLEASURE CRAFT are vessels which are manufactured or operated primarily for recreational purposes, or leased, rented, or chartered to a person or business for recreational purposes. The owner or operator of such vessels shall be responsible for certifying that the intended use is for recreational purposes.

(11) PLEASURE CRAFT COATING is any marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, roller, or other means to a pleasure craft.

(12) PRETREATMENT WASH PRIMER is a coating which contains no more than 12 percent solids, by weight, and at least 1/2 percent acids, by

weight; is used to provide surface etching; and is applied directly to fiberglass and metal surfaces to provide corrosion resistance and adhesion of subsequent coatings.

(13) SEALER is a low viscosity coating applied to bare wood to seal surface pores to prevent subsequent coatings from being absorbed into the wood.

(14) TEAK PRIMER is a coating applied to teak or previously oiled decks in order to improve the adhesion of a seam sealer to wood.

(15) TOPCOAT is any final coating applied to the interior or exterior of a pleasure craft.

(16) VARNISHES are clear wood topcoats formulated with various resins to dry by chemical reaction on exposure to air.

(17) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound which contains the element carbon, excluding methane, carbon dioxide, carbon monoxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(c) Requirements

(1) VOC Content

(A) Within the District, a person shall not sell, offer for sale, solicit, apply, or require any other person to use in the District any pleasure craft coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter of coating applied, less water and exempt solvents:

COATING	VOC LIMIT		
	On or After 7/1/94	On or After 2/12/99	On or After 1/1/2001
Topcoats			
Extreme High Gloss	490	650	490
High Gloss	420	420	420
Pretreatment Wash Primers	780	780	780
Finish Primer/Surfacer	420	600	420
High Build Primer Surfacer	340	340	340
Teak Primer	775	775	775
Antifoulant Coatings			
Aluminum Substrate	560	560	560
Other Substrates	150	400	330
Clear Wood Finishes			
Sealers	550	550	550
Varnishes	490	490	490
Others	420	420	420

In the case of any coating sold, offered for sale, or solicited for use, this prohibition shall only apply where it is designated anywhere on the container by any sticker or label affixed thereto, or where it is indicated in any sales or advertising literature, that the coating may be used as, or is suitable for use as, a pleasure craft coating.

(B) This section shall not apply to pleasure craft coatings sold, offered for sale, or solicited, for shipment or use outside of this District or for shipment to other manufacturers for repackaging.

(2) Solvent cleaning of coating application equipment, parts, products, tools, machinery, equipment, and general work areas, and the storage and disposal of VOC-containing materials used in solvent cleaning operations, shall be carried out in accordance with Rule 1171 (Solvent Cleaning Operations).

(3) A person shall not apply pleasure craft coatings subject to the requirements of this rule with a coating containing carbon tetrachloride or any of the Group II exempt compounds as defined in paragraph (b)(4) except for: methylene chloride; perchloroethylene; cyclic, branched, or

linear, completely methylated siloxanes (VMS); or parachlorobenzotrifluoride (PCBTF).

(d) Recordkeeping Requirement

Records shall be maintained in accordance with Rule 109.

(e) Compliance Test Methods

For purposes of this rule, the following test methods shall be used:

(1) VOC Content

(A) The VOC content of coatings shall be determined by:

(i) EPA Reference Method 24, (40 Code of Federal Regulations, Part 60, Appendix A). The exempt solvent content shall be determined by SCAQMD Method 302 and 303 (SCAQMD "Laboratory Method of Analysis for Enforcement Samples" manual); or

(ii) SCAQMD Methods 304 - Determination of Volatile Organic Compounds (VOC) in Various Materials, 303 - Determination of Exempt Compounds, and 302 - Distillation of Solvents from Paints, Coatings and Inks (SCAQMD "Laboratory Method of Analysis for Enforcement Samples" manual).

(B) VOC content determined to exceed the limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of this rule.

(2) Acid Content in Coatings

The percent acid by weight of pretreatment wash primers shall be determined by ASTM D 1613-85 - Acidity in Volatile Solvents and Chemical Intermediates Used in Paints, Varnishes, Lacquers, and Related Products.

(3) The following classes of compounds: cyclic branched, or linear completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision (c), only at such time as manufacturers

specify which individual compounds are used in the coating formulations and identify the test methods, which prior to such analysis, have been approved by the USEPA and the SCAQMD, that can be used to quantify the amounts of each exempt compound.

(f) Exemptions

The provisions of this rule shall not apply to aerosol coating products.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

RULE 1107. COATING OF METAL PARTS AND PRODUCTS

(Adopted June 1, 1979)(Amended December 4, 1981)(Amended May 7, 1982)
(Amended December 2, 1983)(Amended March 2, 1984)(Amended January 9, 1987)
(Amended June 5, 1987)(Amended May 5, 1989)(Amended March 2, 1990)
(Amended November 2, 1990)(Amended August 2, 1991)(Amended May 12, 1995)
(Amended March 8, 1996)(Amended August 14, 1998)
(Amended November 17, 2000)(Amended November 9, 2001)
(Amended November 4, 2005)(Amended January 6, 2006)

(a) Purpose and Applicability

The purpose of Rule 1107 is to reduce volatile organic compound (VOC) emissions from the coating of metal parts and products. This rule applies to all metal coatings operations except those performed on aerospace assembly, magnet wire, marine craft, motor vehicle, metal container, and coil coating operations. This rule does not apply to the coating of architectural components coated at the structure site or at a temporary unimproved location designated exclusively for the coating of structural components.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic/marking applications.

(2) AIR-DRIED COATING is a coating that is cured at a temperature below 90°C (194°F).

(3) ALTERNATIVE EMISSION CONTROL PLAN is a plan that allows a source to demonstrate an alternative method of rule compliance, pursuant to Rule 108 - Alternative Emission Control Plans.

(4) BAKED COATING is a coating that is cured at a temperature at or above 90°C (194°F).

(5) CAMOUFLAGE COATING is a coating used, principally by the military, to conceal equipment from detection.

(6) CAPTURE EFFICIENCY is the percentage of volatile organic compounds used, emitted, evolved, or generated by the operation, that are collected and directed to an air pollution control device.

(7) CATALYST is a substance that alters the rate of chemical reaction without participating in that reaction or changing during the course of reaction.

(8) COATING is a material which is applied to a surface and which forms a continuous film in order to beautify and/or protect such surface.

(9) CONTRACT PAINTER is a non-manufacturer of metal parts and products who applies coatings to such products at his facility exclusively under contract with one or more parties that operate under separate ownership and control.

(10) DIP COATING is a method of applying coatings to a substrate by submersion into and removal from a coating bath.

(11) ELECTRIC-INSULATING VARNISH is a non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.

(12) ELECTRIC-INSULATING AND THERMAL-CONDUCTING COATING is a coating that displays an electrical insulation of at least 1000 volts DC per mil on a flat test plate and an average thermal conductivity of at least 0.27 BTU per hour-foot-degree-Fahrenheit.

(13) ELECTROCOATING is a process that uses coating concentrates or pastes added to a water bath. The coating is applied by using an electrical current in either an anodic or cathodic process.

(14) ELECTROSTATIC APPLICATION is a method of applying coating particles or coating droplets to a grounded substrate by electrically charging them.

(15) ESSENTIAL PUBLIC SERVICE COATING is a protective (functional) coating applied to components of power, water, and natural gas production, transmission or distribution systems during repair and maintenance procedures.

(16) ETCHING FILLER is a coating that contains less than 23 percent solids by weight and at least 1/2-percent acid by weight, and is used instead of applying a pretreatment coating followed by a primer.

(17) EXEMPT COMPOUNDS (see Rule 102-Definition of Terms).

(18) EXTREME HIGH-GLOSS COATING is a coating which, when tested by the American Society for Testing Material Test Method D-523 adopted in 1980, shows a reflectance of 75 or more on a 60° meter.

(19) EXTREME-PERFORMANCE COATING is a coating used on a metal surface where the coated surface is, in its intended use, subject to the following:

(A) Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solution; or

(B) Repeated exposure to temperatures in excess of 250° F; or

(C) Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers or scouring agents.

(20) FLOW COAT is a non-atomized technique of applying coatings to a substrate with a fluid nozzle in a fan pattern with no air supplied to the nozzle.

(21) GRAMS OF VOC PER LITER OF COATING LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_S = weight of volatile compounds in grams
W_W = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_W = volume of water in liters
V_{es} = volume of exempt compounds in liters

(22) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_S = weight of volatile compounds in grams

W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters

(23) HAND APPLICATION METHODS is the application of coatings by manually held non-mechanically operated equipment. Such equipment includes paintbrushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

(24) HARDENER is a substance or mixture of substances that controls the viscosity of the reactants and products of a chemical reaction; while participating in chemical reaction and becoming part of the product or products of chemical reaction.

(25) HEAT-RESISTANT COATING is a coating that must withstand a temperature of at least 400°F during normal use.

(26) HIGH-PERFORMANCE ARCHITECTURAL COATING is a coating used to protect architectural subsections and which meets the requirements of the Architectural Aluminum Manufacturer Association's publication number AAMA 605.2-1980.

(27) HIGH-TEMPERATURE COATING is a coating that is certified to withstand a temperature of 1000°F for 24 hours.

(28) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is a coating application system which is designed to be operated and which is operated between 0.1 and 10 pounds per square inch gauge (psig) air pressure, measured dynamically at the center of the air cap and the air horns.

(29) INK is a fluid that contains dyes and/or colorants and is used to make markings but not to protect surfaces.

(30) MAGNETIC DATA STORAGE DISK COATING is a coating used on a metal disk which stores data magnetically.

(31) METAL PARTICLES are pieces of an elemental pure metal or a combination of elemental metals.

(32) METAL PARTS AND PRODUCTS are any components or complete units fabricated from metal, except those subject to the coating provisions of other source specific rules of Regulation XI.

(33) METALLIC COATING is a coating which contains more than 5 grams of metal particles per liter of coating, as applied.

(34) MIL is 0.001 inch.

(35) MILITARY SPECIFICATION COATING is a coating applied to metal parts and products and which has a paint formulation approved by a United States Military Agency for use on military equipment.

(36) MOLD-SEAL COATING is the initial coating applied to a new mold or repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.

(37) MOTOR VEHICLE is a passenger car, light-duty truck, medium-duty vehicle, or heavy-duty vehicle as defined in Section 1902, Title 13, of the California Administrative Code.

(38) MULTI-COMPONENT COATING is a coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to form an acceptable dry film.

(39) ONE-COMPONENT COATING is a coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner, necessary to reduce the viscosity, is not considered a component.

(40) OPTICAL ANTI-REFLECTION COATING is a coating with a low reflectance in the infrared and visible wavelength range and is used for anti-reflection on or near optical and laser hardware.

(41) PAN-BACKING COATING is a coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating elements.

(42) PHOTORESIST COATING is a coating applied directly to a metal substrate to protect surface areas when chemical milling, etching, or other chemical surface operations are performed on the substrate.

(43) PHOTORESIST OPERATION is a process for the application and development of photoresist coating on a metal substrate, including preparation (except primary cleaning), soft bake, development, hard bake, and stripping, and can be generally subdivided as follows:

(A) NEGATIVE PHOTORESIST OPERATION is a process where the photoresist hardens when exposed to light and the unhardened photoresist is stripped, exposing the metal surface for etching.

(B) POSITIVE PHOTORESIST OPERATION is a process where the photoresist softens when exposed to light and the softened photoresist is stripped, exposing the metal surface for etching.

(44) PREFABRICATED ARCHITECTURAL COMPONENT COATINGS are coatings applied to metal parts and products which are to be used as an architectural structure.

(45) PRETREATMENT COATING is a coating which contains no more than 12 percent solids by weight, and at least 1/2-percent acid, by weight, is used to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

(46) REACTIVE DILUENT is a liquid which is a VOC during application and one in which, through chemical reaction such as polymerization, 20 percent or more of the VOC becomes an integral part of a finished coating.

(47) REPAIR COATING is a coating used to recoat portions of a product which has sustained mechanical damage to the coating following normal painting operations.

(48) ROLL COAT is a coating method using a machine that applies coating to a substrate by continuously transferring coating through a pair or set of oppositely rotating rollers.

(49) SAFETY-INDICATING COATING is a coating which changes physical characteristics, such as color, to indicate unsafe conditions.

(50) SILICONE-RELEASE COATING is any coating which contains silicone resin and is intended to prevent food from sticking to metal surfaces such as baking pans.

(51) SOLAR-ABSORBENT COATING is a coating which has as its prime purpose the absorption of solar radiation.

(52) SOLID-FILM LUBRICANT is a very thin coating consisting of a binder system containing as its chief pigment material one or more of molybdenum disulfide, graphite, polytetrafluoroethylene (PTFE) or other solids that act as a dry lubricant between faying surfaces.

(53) STENCIL COATING is an ink or a coating which is rolled or brushed onto a template or stamp in order to add identifying letters and/or numbers to metal parts and products.

(54) TEXTURED FINISH is a rough surface produced by spraying and splattering large drops of coating onto a previously applied coating. The coatings used to form the appearance of the textured finish are referred to as textured coatings.

(55) TOUCH-UP COATING is a coating used to cover minor coating imperfections appearing after the main coating operation.

(56) TRANSFER EFFICIENCY is the ratio of the weight or volume of coating solids adhering to an object to the total weight or volume, respectively, of coating solids used in the application process, expressed as a percentage.

(57) VACUUM-METALIZING COATING is the undercoat applied to the substrate on which the metal is deposited or the overcoat applied directly to the metal film.

(58) VOLATILE ORGANIC COMPOUND (VOC) (see Rule 102-Definition of Terms).

(c) Requirements

(1) Operating Equipment

A person shall not apply VOC-containing coatings to metal parts and products subject to the provisions of this rule unless the coating is applied with equipment operated according to the equipment manufacturer specifications, and by the use of one of the following methods:

(A) Electrostatic application, or

(B) Flow coat, or

(C) Dip coat, or

(D) Roll coat, or

(E) High-Volume, Low-Pressure (HVLP) Spray, or

(F) Hand Application Methods, or

(G) Such other coating application methods as are demonstrated to the Executive Officer to be capable of achieving a transfer efficiency equivalent or better to the method listed in subparagraph (c)(1)(E) and for which written approval of the Executive Officer has been obtained.

(2) VOC Content of Coatings

A person shall not apply to metal parts and products subject to the provisions of this rule any coatings, including any VOC-containing materials added to the original coating supplied by the manufacturer, which contain VOC in excess of the limits specified below:

VOC LIMITS Less Water and Less Exempt Compounds Effective Dates								
Coating	**Air-Dried**				**Baked**			
	gm/l		**lb/gal**		**gm/l**		**lb/gal**	
	Current	**7/1/07**	**Current**	**7/1/07**	**Current**	**7/1/07**	**Current**	**7/1/07**
General One-Component	275	275	2.3	2.3	275	275	2.3	2.3
General Multi-Component	340	340	2.8	2.8	275	275	2.3	2.3
Military Specification	340	340	2.8	2.8	275	275	2.3	2.3
Etching Filler	420	420	3.5	3.5	420	420	3.5	3.5
Solar-Absorbent	420	420	3.5	3.5	360	360	3.0	3.0
Heat-Resistant	420	420	3.5	3.5	360	360	3.0	3.0
Extreme High-Gloss	420	340	3.5	2.8	360	360	3.0	3.0
Metallic	420	420	3.5	3.5	420	420	3.5	3.5
Extreme Performance	420	420	3.5	3.5	360	360	3.0	3.0
Prefabricated Architectural One-Component	420	275	3.5	2.3	275	275	2.3	2.3
Prefabricated Architectural Multi-Component	420	340	3.5	2.8	275	275	2.3	2.3
Touch Up	420	420	3.5	3.5	360	360	3.0	3.0
Repair	420	420	3.5	3.5	360	360	3.0	3.0
Silicone Release	420	420	3.5	3.5	420	420	3.5	3.5
High-Performance Architectural	420	420	3.5	3.5	420	420	3.5	3.5
Camouflage	420	420	3.5	3.5	420	420	3.5	3.5
Vacuum-Metalizing	420	420	3.5	3.5	420	420	3.5	3.5
Mold-Seal	420	420	3.5	3.5	420	420	3.5	3.5
High-Temperature	420	420	3.5	3.5	420	420	3.5	3.5

VOC LIMITS (Continued) Less Water and Less Exempt Compounds Effective Dates								
Coating	**Air-Dried**				**Baked**			
	gm/l		**lb/gal**		**gm/l**		**lb/gal**	
	Current	**7/1/07**	**Current**	**7/1/07**	**Current**	**7/1/07**	**Current**	**7/1/07**
Electric-Insulating Varnish	420	420	3.5	3.5	420	420	3.5	3.5
Pan Backing	420	420	3.5	3.5	420	420	3.5	3.5
Pretreatment Coatings	420	420	3.5	3.5	420	420	3.5	3.5

(3) A person shall not use VOC-containing materials which have a VOC content of more than 200 grams per liter of material for stripping any coating governed by this rule.

(4) Containers used for the disposal of cloth or paper used in stripping cured coating shall be closed except when depositing or removing the cloth or paper from the container.

(5) Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in cleaning operations shall be carried out pursuant to Rule 1171 - Solvent Cleaning Operations.

(6) For coatings that contain reactive diluents, the Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds not consumed during curing, in grams

W_w = weight of water not consumed during curing, in grams

W_{es} weight of exempt compounds not consumed during curing, in grams

V_m = volume of the material prior to reaction, in liters

V_w = volume of water not consumed during curing, in liters

V_{es} = volume of exempt compounds not consumed during curing, in liters

(7) Owners and/or operators of control equipment may comply with provisions of paragraph (c)(1) and/or (c)(2) by using approved air pollution control equipment provided:

(A) the control device reduces VOC emissions from an emission collection system by at least 95 percent by weight or the output of the air pollution control device is no more than 5 PPM VOC by volume calculated as carbon with no dilution; and

(B) the owner/operator demonstrates that the emission collection system collects at least 90 percent by weight of the VOC emissions generated by the sources of VOC emissions.

(d) Prohibition of Specifications

A person shall not specify the use in the District of any coating to be applied to any metal parts and products subject to the provisions of this rule that does not meet the limits and requirements of this rule. The requirements of this paragraph shall apply to all written and oral contracts.

(e) Methods of Analysis

All applicable methods of analysis shall be as cited in paragraphs (e)(1) through (e)(6) below, or any other applicable method approved by the Executive Officer, United States Environmental Protection Agency (USEPA), and the California Air Resources Board (CARB).

(1) Determination of VOC content

The volatile organic content of coatings subject to the provisions of this rule shall be determined by the following methods:

(A) USEPA Reference Method 24 (Code of Federal Regulations Title 40 Part 60, Appendix A). The exempt solvent content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with paragraph (c), only when manufacturers specify which individual compounds are used in the coating formulation. In addition, the manufacturers must identify the USEPA, CARB, and the SCAQMD approved test methods used to quantify the amount of each exempt compound.

(2) Determination of the Acid Content of Pretreatment Coatings and Etching Fillers

The acid content of pretreatment coatings and etching fillers shall be measured by ASTM Test Method D1613.

(3) Determination of the Metal Particle Content of Metallic Coatings

The metal particle content of metallic coatings subject to the provisions of this rule shall be determined by the following methods:

(A) SCAQMD Method 318 (Determination of Weight Percent of Elemental Metal in Coatings by X-ray Defraction Method) contained in the SCAQMD "Laboratory Method of Analysis of Enforcement Samples" manual for coatings containing elemental aluminum metal; or

(B) SCAQMD Method 311 (Analysis of Percent Metal in Metallic Coatings by Spectrographic Method) contained in the SCAQMD "Laboratory Method of Analysis of Enforcement Samples" manual for all other non-aluminum particle content analyses.

(4) Determination of Efficiency of Emission Control System

(A) Capture efficiency specified in paragraph (c)(7), shall be determined by the procedures presented in the USEPA technical guidance document, "Guidelines for Determining Capture Efficiency, January 9, 1995." Notwithstanding the test methods specified by the Guidelines, any other method approved by the

USEPA, CARB, and the SCAQMD Executive Officer may be substituted.

(B) The efficiency of the control device of the emission control system as specified in paragraph (c)(7) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by the USEPA Test Methods 25, 25A, SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon), or SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources) as applicable. USEPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(5) Multiple Test Methods

When more than one test method or set of methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(6) Demonstrations of transfer efficiency shall be conducted in accordance with SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User," May 24, 1989.

(f) Exemptions

(1) The provisions of paragraphs (c)(1) and (c)(2) of this rule shall not apply to:

(A) Stencil coatings;

(B) Safety-indicating coatings;

(C) Magnetic data storage disk coatings;

(D) Solid-film lubricants;

(E) Electric-insulating and thermal-conducting coatings.

(2) The provisions of paragraph (c)(1) of this rule shall not apply to the application of touch-up coatings, repair coatings, and textured finishes. This exemption shall expire for the application of metallic coatings which have a metallic content of 30 grams per liter, mold seal coatings, and to facilities that use less than 3 gallons per day or less than 66 gallons per calendar month of coating, as applied, including an VOC containing

materials added to the original coating as supplied by the manufacturer, effective July 1, 2006.

(3) The provisions of paragraphs (c)(1), (c)(2), and (c)(3) of this rule do not apply to the application of coatings and use of cleaning solvents while conducting performance tests on the coatings at paint manufacturing facilities.

(4) The provisions of paragraph (c)(2) of this rule shall not apply to high-performance architectural, vacuum-metalizing, and/or pretreatment coatings used at a facility which has the potential to emit a total of 10 tons or less per year of VOCs, before application of add-on controls.

(5) The provisions of paragraph (c)(2) of this rule shall not apply to aerosol coating products.

(6) The provisions of paragraph (c)(2) of this rule shall not apply to the use of essential public service coatings provided such aggregate use does not exceed 55 gallons in any one calendar year per facility.

(7) The provisions of paragraph (c)(2) of this rule shall not apply to the use of optical anti-reflective coatings provided such aggregate use does not exceed 10 gallons in any one calendar year, per facility.

(8) The provisions of paragraph (c)(2) shall not apply to electrocoatings provided the VOC content of coating concentrates do not exceed 450 grams per liter, less water and less exempt compounds, and the usage of coating concentrates is less than 66 gallons per calendar month, per facility, including any VOC-containing materials added to the concentrate, as supplied by the manufacturer, and any VOC-containing materials added to the bath as make-up solvents.

(9) The provisions of paragraph (c)(2) shall not apply to photoresist operations applying liquid photoresist coating used for photofabrication of metal substrates with a thickness not exceeding 0.060 inches provided the annual usage per facility is 10 gallons or less.

(g) Rule 442 Applicability

Any coating, coating operation, or facility which is exempt from all or a portion of the VOC limits of this rule shall comply with the provisions of Rule 442.

(h) Alternative Emission Control Plan

An owner/operator may achieve compliance with paragraph (c)(2) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(i) Qualification for Classification as Extreme-Performance Coating

A coating may be classified as an extreme-performance coating provided that the applicator requests and receives written approval of such classification from the Executive Officer, or designee, prior to application of such coating, and shows that the intended use of each coated object would require coating with an extreme-performance coating.

(j) Recordkeeping

Records of coating and solvent usage shall be maintained pursuant to Rule 109.

(k) Emission Reduction Credits

Facilities that use high-performance architectural, pretreatment, or vacuum-metalizing coatings shall not receive emission reduction credit(s) pursuant to SCAQMD Rule 1309 above those emission reduction credit(s) that the facility would have received if it was operated with coatings having a VOC content of no more than 420 grams per liter, less water and less exempt compounds.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted May 4, 1979)(Amended December 4, 1981)

(Amended November 4, 1983)(Amended February 1, 1985)

RULE 1108. CUTBACK ASPHALT

(a) Definitions

For the purpose of this rule, cutback asphalt is a liquid petroleum product produced by fluxing an asphaltic base with suitable distillate and is classed as medium or slow curing grade, as defined in Section 93 of the January 1981, State of California Department of Transportation Standard Specifications.

(b) Requirements

A person shall not sell or offer for sale for use in the District, or use any cutback asphalt containing more than 0.5 percent by volume organic compounds which evaporate at 260^{o}C (500^{o}F) or lower as determined by ASTM Method D402 (AASHTO T78) or other test method as approved by the Executive Officer.

(c) Exemptions

The provisions of this rule shall not apply to the use of cutback asphalt that is subject to the provisions of other Regulation XI rules, or specifically exempted in such rules.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted August 3, 1979)(Amended December 4, 1981)

(Amended November 4, 1983)

RULE 1108.1. EMULSIFIED ASPHALT

(a) Definitions

For the purpose of this rule, emulsified asphalt is a liquid petroleum product produced by fluxing an asphaltic base with water and an emulsifier, and is classed as rapid, medium, or slow setting grade as described under Section 94 of the January 1981, State of California Department of Transportation Standard Specifications.

(b) Requirements

A person shall not sell or offer for sale for use in the District, or use any emulsified asphalt containing organic compounds which evaporate at 260^{o}C (500^{o}F) or lower as determined by ASTM Method D244 (AASHTO T59), or other test method as approved by the Executive Officer, in excess of:

(A) Effective January 1, 1982:

(i) Slow setting type, three percent by volume

(ii) Rapid setting type, three percent by volume

(B) Before January 1, 1987:

(i) Medium setting type for use with dense graded aggregate, eight percent by volume.

(ii) Medium setting type for use with dense graded aggregate, 12 percent by volume.

(C) On and after January 1, 1987:

(i) Medium setting type for use with any aggregate, three percent by volume.

(c) Exemptions

The provisions of this rule shall not apply to the use of emulsified asphalt that is subject to other Regulation XI rules, or specifically exempted in such rules.

(Adopted August 3, 1990)(Amended September 7, 1990)(Amended August 12, 1994)
(Amended December 9, 1994)(Amended November 14, 1997)
(Amended June 3, 2005)(Amended February 1, 2008)

RULE 1110.2 EMISSIONS FROM GASEOUS- AND LIQUID-FUELED ENGINES

(a) Purpose

The purpose of Rule 1110.2 is to reduce Oxides of Nitrogen (NO_x), Volatile Organic Compounds (VOCs), and Carbon Monoxide (CO) from engines.

(b) Applicability

All stationary and portable engines over 50 rated brake horsepower (bhp) are subject to this rule.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AGRICULTURAL STATIONARY ENGINE is a non-portable engine used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. An engine used for the processing or distribution of crops or fowl or animals is not an agricultural engine.

(2) APPROVED EMISSION CONTROL PLAN is a control plan, submitted on or before December 31, 1992, and approved by the Executive Officer prior to November 14, 1997, that was required by subdivision (d) of this rule as amended September 7, 1990.

(3) CERTIFIED SPARK-IGNITION ENGINES mean engines certified by California Air Resources Board (CARB) to meet emission standards in accordance with Title 13, Chapter 9, Article 4.5 of the California Code of Regulations (CCR).

(4) EMERGENCY STANDBY ENGINE is an engine which operates as a temporary replacement for primary mechanical or electrical power during periods of fuel or energy shortage or while the primary power supply is under repair.

(5) ENGINE is any spark- or compression-ignited internal combustion engine, including engines used for control of VOCs, but not including engines used for self-propulsion.

(6) EXEMPT COMPOUNDS are defined in District Rule 102 - Definition of Terms.

(7) FACILITY means any source or group of sources or other air contaminant emitting activities which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in Section 55.2 of Title 40, Part 55 of the Code of Federal Regulations (40 CFR Part 55). Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility. Sources or installations involved in crude oil and gas production in Southern California Coastal or OCS Waters and transport of such crude oil and gas in Southern California Coastal or OCS Waters shall be included in the same facility which is under the same ownership or use entitlement as the crude oil and gas production facility on-shore.

(8) LEAN-BURN ENGINE means an engine that operates with high levels of excess air and an exhaust oxygen concentration of greater than 4 percent.

(9) LOCATION means any single site at a building, structure, facility, or installation. For the purpose of this definition, a site is a space occupied or to be occupied by an engine. For engines which are brought to a facility to perform maintenance on equipment at its permanent or ordinary location, each maintenance site shall be a separate location.

(10) NET ELECTRICAL ENERGY means the electrical energy produced by a generator, less the electrical energy consumed by any auxiliary equipment necessary to operate the engine generator and, if applicable, any heat recovery equipment, such as heat exchangers.

(11) NON-ROAD ENGINE is any engine, defined under 40 CFR Part 89, that does not remain or will not remain at a location for more than 12 consecutive months, or a shorter period of time where such period is representative of normal annual source operation at a stationary source that resides at a fixed location for more than 12 months (e.g., seasonal operations such as canning facilities), and meets one of the following:

(A) Is used in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as a mobile crane); or

(B) Is used in or on a piece of equipment that is intended to be propelled while performing its function (such as lawn mowers and string trimmers); or

(C) By itself, or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Transportability includes, but is not limited to, wheels, skids, carrying handles, dolly, trailer, platform or mounting.

(12) OPERATING CYCLE means a period of time within which a round of regularly recurring events is completed, and cannot be stopped without the risk of endangering public safety or health, causing material damage to the equipment or product, or cannot be stopped due to technical constraints. Economic reasons alone will not be sufficient to extend this time period. The operating cycle includes batch processes that may start and finish several times within a twenty-four hour period, in which case each start to finish interval is considered a complete cycle.

(13) OXIDES OF NITROGEN (NOx) means nitric oxide and nitrogen dioxide.

(14) PORTABLE ENGINE is an engine that, by itself or in or on a piece of equipment, is designed to be and capable of being carried or moved from one location to another. Indications of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, platform or mounting. The operator must demonstrate the necessity of the engine being periodically moved from one location to another because of the nature of the operation.

An engine is not portable if:

(A) the engine or its replacement remains or will reside at the same location for more than 12 consecutive months. Any engine, such as a back-up or stand-by engine, that replaces an engine at a location and is intended to perform the same function as the engine being replaced, will be included in calculating the consecutive time period. In that case, the cumulative time of both engines, including the time between the removal of the original engine and installation of the replacement engine, will be counted toward the consecutive time period; or

(B) the engine remains or will reside at a location for less than 12 consecutive months where such a period represents the full length of normal annual source operations such as a seasonal source; or

(C) the engine is removed from one location for a period and then it or its equivalent is returned to the same location thereby circumventing the portable engine residence time requirements.

The period during which the engine is maintained at a designated storage facility shall be excluded from the residency time determination.

(15) RATED BRAKE HORSEPOWER (bhp) is the rating specified by the manufacturer, without regard to any derating, and listed on the engine nameplate.

(16) RICH-BURN ENGINE WITH A THREE-WAY CATALYST means an engine designed to operate near stoichiometric conditions with a catalytic control device that simultaneously reduces emissions of NOx, CO and VOC.

(17) STATIONARY ENGINE is an engine which is either attached to a foundation or if not so attached, does not meet the definition of a portable or non-road engine and is not a motor vehicle as defined in Section 415 of the California Vehicle Code.

(18) TIER 2 AND TIER 3 DIESEL ENGINES mean engines certified by CARB to meet Tier 2 or Tier 3 emission standards in accordance with Title 13, Chapter 9, Article 4 of the CCR.

(19) USEFUL HEAT RECOVERED means the waste heat recovered from the engine exhaust and/or cooling system that is put to productive use. The waste heat recovered may by assumed to be 100% useful unless the hot water, steam or other medium is vented to the atmosphere, or sent directly to a cooling tower or other unproductive use.

(20) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(d) Requirements

(1) Stationary Engines:

(A) Operators of stationary engines with an amended Rule 1110.1 Emission Control Plan submitted by July 1, 1991, or an Approved Emission Control Plan, designating the permanent removal of engines or the replacement of engines with electric motors, in accordance with subparagraph (d)(1)(B), shall do so by December 31, 1999, or not

operate the engines on or after December 31, 1999 in a manner that exceeds the emission concentration limits listed in Table I:

TABLE I ALTERNATIVE TO ELECTRIFICATION CONCENTRATION LIMITS		
NO_x	VOC	CO
(ppmvd)[1] 11	(ppmvd)[2] 30	(ppmvd)[1] 70

[1] Parts per million by volume, corrected to 15% oxygen on a dry basis and averaged over 15 minutes.

[2] Parts per million by volume, measured as carbon, corrected to 15% oxygen on a dry basis and averaged over the sampling time required by the test method.

(B) The operator of any other stationary engine subject to this rule shall

(i) Remove such engine permanently from service or replace the engine with an electric motor, or

(ii) Not operate the engine in a manner that exceeds the emission concentration limits listed in Table II.

TABLE II CONCENTRATION LIMITS		
NO_x (ppmvd)[1]	VOC (ppmvd)[2]	CO (ppmvd)[1]
bhp = 500: 36 bhp < 500: 45	250	2000
CONCENTRATION LIMITS EFFECTIVE JULY 1, 2010		
NO_x (ppmvd)[1]	VOC (ppmvd)[2]	CO (ppmvd)[1]
bhp = 500: 11 bhp < 500: 45	bhp = 500: 30 bhp < 500: 250	bhp = 500: 250 bhp < 500: 2000

CONCENTRATION LIMITS EFFECTIVE JULY 1, 2011		
NO_x (ppmvd)[1]	VOC (ppmvd)[2]	CO (ppmvd)[1]
11	30	250

[1] Parts per million by volume, corrected to 15% oxygen on a dry basis and averaged over 15 minutes.

[2] Parts per million by volume, measured as carbon, corrected to 15% oxygen on a dry basis and averaged over the sampling time required by the test method.

The concentration limits effective on and after July 1, 2010 shall not apply to engines that operate less than 500 hours per year or use less than 1 x 10^9 British Thermal Units (Btus) per year (higher heating value) of fuel.

If the operator of a two-stroke engine equipped with an oxidation catalyst and insulated exhaust ducts and catalyst housing demonstrates that the CO and VOC limits effective on and after July 1, 2010 are not achievable, then the Executive Officer may, with United States Environmental Protection Agency (EPA) approval, establish technologically achievable, case-by-case CO and VOC limits in place of the concentration limits effective on and after July 1, 2010. The case-by-case limits shall not exceed 250 ppmvd VOC and 2000 ppmvd CO.

If the operator of an engine that uses non-pipeline quality natural gas demonstrates that due to the varying heating value of the gas a longer averaging time is necessary, the Executive Officer may establish for the engine a longer averaging time, not to exceed six hours, for any of the concentration limits of Table II. Non-pipeline quality natural gas is a gas that does not meet the gas specifications of the local gas utility and is not supplied to the local gas utility.

(C) Notwithstanding the provisions in subparagraph (d)(1)(B), the operator of any stationary engine fired by landfill or digestor gas (biogas) shall not operate the engine in a manner that exceeds the emission concentration limits of Table III, provided that the facility monthly average biogas

usage by the biogas engines is 90% or more, based on the higher heating value of the fuels used. The calculation of the monthly facility biogas use percentage may exclude natural gas fired during: any electrical outage at the facility; a Stage 2 or higher electrical emergencies called by the California Independent System Operator Corporation; and when a sewage treatment plant activates an Emergency Operations Center or Incident Command System, as part of an emergency response plan, because of either high influent flows caused by precipitation or a disaster.

The concentration limits effective on and after July 1, 2012 shall become effective provided the Executive Officer conducts a technology assessment that confirms that the limits are achievable, and reports to the Governing Board by July 2010, at a regularly scheduled public meeting.

The concentration limits effective on and after July 1, 2012 shall not apply to engines that operate less than 500 hours per year or use less than 1 x 10^9 Btus per year (higher heating value) of fuel.

TABLE III CONCENTRATION LIMITS FOR LANDFILL AND DIGESTOR GAS-FIRED ENGINES		
NO_x (ppmvd)[1]	VOC (ppmvd)[2]	CO (ppmvd)[1]
bhp = 500: 36 x ECF[3] bhp < 500: 45 x ECF[3]	Landfill Gas: 40 Digestor Gas: 250 x ECF[3]	2000
CONCENTRATION LIMITS EFFECTIVE JULY 1, 2012		
NO_x (ppmvd)[1]	VOC (ppmvd)[2]	CO (ppmvd)[1]
11	30	250

[1] Parts per million by volume, corrected to 15% oxygen on a dry basis and averaged over 15 minutes.

[2] Parts per million by volume, measured as carbon, corrected to 15% oxygen on a dry basis and averaged over the sampling time required by the test method.

[3] ECF is the efficiency correction factor.

The ECF shall be 1.0 unless:

(i) The engine operator has measured the engine's net specific energy consumption (q_a), in compliance with ASME Performance Test Code PTC 17 -1973, at the average load of the engine; and

(ii) The ECF-corrected emission limit is made a condition of the engine's permit to operate.

The ECF is as follows:

$$ECF = \frac{9250 \text{ Btus/hp-hr}}{\text{Measured } q_a \text{ in Btus/hp-hr}}$$

Measured q_a shall be based on the lower heating value of the fuel. ECF shall not be less than 1.0.

The Executive Officer may approve the burning of more than 10% natural gas in a landfill or digestor gas-fired engine, when it is necessary, if: the only alternative to limiting natural gas to 10% would be shutting down the engine and flaring more landfill or digestor gas; or the engine requires more natural gas in order for a waste heat recovery boiler to provide enough thermal energy to operate a sewage treatment plant, and other boilers at the facility are unable to provide the necessary thermal energy.

Once an engine complies with concentration limits effective on and after July 1, 2012, there shall be no limit on the percentage of natural gas burned.

(D) The operator of any new engine subject to subparagraph (e)(1)(B) shall:

(i) Comply with the requirements of Best Available Control Technology in accordance with Regulation XIII if the engine requires a District permit; or

(ii) Not operate the engine in a manner that exceeds the emission concentration limits in Table I if the engine does not require a District permit.

(E) By February 1, 2009, the operator of a spark-ignited engine without a Rule 218-approved continuous emission monitoring system (CEMS) or a Regulation XX (RECLAIM)-approved CEMS shall equip and maintain the engine with an air-to-fuel ratio controller with an oxygen sensor and feedback control, or other equivalent technology approved by the Executive Officer, CARB and EPA.

(F) New Non-Emergency Electrical Generators

(i) All new non-emergency engines driving electrical-generators shall comply with the following emission standards:

TABLE IV EMISSION STANDARDS FOR NEW ELECTRICAL GENERATION ENGINES	
Pollutant	**Emission Standard (lbs/MW-hr)[1]**
NOx	0.070
CO	0.20
VOC	0. 10[2]

1. The averaging time of the emission standards is 15 minutes for NOx and CO and the sampling time required by the test method for VOC, except as described in the following clause.
2. Mass emissions of VOC shall be calculated using a ratio of 16.04 pounds of VOC per lb-mole of carbon.

(ii) Engines subject to this subparagraph that produce combined heat and electrical power may include one megawatt-hour (MW-hr) for each 3.4 million Btus of useful heat recovered (MW_{th}-hr), in addition to each MW-hr of net electricity produced (MW_e-hr). The compliance of such engines shall be based on the following equation:

$$\frac{\text{Lbs}}{\text{MW-hr}} = \frac{\text{Lbs}}{MW_e\text{-hr}} \times \text{Electrical Energy Factor (EEF)}$$

Where:

Lbs/MW-hr = The calculated emissions that shall comply with the emission standards in Table IV

Lbs/MW_e-hr = The short-term engine emission limit in pounds per MW_e-hr of net electrical energy produced, averaged over 15 minutes. The engine shall comply with this limit at all times.

EEF = The annual MW_e-hrs of net electrical energy produced divided by the sum of

annual MW_e-hrs plus annual MW_{th}-hrs of useful heat recovered. The engine operator shall demonstrate annually that the EEF is less than the value required for compliance.

(iii) For combined heat and power engines, the short-term emission limits in lbs/MW_e-hr and the maximum allowed annual EEF must be selected by operator and stated on the operating permit.

(iv) Notwithstanding Rule 2001, the requirements of this subparagraph shall apply to NOx emissions from new non-emergency engines driving electrical-generators subject to Regulation XX (RECLAIM).

(v) This subparagraph does not apply to: engines installed prior to February 1, 2008; engines issued a permit to construct prior to February 1, 2008 and installed within 12 months of the date of the permit to construct; engines for which an application is deemed complete by October 1, 2007; engines installed by an electric utility on Santa Catalina Island; engines installed at remote locations without access to natural gas and electric power; engines used to supply electrical power to ocean-going vessels while at berth, prior to January 1, 2014; or landfill or digestor gas-fired engines that meet the requirements of subparagraph (d)(1)(C).

(2) Portable Engines:

(A) The operator of any portable engine generator subject to this rule shall not use the portable generator for:

(i) Power production into the electric grid, except to maintain grid stability during an emergency event or other unforeseen event that affects grid stability; or

(ii) Primary or supplemental power to a building, facility, stationary source, or stationary equipment, except during unforeseen interruptions of electrical power from the serving utility, maintenance and repair operations, and remote operations where grid power is unavailable. For interruptions of electrical

power, the operation of a portable generator shall not exceed the time of the actual interruption of power.

This subparagraph shall not apply to a portable generator that complies with emission concentration limits of Table I and the other requirements in this rule applicable to stationary engines.

(B) The operator of any portable diesel engine shall comply with the applicable requirements of the Subchapter 7.5 Airborne Toxic Control Measures for diesel particulate matter in Chapter 1, Division 3, Title 17 of the California Code of Regulations.

(C) The operator of any portable spark-ignited engine shall comply with the applicable requirements of the Large Spark Ignition Engine Fleet Requirements, Article 2, Chapter 15, Division 3, Title 13 of the California Code of Regulations.

(e) Compliance

(1) Agricultural Stationary Engines:

(A) The operator of any agricultural stationary engine subject to this rule and installed or issued a permit to construct prior to June 3, 2005 shall comply with paragraph (d)(1)(B) and the other applicable provisions of this rule in accordance with the compliance schedules in Table V:

TABLE V
COMPLIANCE SCHEDULES FOR STATIONARY AGRICULTURAL ENGINES

Action Required	**Tier 2 and Tier 3 Diesel Engines, Certified Spark-Ignition Engines, and All Engines at Facilities with Actual Emissions Less Than the Amounts in the Table of Rule 219(q)**	**Other Engines**
Submit notification of applicability to the Executive Officer	January 1, 2006	January 1, 2006
Submit to the Executive Officer applications for permits to construct engine modifications, control equipment, or replacement engines	March 1, 2009	September 1, 2007

Initiate construction of engine modifications, control equipment, or replacement engines	September 30, 2009, or 30 days after the permit to construct is issued, whichever is later	March 30, 2008, or 30 days after the permit to construct is issued, whichever is later
Complete construction and comply with applicable requirements	January 1, 2010, or 60 days after the permit to construct is issued, whichever is later	July 1, 2008, or 60 days after the permit to construct is issued, whichever is later
Complete initial source testing	March 1, 2010, or 120 days after the permit to construct is issued, whichever is later	September 1, 2008, or 120 days after the permit to construct is issued, whichever is later

The notification of applicability shall include the following for each engine:

(i) Name and mailing address of the operator

(ii) Address of the engine location

(iii) Manufacturer, model, serial number, and date of manufacture of the engine

(iv) Application number

(v) Engine type (diesel, rich-burn spark-ignition or lean-burn spark-ignition)

(vi) Engine fuel type

(vii) Engine use (pump, compressor, generator, or other)

(viii) Expected means of compliance (engine replacement, control equipment installation, or electrification)

(B) The operator of any new agricultural stationary engine that is not subject to the compliance schedule of subparagraph (e)(1)(A) for existing engines shall comply with the requirements of subparagraph (d)(1)(D) immediately upon installation.

(2) Non-Agricultural Stationary Engines:

(A) The operator of any stationary engine not meeting the requirements of subparagraphs (d)(1)(B) or (d)(1)(C) that go into effect in 2010 or later, shall comply with the compliance schedule in Table VI:

TABLE VI
COMPLIANCE SCHEDULE FOR NON -AGRICULTURAL STATIONARY ENGINES

Action Required	Applicable Compliance Date
Submit to the Executive Officer applications for permits to construct engine modifications, control equipment, or replacement engines	Twelve months before the final compliance date
Initiate construction of engine modifications, control equipment, or replacement engines	Three months before the final compliance date, or 60 days after the permit to construct is issued, whichever is later
Complete construction and comply with applicable requirements	The final compliance date, or 120 days after the permit to construct is issued, whichever is later
Complete initial source testing	60 days after the final compliance date in (d)(1)(B) or (d)(1)(C), or 180 days after the permit to construct is issued, whichever is later

(B) The operator of any stationary engine that elects to amend a permit to operate to incorporate ECF-adjusted emission limits shall submit to the Executive Officer an application for a change of permit conditions by August 1, 2008, and comply with emission limits of the previous version of this rule until February 1, 2009 when the engine shall be in compliance with the emission limits of this rule.

(C) The operator of any stationary engine that is required to add operating restrictions to a permit to operate to meet the requirements of this rule

shall submit to the Executive Officer an application for a change of permit conditions by August 1, 2008.

(3) Stationary Engine CEMS

(A) The operator of any stationary engine with an existing CEMS shall commence the reporting required by Rule 218 Subdivision (f) on January 1, 2008. The first summary report for the six months ending June 30, 2008 shall be due on July 30, 2008.

(B) The operator of any stationary engine that is required to modify an existing CEMS or install a CEMS on an existing engine shall comply with the compliance schedule in Table VII. Public agencies shall be allowed one year more than the dates in Table VII, except for biogas engines.

TABLE VII
COMPLIANCE SCHEDULE FOR NEW OR MODIFIED CEMS
ON EXISTING ENGINES

Action Required	Applicable Compliance Dates For:		
	Non-Biogas Engines Rated at 750 bhp or More	**Non-Biogas Engines Rated at Less than 750 bhp**	**Biogas Engines***
Submit to the Executive Officer applications for new or modified CEMS	August 1, 2008	August 1, 2009	January 1, 2011
Complete installation and commence CEMS operation, calibration, and reporting requirements	Within 180 days of initial approval	Within 180 days of initial approval	Within 180 days of initial approval
Complete certification tests	Within 90 days of installation	Within 90 days of installation	Within 90 days of installation
Submit certification reports to Executive Officer	Within 45 days after tests are completed	Within 45 days after tests are completed	Within 45 days after tests are completed
Obtain final approval of CEMS	Within 1 year of initial approval	Within 1 year of initial approval	Within 1 year of initial approval

* A biogas engine is one that is subject to the emission limits of Table III.

(4) Stationary Engine Inspection and Monitoring (I&M) Plans:

The operator of stationary engines subject to the I&M plan provisions of subparagraph (f)(1)(D) shall:

(A) By August 1, 2008, submit an initial I&M plan application to the Executive Officer for approval;

(B) By December 1, 2008, implement an approved I&M plan or the I&M plan as submitted if the plan is not yet approved.

Any operator of 15 or more stationary engines subject to the I&M plan provisions shall comply with the above schedule for at least 50% of engines, and for the remaining engines shall:

(C) By February 1, 2009, submit an initial I&M plan application to the Executive Officer for approval;

(D) By June 1, 2009, implement an approved I&M plan or the I&M plan as submitted if the plan is not yet approved.

(5) Stationary Engine Air-to-Fuel Ratio Controllers

(A) The operator of any stationary engine that does not have an air-to-fuel ratio controller, as required by subparagraph (d)(1)(E), shall comply with those requirements in accordance with the compliance schedule in Table VI, except that the application due date is no later than May 1, 2008 and the initial source testing may be conducted at the time of the testing required by subparagraph (f)(1)(C).

(B) The operator of any stationary engine that has the air-to-fuel ratio controller required by subparagraph (d)(1)(E), but it is not listed on the permit to operate, shall submit to the Executive Officer an application to amend the permit by April 1, 2008.

(C) The operator of more than five engines that do not have air-to-fuel ratio controllers may take an additional three months, to May 1, 2009, to install the equipment on up to 50% of the affected engines.

(6) New Stationary Engines

The operator of any new stationary engine issued a permit to construct after February 1, 2008 shall comply with the applicable I&M or CEMS requirements of this rule when operation commences. If applicable, the operator shall provide the required information in subparagraph (f)(1)(D) to the Executive Officer prior to the issuance of the permit to construct so that the I&M procedures can be included in the permit. A separate I&M plan application is not required.

(7) Biogas Engines

For any biogas engine for which the operator applies to the Executive Officer by April 1, 2008 for a change of permit conditions for ECF-corrected emission limits, or the approval to burn more than 10 percent natural gas in accordance with subparagraph (d)(1)(C), the biogas engine shall not be subject to the initial concentration limits of Tables II or III until August 1, 2008, provided the operator continues to comply with all emission limits in effect prior to February 1, 2008.

(8) Compliance Schedule Exception

If an engine operator submits to the Executive Officer an application for an administrative change of permit conditions to add a permit condition that causes the engine permit to expire by the effective date of any requirement of this rule, then the operator is not required to comply with the earlier steps required by this subdivision for that requirement. The effective date for the CEMS requirements shall be one year after the date that a CEMS application is due.

(9) Exceedance of Usage Limits

(A) If an engine was initially exempt from the new concentration limits in subparagraph (d)(1)(B) or subparagraph (d)(1)(C) that take effect on or after July 1, 2010 because of low engine use but later exceeds the low-use criteria, the operator shall bring the engine into compliance with the rule in accordance with the schedule in Table VI with the final compliance date in Table VI being twelve months after the conclusion of the first twelve-month period for which the engine exceeds the low-use criteria.

(B) If engines that were initially exempt from new CEMS by the low-use criterion in subclause (f)(1)(A)(ii)(I) later exceed that criterion, the operator shall install CEMS on those engines in accordance with the schedule in Table VII, except that the date for submitting the CEMS application in Table VII shall be six months after the conclusion of the first twelve-month period for which the engines exceed the criterion.

(f) Monitoring, Testing, Recordkeeping and Reporting

(1) Stationary engines:

The operator of any engine subject to the provisions of paragraph (d)(1) of this rule shall meet the following requirements:

(A) Continuous Emission Monitoring

(i) For engines of 1000 bhp and greater and operating more than two million bhp-hr per calendar year, a NO_x and CO continuous emission monitoring system (CEMS) shall be installed, operated and maintained in calibration to demonstrate compliance with the emission limits of this rule.

(ii) (I) For facilities with engines subject to paragraph (d)(1), having a combined rating of 1500 bhp or greater at the same location, and having a combined fuel usage of more than 16×10^9 Btus per year (higher heating value), CEMS shall be installed, operated and maintained in calibration to demonstrate compliance of those engines with the applicable NO_x and CO emission limits of this rule.

(II) Any engine that as of October 1, 2007 is located within 75 feet of another engine (measured from engine block to engine block) is considered to be at the same location. Operators of new engines shall not install engines farther than 75 feet from another engine unless the operator demonstrates to the Executive Officer that operational needs or space limitations require it.

(III) The following engines shall not be counted toward the combined rating or required to have a CEMS by this clause: engines rated at less than 500 bhp; standby engines that are limited by permit conditions to only operate when other primary engines are not operable; engines that are limited by permit conditions to operate less than 1000 hours per year or a fuel usage of less than 8×10^9 Btus per year (higher heating value of all fuels used); engines that are used primarily to fuel public natural gas transit vehicles and that are required by a

permit condition to be irreversibly removed from service by December 31, 2014; and engines required to have a CEMS by the previous clause. A CEMS shall not be required if permit conditions limit the simultaneous use of the engines at the same location in a manner to limit the combined rating of all engines in simultaneous operation to less than 1500 bhp.

(IV) For engines rated below 1000 bhp, the CEMS may be time shared by multiple engines.

(V) Operation of engines by the electric utility in the Big Bear Lake area during the failure of a transmission line to the utility may be excluded from an hours-per-year or fuel usage limit that is elected by the operator pursuant to subclause (f)(1)(A)(ii)(III).

(VI) In lieu of complying with subclause (f)(1)(A)(ii)(I), an operator that is a public agency, or is contracted to operate engines solely for a public agency, may comply with the Inspection and Monitoring Plan requirements of subparagraph (f)(1)(D), except that the operator shall conduct emission checks at least weekly or every 150 operating hours, whichever occurs later. If any such engine is found to exceed an applicable NOx or CO limit by a source test required by subparagraph (f)(1)(C) or District test using a portable analyzer on three or more occasions in any 12-month period, the operator shall comply with the CEMS requirements of this subparagraph for such engine in accordance with the compliance schedule of Table VII, except that the operator shall submit a CEMS application to the Executive Officer within six months of the third exceedance.

(iii) All CEMS required by this rule shall:

(I) Comply with the applicable requirements of Rule 218, including equipment specifications and certification, operating, recordkeeping, quality assurance and

reporting requirements, except as otherwise authorized by this rule;

(II) Include equipment that measures and records exhaust gas concentrations, both uncorrected and corrected to 15 percent oxygen on a dry basis; and

(III) Have data gathering and retrieval capability approved by the Executive Officer

(iv) The operator of an engine that is required to install CEMS may request the Executive Officer to approve an alternative monitoring device (or system components) to demonstrate compliance with the emission limits of this rule. The applicant shall demonstrate to the Executive Officer that the proposed alternative monitoring device is at a minimum equivalent in relative accuracy, precision, reliability, and timeliness to a CEMS for that engine, according to the criteria specified in 40 CFR Part 75 Subpart E. In lieu of the criteria specified in 40 CFR Part 75 Subpart E, substitute criteria is acceptable if the applicant demonstrates to the Executive Officer that the proposed alternative monitoring device is at minimum equivalent in relative accuracy, precision, reliability, and timeliness to a CEMS for that engine. Upon approval by the Executive Officer, the substitute criteria shall be submitted to EPA as an amendment to the State Implementation Plan (SIP).

If the alternative monitoring device is denied or fails to be recertified, a CEMS shall be required.

(v) Notwithstanding the requirements of Rules 218 and 218.1, operators of engines that are required to install a CEMS by clause (ii) of this subparagraph may:

(I) Store data electronically without a strip chart recorder, but there shall be redundant data storage capability for at least 15 days of data. The operator must demonstrate that both sets of data are equivalent.

(II) Conduct relative accuracy testing on the same schedule for source testing in clause (f)(1)(C)(i), instead of

annually. The minimum sampling time for each test is 15 minutes.

(vi) Notwithstanding the requirements of Rules 218 and 218.1, operators of engines that are required to install a CEMS by clause (ii) of this subparagraph, and that are to be monitored by a timeshared CEMS, may:

(I) Monitor an engine with the CEMS for 15 consecutive minutes, purge for the minimum required purge time, then monitor the next engine for 15 consecutive minutes. The CEMS shall operate continuously in this manner, except for required calibrations.

(II) Record the corrected and uncorrected NOx, CO and diluent data at least once per minute and calculate and record the 15-minute average corrected concentrations for each sampling period.

(III) Have sample lines to each engine that are not the same length. The purge time will be based on the sample line with the longest response time. Response times shall be checked during cylinder gas audits. Sample lines shall not exceed 100 feet in length.

(IV) Conduct a minimum of five tests for each engine during relative accuracy tests.

(V) Perform a cylinder gas audit every calendar quarter on each engine, except for engines for which relative accuracy testing was conducted that quarter.

(VI) Exclude monitoring of nitrogen dioxide (NO_2) for rich-burn engines, unless source testing demonstrates that NO_2 is more than 10 percent of total NOx.

(VII) Conduct daily calibration error (CE) tests by injecting calibration gases at the analyzers, except that at least once per week the CE test shall be conducted by injecting calibration gases as close to the probe tip as practical.

(VIII) Stop operating and calibrating the CEMs during any period that the operator has a continuous record that the engine was not in operation.

(vii) A CO CEMS shall not be required for lean-burn engines or an engine that is subject to Regulation XX (RECLAIM), and not required to have a NOx CEMS by that regulation.

(viii) Notwithstanding the requirements of this paragraph and paragraph (c)(2) of Rule 2012, an operator may take an existing NOx CEMS out of service for up to two weeks (cumulative) in order to modify the CEMS to add CO monitoring.

(B) Elapsed Time Meter

Maintain an operational non-resettable totalizing time meter to determine the engine elapsed operating time.

(C) Source Testing

(i) Effective August 1, 2008, conduct source testing for NO_x, VOC reported as carbon, and CO concentrations (concentrations in ppm by volume, corrected to 15 percent oxygen on dry basis) at least once every two years, or every 8,760 operating hours, whichever occurs first. Relative accuracy tests required by Rule 218.1 or 40 CFR Part 75 Subpart E will satisfy this requirement for those pollutants monitored by a CEMS. The source test frequency may be reduced to once every three years if the engine has operated less than 2,000 hours since the last source test. If the engine has not been operated within three months of the date a source test is required, the source test shall be conducted when the engine resumes operation for a period longer than either seven consecutive days or 15 cumulative days of operation. The operator of the engine shall keep sufficient operating records to demonstrate that it meets the requirements for extension of the source testing deadlines.

(ii) Conduct source testing for at least 30 minutes during normal operation (actual duty cycle). This test shall not be conducted under a steady-state condition unless it is the normal operation. In addition, conduct source testing for NOx and CO emissions for at least 15 minutes at: an engine's actual peak load, or the maximum load that can be practically achieved during the test, and; at actual minimum load, excluding idle, or the minimum

load that can be practically achieved during the test. These additional two tests are not required if the permit limits the engine to operating at one defined load, ± 10%. No pre-tests for compliance are permitted. The emission test shall be conducted at least 40 operating hours, or at least 1 week, after any engine servicing or tuning. If an emission exceedance is found during any of the three phases of the test, that phase shall be completed and reported. The operator shall correct the exceedance, and the source test may be immediately resumed.

(iii) Use a contractor to conduct the source testing that is approved by the Executive Officer under the Laboratory Approval Program for the necessary test methods.

(iv) Submit a source test protocol to the Executive Officer for written approval at least 60 days before the scheduled date of the test. The source test protocol shall include the name, address and phone number of the engine operator and a District-approved source testing contractor that will conduct the test, the application and permit number(s), emission limits, a description of the engine(s) to be tested, the test methods and procedures to be used, the number of tests to be conducted and under what loads, the required minimum sampling time for the VOC test, based on the analytical detection limit and expected VOC levels, and a description of the parameters to be measured in accordance with the I&M plan required by subparagraph (f)(1)(D). The source test protocol shall be approved by the Executive Officer prior to any testing. The operator is not required to submit a protocol for approval if: there is a previously approved protocol that meets these requirements; the engine has not been altered in a manner that requires a permit alteration; and emission limits have not changed since the previous test. If the operator submits the protocol by the required date, and the Executive Officer takes longer than 60 days to approve the protocol, the operator shall be allowed the additional time needed to conduct the test.

(v) Provide the Executive Officer at least 30 days prior notice of any source test to afford the Executive Officer the opportunity

to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the engine operator shall notify the Executive Officer as soon as possible of any delay in the original test date, either by providing at least seven days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Executive Officer by mutual agreement.

(vi) Submit all source test reports, including a description of the equipment tested, to the Executive Officer within 60 days of completion of the test.

(vii) By February 1, 2009, provide, or cause to be provided, source testing facilities as follows:

(I) Sampling ports adequate for the applicable test methods. This includes constructing the air pollution control system and stack or duct such that pollutant concentrations can be accurately determined by applicable test methods;

(II) Safe sampling platform(s), scaffolding or mechanical lifts, including safe access, that comply with California General Safety Orders. Agricultural stationary engines are excused from this subclause if they are in remote locations without electrical power;

(III) Utilities for sampling and testing equipment. Agricultural stationary engines are exempt from this subclause if they are on wheels and moved to storage during the off season.

(D) Inspection and Monitoring (I&M) Plan

Submit to the Executive Officer for written approval and implement an I&M plan. One plan application is required for each facility. The I&M plan shall include:

(i) Identification of engine and control equipment operating parameters necessary to maintain pollutant concentrations within the rule and permit limits. This shall include, but not be limited to:

(I) Procedures for using a portable NOx, CO and oxygen analyzer to establish the set points of the air-to-fuel ratio controller (AFRC) at 25%, 60% and 95% load (or fuel flow rate), ± 5%, or the minimum, midpoint and maximum loads that actually occur during normal operation, ± 5%, or at any one load within the ± 10% range that an engine permit is limited to in accordance with clause (f)(1)(C)(ii);

(II) Procedures for verifying that the AFRC is controlling the engine to the set point during the daily monitoring required by clause (f)(1)(D)(iv);

(III) Procedures for reestablishing all AFRC set points with a portable NOx, CO and oxygen analyzer whenever a set point must be readjusted, within 24 hours of an oxygen sensor replacement, and, for rich-burn engines with three way catalysts, between 100 and 150 engine operating hours after an oxygen sensor replacement;

(IV) For engines with catalysts, the maximum allowed exhaust temperature at the catalyst inlet, based on catalyst manufacturer specifications;

(V) For lean-burn engines with selective catalytic control devices, the minimum exhaust temperature at the catalyst inlet required for reactant flow (ammonia or urea), and procedures for using a portable NOx and oxygen analyzer to establish the acceptable range of reactant flow rate, as a function of load.

Parameter monitoring is not required for diesel engines without exhaust gas recirculation and catalytic exhaust control devices.

(ii) Procedures for alerting the operator to emission control malfunctions. Engine control systems, such as air-to-fuel ratio controllers, shall have a malfunction indicator light and audible alarm.

(iii) Procedures for at least weekly or every 150 engine operating hours, whichever occurs later, emissions checks by a portable NOx, CO and oxygen analyzer.

(I) If an engine is in compliance for three consecutive emission checks, without any adjustments to the oxygen sensor set points, then the engine may be checked monthly or every 750 engine operating hours, whichever occurs later, until there is a noncompliant emission check or, for rich-burn engines with three-way catalysts, the oxygen sensor is replaced.

(II) For diesel engines and other lean-burn engines that are subject to Regulation XX or have a NOx CEMs, and that are subject to a CO limit more stringent than the 2000 ppmvd limit of Tables II or III, a CO emission check shall be performed at least quarterly, or every 2,000 engine operating hours, whichever occurs later.

(III) For diesel engines and other lean-burn engines that are subject to Regulation XX or have a NOx CEMs, and that are not subject to a CO limit more stringent than the 2000 ppmvd limit of Tables II or III, emission checks are not required.

(IV) No engine or control system maintenance or tuning may be conducted within 72 hours prior to the emission check, unless it is an unscheduled, required repair.

(V) The portable analyzer shall be calibrated, maintained and operated in accordance with the manufacturer's specifications and recommendations and the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Stationary Engines Subject to South Coast Air Quality Management District Rule 1110.2, approved on February 1, 2008, or subsequent protocol approved by EPA and the Executive Officer.

(iv) Procedures for at least daily monitoring, inspection and recordkeeping of:

(I) engine load or fuel flow rate;

(II) the set points, maximums and acceptable ranges of the parameters identified by clause (f)(1)(D)(i), and the actual values of the same parameters;

(III) the engine elapsed time meter operating hours;

(IV) the operating hours since the last emission check required by (f)(1)(D)(iii);

(V) for rich-burn engines with three-way catalysts, the difference of the exhaust temperatures (?T) at the inlet and outlet of the catalyst (changes in the ?T can indicate changes in the effectiveness of the catalyst);

(VI) engine control system and AFRC system faults or alarms that affect emissions.

The daily monitoring and recordkeeping may be done in person by the operator, or by remote monitoring.

(v) Procedures for responding to, diagnosing and correcting breakdowns, faults, malfunctions, alarms, emission checks finding emissions in excess of rule or permit limits, and parameters out-of-range.

(I) For a breakdown resulting in a violation of this rule or a permit condition, or for an emission check that finds emissions in excess of those allowed by this rule or a permit condition, the operator shall correct the problem and demonstrate compliance with another emission check, or shut down an engine by the end of an operating cycle, or within 24 hours from the time the operator knew of the breakdown or excess emissions, or reasonably should have known, whichever is sooner.

(II) For other problems, such as parameters out-of-range, an operator shall correct the problem and demonstrate compliance with another emission check within 48 hours of the operator first knowing of the problem.

(III) An operator shall not be considered in violation of the emission limits of this rule or in permit conditions if the operator complies with this subparagraph and the reporting requirements of subparagraph (f)(1)(H). Any emission check conducted by District staff that finds excess emissions is a violation.

(vi) Procedures and schedules for preventive and corrective maintenance.

(vii) Procedures for reporting noncompliance to the Executive Officer in accordance with subparagraph (f)(1)(H).

(viii) Procedures and format for the recordkeeping of monitoring and other actions required by the plan.

(ix) Procedures for plan revisions. Before any change in I&M plan operations can be implemented, the revised I&M plan shall be submitted to and approved by the Executive Officer. The operator shall apply for a plan revision prior to any change in emission limits or control equipment.

(x) An engine is not subject to this subparagraph if it is required by this rule to have a NOx and CO CEMS, or voluntarily has a NOx and CO CEMS that complies with this rule.

(E) Operating Log

Maintain a monthly engine operating log that includes:

(i) Total hours of operation;

(ii) Type of liquid and/or type of gaseous fuel;

(iii) Fuel consumption (cubic feet of gas and gallons of liquid); and

(iv) Cumulative hours of operation since the last source test required in subparagraph (f)(1)(C).

Facilities subject to Regulation XX may maintain a quarterly log for engines that are designated as a process unit on the facility permit.

(F) New Non-Emergency Electrical Generating Engines

Operators of engines subject to the requirements of subparagraph (d)(1)(F) shall also meet the following requirements.

(i) The engine generator shall be monitored with a calibrated electric meter that measures the net electrical output of the engine generator system, which is the difference between the electrical output of the generator and the electricity consumed by the auxiliary equipment necessary to operate the engine generator.

(ii) For engines monitored with a CEMS, the emissions of the monitored pollutants in ppmvd corrected to 15% O2, lbs/hr, and lbs/MW_e-hr and the net MW_e-hrs produced shall be calculated and recorded for the four 15-minute periods of each hour of operation. The mass emissions of NOx shall be calculated based on the measured fuel flow and one of the F

factor methods of 40 CFR 60, Appendix A, Method 19, or other method approved by the Executive Officer. Mass emissions of CO shall be calculated in the same manner as NOx, except that the ppmvd CO shall be converted to lb/scf using a conversion factor of 0.727 x 10^{-7}.

(iii) For NOx and CO emissions from engines not monitored with a CEMS and VOC emissions from all engines, the emissions of NOx, CO and VOC in lbs/MW_e-hr shall be calculated and recorded whenever the pollutant is measured by a source test or emission check. Mass emissions of NOx and CO shall be calculated in the same manner as the previous clause. Mass emissions of VOC shall be calculated in the same manner, except that the ppmvd VOC as carbon shall be converted to lb/scf using a conversion factor of 0.415 x 10^{-7}.

(iv) For engines generating combined heat and power that rely on the EEF to comply with Table IV emission standards, the daily and annual useful heat recovered (MW_{th}-hrs), net electrical energy generated (MW_e-hrs) and EEF shall be monitored and recorded.

(v) Other methods of calculating mass emissions than those specified, such as by direct measurement of exhaust volume, may be used if approved by the Executive Officer. All monitoring, calculation, and recordkeeping procedures must be approved by the Executive Officer.

(vi) Operators of combined heat and power engines shall submit to the Executive Officer the reports of the following information within 15 days of the end of the first year of operation, and thereafter within 15 days of the end of each calendar year: the annual net electrical energy generated (MW_e-hrs); the annual useful heat recovered (MW_{th}-hrs), the annual EEF calculated in accordance with clause (d)(1)(F)(ii); and the maximum annual EEF allowed by the operating permit. If the actual annual EEF exceeds the allowed EEF, the report shall also include the time periods and emissions for all instances where emissions exceeded any emission standard in Table IV.

(G) Portable Analyzer Operator Training

The portable analyzer tests required by the I&M Plan requirements of subparagraph (f)(1)(D) shall only be conducted by a person who has completed an appropriate District-approved training program in the operation of portable analyzers and has received a certification issued by the District.

(H) Reporting Requirements

(i) The operator shall report to the Executive Officer, by telephone (1-800-CUT-SMOG or 1-800-288-7664) or other District-approved method, any breakdown resulting in emissions in excess of rule or permit emission limits within one hour of such noncompliance or within one hour of the time the operator knew or reasonably should have known of its occurrence. Such report shall identify the time, specific location, equipment involved, responsible party to contact for further information, and to the extent known, the causes of the noncompliance, and the estimated time for repairs. In the case of emergencies that prevent a person from reporting all required information within the one-hour limit, the Executive Officer may extend the time for the reporting of required information provided the operator has notified the Executive Officer of the noncompliance within the one-hour limit.

(ii) Within seven calendar days after the reported breakdown has been corrected, but no later than thirty calendar days from the initial date of the breakdown, unless an extension has been approved in writing by the Executive Officer, the operator shall submit a written breakdown report to the Executive Officer which includes:

(I) An identification of the equipment involved in causing, or suspected of having caused, or having been affected by the breakdown;

(II) The duration of the breakdown;

(III) The date of correction and information demonstrating that compliance is achieved;

(IV) An identification of the types of excess emissions, if any, resulting from the breakdown;

(V) A quantification of the excess emissions, if any, resulting from the breakdown and the basis used to quantify the emissions;

(VI) Information substantiating whether the breakdown resulted from operator error, neglect or improper operation or maintenance procedures;

(VII) Information substantiating that steps were immediately taken to correct the condition causing the breakdown, and to minimize the emissions, if any, resulting from the breakdown;

(VIII) A description of the corrective measures undertaken and/or to be undertaken to avoid such a breakdown in the future; and

(IX) Pictures of any equipment which failed, if available.

(iii) Within 15 days of the end of each calendar quarter, the operator shall submit to the Executive Officer a report that lists each occurrence of a breakdown, fault, malfunction, alarm, engine or control system operating parameter out of the acceptable range established by an I&M plan or permit condition, or an emission check that finds excess emissions. Such report shall be in a District-approved format, and for each incident shall identify the time of the incident, the time the operator learned of the incident, specific location, equipment involved, responsible party to contact for further information, to the extent known the causes of the event, the time and description of corrective actions, including shutting an engine down, and the results of all portable analyzer NOx and CO emissions checks done before or after the corrective actions. The operator shall also report if no incidents occurred.

(2) Portable engines:

The operator of any portable engine shall maintain a monthly engine operating log that includes:

(i) Total hours of operation; or

(ii) Type of liquid and/or type of gaseous fuel; and

(iii) Fuel consumption (cubic feet of gas and gallons of liquid).

Facilities subject to Regulation XX may maintain a quarterly log for engines that are designated as a process unit on the facility permit.

(3) Recordkeeping for All Engines

All data, logs, test reports and other information required by this rule shall be maintained for at least five years and made available for inspection by the Executive Officer.

(g) Test Methods

Testing to verify compliance with the applicable requirements shall be conducted in accordance with the test methods specified in Table VIII, or any test methods approved by CARB and EPA, and authorized by the Executive Officer.

TABLE VIII

TESTING METHODS

Pollutant	Method
NO_x	District Method 100.1
CO	District Method 100.1
VOC	District Method 25.1* or District Method 25.3*

* Excluding ethane and methane

A violation of any standard of this rule established by any of the specified test methods, or any test methods approved by the CARB or EPA, and authorized by the Executive Officer, shall constitute a violation of this rule.

(h) Exemptions

The provisions of subdivision (d) shall not apply to:

(1) All orchard wind machines powered by an internal combustion engine.

(2) Emergency standby engines, engines used for fire-fighting and flood control, and any other emergency engines approved by the Executive Officer, which have permit conditions that limit operation to 200 hours or less per year as determined by an elapsed operating time meter, and agricultural emergency standby engines that are exempt from a District permit and operate 200 hours or less per year as determined by an elapsed operating time meter.

(3) Laboratory engines used in research and testing purposes.

(4) Engines operated for purposes of performance verification and testing of engines.

(5) Auxiliary engines used to power other engines or gas turbines during start-ups.

(6) Portable engines that are registered under the state registration program pursuant to Title 13, Article 5 of the CCR.

(7) Nonroad engines, with the exception that subparagraph (d)(2)(A) shall apply to portable generators.

(8) Engines operating on San Clemente Island.

(9) Agricultural stationary engines provided that:

(A) The operator submits documentation to the Executive Officer by the applicable date in Table V when permit applications are due that the applicable electric utility has rejected an application for an electrical line extension to the location of the engines, or the Executive Officer determines that the operator does not qualify, due to no fault of the operator, for funding authorized by California Health and Safety Code Section 44229; and

(B) The operator replaces the engines, in accordance with the compliance schedule of Table IX, with engines certified by CARB to meet the Tier 4 emission standards of 40 CFR Part 1039 Section 1039.101, Table 1. These Tier 4 replacement engines shall be considered to comply with Best Available Control Technology; and

(C) The operator does not operate the Tier 4 engines in a manner that exceeds the not-to-exceed standards of 40 CFR Section 1039.101, Paragraph (e), as determined by the test methods of subdivision (g) of this rule.

TABLE IX
COMPLIANCE SCHEDULE FOR INSTALLATION OF NEW TIER 4 STATIONARY AGRICULTURAL ENGINES

Action Required	Due Date
Submit to the Executive Officer applications for permits to construct engine modifications, control equipment, or replacement engines	March 1, 2013

Initiate construction of engine modifications, control equipment, or replacement engines	September 30, 2013, or 30 days after the permit to construct is issued, whichever is later
Complete construction and comply with applicable requirements	January 1, 2014, or 60 days after the permit to construct is issued, whichever is later
Complete initial source testing	March 1, 2014, or 120 days after the permit to construct is issued, whichever is later

(10) An engine start-up, until sufficient operating temperatures are reached for proper operation of the emission control equipment. The start-up period shall not exceed 30 minutes, unless the Executive Officer approves a longer period for an engine and makes it a condition of the engine permit.

(11) An engine start-up, after an engine overhaul or major repair requiring removal of a cylinder head, for a period not to exceed four operating hours.

(12) The initial commissioning of a new engine for a period specified by permit conditions, provided the operator takes measures to reduce emissions and the duration of the commissioning to the extent possible. The commissioning period shall not exceed 150 operating hours.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted December 1, 1978)(Amended July 8, 1983)(Amended November 6, 2009)
(Amended September 5, 2014)

RULE 1111 – REDUCTION OF NO_X EMISSIONSFROM NATURAL-GAS-FIRED, FAN-TYPE CENTRAL FURNACES

(a) Purpose and Applicability

The purpose of this rule is to reduce NOx emissions from natural gas-fired, fan-type central furnaces, as defined in this rule. This rule applies to manufacturers, distributors, sellers and installers of residential and commercial fan-type central furnaces, requiring either single-phase or three-phase electric supply, used for comfort heating with a rated heat input capacity of less than 175,000 BTU per hour, or, for combination heating and cooling units, a cooling rate of less than 65,000 BTU per hour.

(b) Definitions

(1) ANNUAL FUEL UTILIZATION EFFICIENCY (AFUE) is defined in Section 10.1 of Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N.

(2) BTU means British thermal unit or units.

(3) CONDENSING FURNACE means a high-efficiency furnace that uses a second heat exchanger to extract the latent heat in the flue gas by cooling the combustion gasses to near ambient temperature so that water vapor condenses in the heat exchanger, is collected and drained.

(4) FAN TYPE CENTRAL FURNACE is a self-contained space heater providing for circulation of heated air at pressures other than atmospheric through ducts more than 10 inches in length that have:

(A) a RATED HEAT INPUT CAPACITY of less than 175,000 BTU per hour; or

(B) for combination heating and cooling units, a cooling rate of less than 65,000 BTU per hour.

(5) HEAT INPUT means the higher heating value of the fuel to the furnace measured as BTU per hour.

(6) NOx EMISSIONS means the sum of nitrogen oxide and nitrogen dioxide (oxides of nitrogen) in the flue gas, collectively expressed as nitrogen dioxide.

(7) RATED HEAT INPUT CAPACITY means the gross HEAT INPUT of the combustion device.

(8) RESPONSIBLE OFFICIAL means:

(A) For a corporation: a president or vice-president of the corporation in charge of a principal business function or a duly authorized person who performs similar policy-making functions for the corporation, or

(B) For a partnership or sole proprietorship: general partner or proprietor, respectively.

(9) SINGLE FIRING RATE means the burners and control system are designed to operate at only one fuel input rate and the control system cycles burners between the maximum heat output and no heat output.

(10) USEFUL HEAT DELIVERED TO THE HEATED SPACE is the AFUE (expressed as a fraction) multiplied by the heat input.

(11) VARIABLE FIRING RATE means the burners and control system are designed to operate at more than one fuel input rate and the control system cycles burners between two or more heat output rates and no heat output.

(12) WEATHERIZED means designed for installation outside of a building, equipped with a protective jacket and integral venting, and labeled for outdoor installation.

(c) Requirements

(1) A manufacturer shall not, after January 1, 1984, manufacture or supply for sale or use in the South Coast Air Quality Management District natural-gas-fired, fan-type central furnaces, unless such furnaces meet the requirements of paragraph (c)(3).

(2) A person shall not, after April 2, 1984, sell or offer for sale within the South Coast Air Quality Management District natural-gas-fired, fan-type central furnaces unless such furnaces meet the requirements of paragraph (c)(3).

(3) Natural-gas-fired, fan-type central furnaces shall:

(A) not emit more than 40 nanograms of oxides of nitrogen (calculated as NO_2) per joule of useful heat delivered to the heated space; and

(B) be certified in accordance with subdivision (d) of this rule.

(4) On or after October 1, 2012, a person shall not manufacture, supply, sell, offer for sale, or install, for use in the South Coast Air Quality Management District, natural-gas-fired, fan-type central furnaces subject to this rule, unless such furnace complies with the applicable emission limit and compliance date set forth in Table 1 and is certified in accordance with subdivision (d) of this rule.

Table 1 – Furnace NOx Limits and Compliance Schedule

Compliance Date	Equipment Category	NOx Emission Limit (nanograms/Joule *)
October 1, 2012	Mobile Home Furnace	40
April 1, 2015	Condensing Furnace	14
October 1, 2015	Non-condensing Furnace	14
October 1, 2016	Weatherized Furnace	14
October 1, 2018	Mobile Home Furnace	14

* Nanograms of oxides of nitrogen (calculated as NO_2) per joule of useful heat delivered to the heated space

(5) Any manufacturer of fan-type central furnaces regulated by this rule may elect to pay a per unit mitigation fee of $200 for each condensing furnace and $150 for each non-condensing, weatherized or mobile home furnace distributed or sold into the SCAQMD in lieu of meeting the 14 nanogram/Joule NOx emission limit in Table 1 of paragraph (c)(4) of this rule. A manufacturer may elect to pay the per unit mitigation fee for a time period of no more than 36 months after the applicable compliance date in Table 1 of paragraph (c)(4). A manufacturer shall submit an alternate compliance plan for each 12 month time period after the applicable compliance date during which the manufacturer elects to pay the mitigation fee in lieu of meeting the NOx emission limit.

(A) Any manufacturer electing to comply using this mitigation fee option shall submit to the SCAQMD an alternate compliance plan no later than 60 days prior to the applicable compliance date that includes the following:

(i) a letter with the name of the manufacturer requesting the mitigation fee compliance option signed by a responsible official identifying the category of fan-type central furnaces

and the 12 month alternate compliance period that the mitigation fees cover;

(ii) an estimate of the quantity of applicable Rule 1111 fan-type central furnaces to be distributed or sold into the SCAQMD during the alternate compliance period, which estimate shall be based on total distribution and sales records or invoices of condensing, non-condensing, weatherized or mobile home fan-type central furnaces that were distributed or sold into the SCAQMD during the 12 month period of July 1 to June 30 prior to the applicable compliance date, along with supporting documentation;

(iii) a completed SCAQMD Form 400A with company name, identification that application is for an alternate compliance plan (section 7 of form), identification that the request is for the Rule 1111 mitigation fee compliance option (section 9 of form), and signature of the responsible official;

(iv) a check for payment of the alternate compliance plan filing fee (Rule 306, section (c)).

(B) The manufacturer shall submit to the Executive Officer a report signed by the responsible official for the manufacturer identifying by model number the quantity of Rule 1111 fan-type central furnaces actually distributed or sold into SCAQMD and a check for payment of mitigation fees for the applicable 12 month alternate compliance period for the quantity of applicable Rule 1111 fan-type central furnaces distributed or sold into the SCAQMD during the alternate compliance period. The report and the payment of mitigation fees must be submitted to the SCAQMD no later than thirty (30) days after the end of each 12-month mitigation fee alternate compliance period.

(d) Certification

(1) The manufacturer shall have each appliance model tested in accordance with the following:

(A) Oxides of nitrogen measurements, test equipment, and other required test procedures shall be in accordance with AQMD Method 100.1.

(B) Operation of the furnace shall be in accordance with the procedures specified in Section 4.0 of Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N.

(2) One of the two formulas shown below shall be used to determine the nanograms of oxides of nitrogen per joule of useful heat delivered to the heated space:

$$N = \frac{4.566 \times 10^4 \times P \times U}{H \times C \times E}, \qquad N = \frac{3.655 \times 10^{10} \times P}{(20.9-Y) \times Z \times E}$$

Where:

N = nanograms of emitted oxides of nitrogen per joule of useful heat.

P = concentration (ppm volume) of oxides of nitrogen in flue gas as tested.

U = volume percent CO_2 in water-free flue gas for stoichiometric combustion.

H = gross heating value of fuel, BTU/cu.ft. (60^oF, 30-in. Hg).

C = measured volume percent of CO_2 in water-free flue gas, assuming complete combustion and no CO present.

E = AFUE, percent (calculated using Table 2).

Y = volume percent of O_2 in flue gas.

Z = heating value of gas, joules/cu. meter (0.0^oC, 1 ATM).

(3) At least 120 days prior to the date a furnace model is first shipped to a location in the AQMD for use in the District, the manufacturer shall submit to the Executive Officer the following:

(A) A statement that the model is in compliance with subdivision (c). (The statement shall be signed by a responsible official and dated, and shall attest to the accuracy of all statements.)

(B) General Information

(i) Name and address of manufacturer.

(ii) Brand name.

(iii) Model number, as it appears on the furnace rating plate.

(C) A description of the furnace and specifications for each model being certified.

(D) Executive Officer approved emission test protocol and emission test results verifying compliance with the applicable NOx limit specified in Table 1.

(e) Identification of Compliant Units

(1) The manufacturer of the furnace complying with subdivisions (c) and (d) shall display the following on the shipping container label and rating plate of the furnace:

(A) Model number;

(B) Heat input capacity;

(C) Applicable NOx emission limit in Table 1; and

(D) Date of manufacture or date code.

(2) Any non-certified furnace shipped to a location in the South Coast Air Quality Management District for distribution or sale outside of the District shall have a label on the shipping container identifying the furnace as not certified for use in the District.

(f) Enforcement

The Executive Officer may periodically conduct such tests as are deemed necessary to ensure compliance with subdivision (c), (d), (e) and (h).

(g) Exemptions

(1) The provisions of this rule shall not apply to furnaces installed in mobile homes before October 1, 2012.

(2) For furnaces manufactured, purchased and delivered to the South Coast Air Quality Management District prior to the applicable compliance date in Table 1, any person may, until 300 days after the applicable compliance date, sell, offer for sale, or install such a furnace in the District, so long as the furnace meets the requirements of paragraph (c)(3) and subdivisions (d) and (e).

(h) Rebate Incentives for Early Compliance

Any manufacturer of natural gas-fired, fan-type central furnaces subject to this rule that distributes and sells into the District furnaces that comply with the 14 nanograms/Joule emission limit 90 days prior to the applicable compliance date in Table 1 of paragraph (c)(4) may submit a compliance plan for early compliance to the Executive Officer and to receive on a first-come first-served basis from the

AQMD a rebate payment of $75 for each 14 nanograms/Joule certified furnace and $90 for each high efficiency 14 nanograms/Joule certified furnace with AFUE of 90% or greater distributed and sold into the District, provided funds are available on the date documentation on the number of units distributed and sold is submitted to the AQMD. Total rebate payments to all manufacturers shall not exceed $3,000,000.

(i) Technology Assessment

On or before April 1, 2013, the Executive Officer shall conduct a technology assessment and shall report to the Governing Board on the status of manufacturers' progress towards compliance with the 14 nanograms/Joule emission limit for nitrogen oxides.

(Adopted February 7, 1986)(Amended December 4, 2009)

RULE 1112.1. EMISSIONS OF PARTICULATE MATTER AND CARBON MONOXIDE FROM CEMENT KILNS

(a) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) Kiln Feed means all materials except fuels entering the kiln, including raw feed and recycle dust, measured on a dry basis.

(2) Cement Kiln is a device for the calcining and clinkering of limestone, clay, other raw materials and recycle dust in the dry-process manufacture of gray cement.

(3) Clinker is a mass of fused material produced in a cement kiln from which the finished cement is manufactured by milling and grinding.

(4) Clinker Cooler is a device for the air-cooling of clinker, into which the clinker is discharged from the cement kiln.

(b) Requirements

(1) No person shall operate a cement kiln and clinker cooler capable of discharging particulate matter into the atmosphere unless such discharge of particulate matter into the atmosphere from such cement kiln and clinker cooler when combined is limited to no more than:

(A) 0.40 pound per ton of kiln feed for kiln feed rates less than 75 tons per hour.

(B) 30 pounds per hour for kiln feed rates of 75 tons per hour or greater.

(2) No person shall operate a cement kiln capable of emitting carbon monoxide (CO) into the atmosphere unless the CO concentration is limited to no more than:

(A) the limit of Rule 407(a)(1); or

(B) 1,900 ppm averaged over eight (8) consecutive hours and 6,000 ppm averaged over fifteen (15) consecutive minutes, both corrected to 3% oxygen (O_2) by volume, and measured on a dry basis.

(c) Compliance Determination

(1) For the purposes of this rule, particulate matter emissions from the cement kiln and clinker cooler shall be measured concurrently and shall be averaged over one hour.

(2) Measurement of particulate matter emissions from the clinker cooler shall provide for the evaporation and heating of any impinger solutions at a temperature of at least 800^{o}C for at least 30 minutes prior to weighing.

(3) Measurement of particulate matter emissions from the cement kiln shall provide for concurrent measurement of particulate matter emissions and sulfur dioxide emissions. Any measured gaseous sulfur dioxide emissions shall be excluded from the measurement of particulate matter emissions by subtracting from the mass of material collected in any impingers a mass equivalent to the amount of measured sulfur dioxide emissions based upon sulfuric acid dihydrate.

(4) Measurement, monitoring and recordkeeping of carbon monoxide (CO) emissions from the cement kiln shall be conducted according to the provisions of District Rule 218 – Continuous Emission Monitoring.

(5) A District approved Continuous Emissions Monitoring System (CEMS) for carbon monoxide (CO) and oxygen (O_2) must be installed no later than December 31, 2009, or prior to commencement of operation for sources beginning operation after December 4, 2009, and operated according to the provisions of District Rule 218 – Continuous Emission Monitoring.

(6) The CEMS certification tests and other sampling, analysis, and reporting shall be conducted by a laboratory that has been approved under the District Laboratory Approval Program (LAP) for the cited District reference test methods, where LAP approval is available. For District reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one year after the date that the LAP program becomes available

(d) Test Methods

(1) Carbon Monoxide emission concentration shall be determined according to the procedures in District Source Test Method 100.1 – Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling.

(2) Particulate matter emissions shall be determined according to the procedures in District Source Test Method 5.3 – Determination of Particulate Matter from Stationary Sources Using an In-Stack Filter.

(3) Other test methods may be used as determined to be equivalent and approved before the test in writing by the Executive Officer, the California Air Resources Board, and the United States Environmental Protection Agency.

(e) Exemptions

Cement kilns and clinker coolers subject to the provisions of this rule shall be exempt from the provisions of Rule 404 and Rule 405.

(Adopted Sept. 2, 1977)(Amended Dec. 2, 1977)(Amended Feb. 3, 1978)
(Amended Sept. 5, 1980)(Amended Apr. 3, 1981)(Amended July 3, 1981)
(Amended by California Air Resources Board Oct. 21, 1981)
(Amended Aug. 5, 1983)(Amended Mar. 16, 1984)(Amended Aug. 2, 1985)
(Amended Nov. 1, 1985)(Amended Feb. 6, 1987)(Amended Jan. 5, 1990)
(Amended Feb. 2, 1990)(Amended Nov. 2, 1990)(Amended Dec. 7, 1990)
(Amended Sept. 6, 1991)(Amended March 8, 1996)(Amended August 9, 1996)
(Amended November 8, 1996)(Amended May 14, 1999; Vacated)
(Amended July 20, 2001)(Amended December 6, 2002)(Amended December 5, 2003)
(Amended July 9, 2004)(Amended June 9, 2006)(Amended July 13, 2007)
(Amended June 3, 2011)(Amended September 6, 2013)
(Amended February 5, 2016)

RULE 1113. ARCHITECTURAL COATINGS

(a) Applicability

This rule is applicable to any person who supplies, sells, markets, offers for sale, or manufactures any architectural coating that is intended to be field applied within the District to stationary structures or their appurtenances, and to fields and lawns; as well as any person who applies, stores at a worksite, or solicits the application of any architectural coating within the District. The purpose of this rule is to limit the VOC content of architectural coatings used in the District.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AEROSOL COATING PRODUCT means a pressurized coating product containing pigments, resins, and/or other coatings solids that dispenses product ingredients by means of a propellant, and is packaged in a disposable aerosol container for hand-held application, or for use in specialized equipment for ground marking and traffic marking applications.

(2) ALUMINUM ROOF COATINGS are roof coatings containing at least 0.7 pounds per gallon (84 grams per liter) of coating as applied, of elemental aluminum pigment.

(3) APPURTENANCES are accessories to a stationary structure including, but not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain-gutters and down-spouts, window screens, lamp-posts, heating and air conditioning equipment, other mechanical equipment, large fixed stationary tools, signs, motion picture and television production sets, and concrete forms.

(4) ARCHITECTURAL COATINGS are any coatings applied to stationary structures or their appurtenances, or to fields and lawns.

(5) BELOW-GROUND WOOD PRESERVATIVES are wood preservatives formulated to protect below-ground wood.

(6) BITUMINOUS COATING MATERIALS are black or brownish coating materials, soluble in carbon disulfide, consisting mainly of hydrocarbons and which are obtained from natural deposits, or as residues from the distillation of crude petroleum oils, or of low grades of coal.

(7) BITUMINOUS ROOF PRIMERS are primers formulated for or applied to roofing that incorporate bituminous coating materials.

(8) BOND BREAKERS are coatings formulated for or applied between layers of concrete to prevent the freshly poured top layer of concrete from bonding to the substrate over which it is poured. ~~Bond breakers will be exempt from Rules 1113 and 314 upon adoption of Rule 1161 – Release Agents or any other Regulation XI rule limiting the VOC content of bond breakers.~~

(9) BUILDING ENVELOPE is the ensemble of exterior and demising partitions of a building that enclose conditioned space.

(10) BUILDING ENVELOPE COATINGS are fluid applied coatings applied to the building envelope to provide a continuous barrier to air or vapor leakage through the building envelope that separates conditioned from unconditioned spaces. Building Envelope Coatings are applied to diverse materials including, but not limited to, concrete masonry units (CMU), oriented stranded board (OSB), gypsum board, and wood substrates and must meet the following performance criteria:

(A) Air Barriers formulated to have an air permeance not exceeding 0.004 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.004 cfm/ft^2 @ 1.57 psf), [0.02 liters per square meter per second under a pressure differential of 75 Pa (0.02 L/(s m2) @ 75 Pa)] when tested in accordance with ASTM E2178; and/or

(B) Water Resistive Barriers formulated to resist liquid water that has penetrated a cladding system from further intruding into the exterior wall assembly and is classified as follows:

(i) Passes water resistance testing according to ASTM E331, and

(ii) Water vapor permeance is classified in accordance with ASTM E96/E96M.

(11) COATING is a material which is applied to a surface in order to beautify, protect, or provide a barrier to such surface.

(12) COLORANTS are solutions of dyes or suspensions of pigments.

(13) COLOR INDICATING SAFETY COATINGS are industrial maintenance coatings for safety management of process streams to prevent or minimize the consequences of the release of toxic, reactive, flammable or explosive substances, and include chemical and thermal color indicating coatings.

(14) CONCENTRATES are coatings supplied in a form that must be diluted with water or an exempt compound, prior to application, according to the architectural coatings manufacturer's application instructions in order to yield the desired coating properties.

(15) CONCRETE-CURING COMPOUNDS are coatings formulated for or applied to freshly poured concrete to retard the evaporation of water. Concrete-curing compounds manufactured and used for roadways and bridges (does not include curbs and gutters, sidewalks, islands, driveways and other miscellaneous concrete areas) are those concrete-curing compounds that meet ASTM Designation C309, Class B, and meet a loss of water standard of less than 0.15-kg/m^2 in 24 hours as determined by the California Transportation Department, California Test 534.

(16) CONCRETE SURFACE RETARDERS are coatings containing one or more ingredients such as extender pigments, primary pigments, resins, and solvents that interact chemically with the cement to prevent hardening on the surface where the retarder is applied, allowing the mix of cement and sand at the surface to be washed away to create an exposed aggregate finish.

(17) DEFAULT COATINGS are specialty coatings (those other than flat or nonflat coatings) that are not defined in section (b) as any other coating category.

(18) DRIVEWAY SEALERS are coatings that are applied to worn asphalt driveway surfaces in order to:

(A) Fill cracks;

(B) Seal the surface to provide protection; or

(C) Restore or preserve the surface appearance.

(19) DRY-FOG COATINGS are coatings which are formulated only for spray application so that when sprayed, overspray droplets dry before falling on floors and other surfaces.

(20) EXEMPT COMPOUNDS (See Rule 102-Definition of Terms.)

(21) FAUX FINISHING COATINGS are coatings that meet one or more of the following subcategories:

(A) CLEAR TOPCOATS are clear coatings used to enhance, seal and protect a Faux Finishing coating that meets the requirements of subsection (b)(21)(B), (C), (D) or (E). These clear topcoats must be sold and used

solely as part of a Faux Finishing or graphic arts coating system, and must be labeled in accordance paragraph (d)(7).

(B) DECORATIVE COATINGS are coatings used to create a gonioapparent appearance, such as metallic, iridescent, or pearlescent appearance, that contain at least 48 grams of pearlescent mica pigment or other iridescent pigment per liter of coating as applied (at least 0.4 pounds per gallon).

(C) GLAZES are coatings formulated and recommended to be used (or to be mixed with another coating) for:

(i) Wet-in-wet techniques, where a wet coating is applied over another wet coating to create artistic effects, including simulated marble or wood grain, or

(ii) Wet-in-dry techniques, where a wet coating is applied over a pre-painted or a specially prepared substrate or base coat and is either applied or is treated during the drying period with various tools, such as a brush, rag, comb, or sponge to create artistic effects such as dirt, old age, smoke damage, simulated marble and wood grain finishes, decorative patterns, or color blending.

(D) JAPANS are pure concentrated pigments, finely ground in a slow drying vehicle used by Motion Picture and Television Production Studios to create artistic effects including, but not limited to, dirt, old age, smoke damage, water damage, simulated marble, and wood grain.

(E) TROWEL APPLIED COATINGS are coatings exclusively applied by trowel that are used to create aesthetic effects including, but not limited to, polished plaster, clay, suede and dimensional, tactile textures.

(22) FIRE-PROOFING COATINGS are opaque coatings formulated to protect the structural integrity of steel and other construction materials and listed by Underwriter's Laboratories, Inc. for the fire protection of steel.

(23) FLAT COATINGS are coatings that register a gloss of less than 15 on an 85-degree meter or less than 5 on a 60-degree meter according to ASTM Test Method D 523.

(24) FLOOR COATINGS are opaque coatings that are formulated for or applied to flooring including, but not limited to, flooring for garages, decks, and porches. Floor coatings also include clear coatings formulated for or applied to concrete flooring. Floor coatings do not include Industrial Maintenance Coatings.

(25) FORM RELEASE COMPOUNDS are coatings designed for or applied to a concrete form to prevent the freshly poured concrete from bonding to the form.

The form may consist of metal, wood, or some material other than concrete. ~~Form release compounds will be exempt from Rules 1113 and 314 upon adoption of Rule 1161 – Release Agents or any other Regulation XI Rule limiting the VOC content of form release compounds.~~

(26) FORMULATION DATA is the actual product recipe which itemizes all the ingredients contained in a product including VOCs and the quantities thereof used by the manufacturer to create the product. Material Safety Data Sheets (MSDS) are not considered formulation data.

(27) GONIOAPPARENT means a change in appearance with a change in the angle of illumination or the angle of view, as defined according to ASTM E 284.

(28) GRAMS OF VOC PER LITER OF COATING OR COLORANT, LESS WATER AND LESS EXEMPT COMPOUNDS, is the weight of VOC per combined volume of VOC and coating or colorant solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{Ws - Ww - Wes}{Vm - Vw - Ves}$$

Where:

Ws	=	weight of volatile compounds in grams
Ww	=	weight of water in grams
Wes	=	weight of exempt compounds in grams
Vm	=	volume of material in liters
Vw	=	volume of water in liters
Ves	=	volume of exempt compounds in liters

For coatings that contain reactive diluents, the Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds, shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{Ws - Ww - Wes}{Vm - Vw - Ves}$$

Where:

Ws	=	weight of volatile compounds emitted during curing, in grams
Ww	=	weight of water emitted during curing, in grams

Wes = weight of exempt compounds emitted during curing, in grams
Vm = volume of the material prior to reaction, in liters
Vw = volume of water emitted during curing, in liters
Ves = volume of exempt compounds emitted during curing, in liters

(29) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{Ws - Ww - Wes}{Vm}$$

Where:
Ws = weight of volatile compounds in grams
Ww = weight of water in grams
Wes = weight of exempt compounds in grams
Vm = volume of the material in liters

(30) GRAPHIC ARTS COATINGS (Sign Paints) are coatings formulated for hand-application by artists using brush or roller techniques to indoor and outdoor signs (excluding structural components) and murals, including lettering enamels, poster colors, copy blockers, and bulletin enamels.

(31) HIGH-TEMPERATURE INDUSTRIAL MAINTENANCE COATINGS are industrial maintenance coatings formulated for or applied to substrates exposed continuously or intermittently to temperatures above 400 degrees Fahrenheit.

(32) INDUSTRIAL MAINTENANCE COATINGS are coatings, including primers, sealers, undercoaters, intermediate coatings and topcoats, formulated for or applied to substrates, including floors, that are exposed to one or more of the following extreme environmental conditions:

(A) Immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposure of interior surfaces to moisture condensation;

(B) Acute or chronic exposure to corrosive, caustic or acidic agents, or similar chemicals, chemical fumes, chemical mixtures, or solutions;

(C) Repeated exposure to temperatures in excess of 250 degrees Fahrenheit;

(D) Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial solvents, cleaners, or scouring agents; or

(E) Exterior exposure of metal structures.

(33) INTERIOR STAINS are stains labeled and formulated exclusively for use on interior surfaces.

(34) LACQUERS are clear or pigmented wood topcoats or clear lacquer sanding sealers, both formulated with nitrocellulose or synthetic resins to dry by evaporation without chemical reaction.

(35) LOW-SOLIDS COATINGS are coatings containing one pound or less of solids per gallon of material.

(36) MAGNESITE CEMENT COATINGS are coatings formulated for or applied to magnesite cement decking to protect the magnesite cement substrate from erosion by water.

(37) MANUFACTURER is any person, company, firm, or establishment who imports, blends, assembles, produces, packages, repackages, or re-labels an architectural coating, excluding retail outlets where labels or stickers may be affixed to containers or where colorant is added at the point of sale.

(38) MARKET means to facilitate sales through third party vendors including, but not limited to, catalog or ecommerce sales that bring together buyers and sellers. For the purposes of this rule, market does not mean to generally promote or advertise coatings.

(39) MASTIC COATINGS are coatings formulated to cover holes and minor cracks and to conceal surface irregularities, excluding roof coatings, and applied in a thickness of at least 10 mils (dry, single coat).

(40) METALLIC PIGMENTED COATINGS are decorative coatings, excluding industrial maintenance and roof coatings, containing at least 0.4 pounds per gallon (48 grams/liter) of coating, as applied, of elemental metallic pigment (excluding zinc).

(41) MULTI-COLOR COATINGS are coatings which exhibit more than one color when applied, are packaged in a single container and applied in a single coat.

(42) MULTI-COMPONENT COATINGS are reactive coatings requiring the addition of a separate catalyst or hardener before application to form an acceptable dry film.

(43) NONFLAT COATINGS are coatings that register a gloss of 5 or greater on a 60 degree meter and a gloss of 15 or greater on an 85 degree meter according to ASTM Test Method D 523.

(44) NON-SACRIFICIAL ANTI-GRAFFITI COATINGS are clear or opaque Industrial Maintenance Coatings formulated and recommended to deter adhesion

of graffiti and to resist repeated scrubbing and exposure to harsh solvents, cleansers, or scouring agents used to remove graffiti.

(45) PEARLESCENT means exhibiting various colors depending on the angles of illumination and viewing, as observed in mother-of-pearl.

(46) PIGMENTED means containing colorant or dry coloring matter, such as an insoluble powder, to impart color to a substrate.

(47) POST-CONSUMER COATINGS are finished coatings that would have been disposed of in a landfill, having completed their usefulness to a consumer, and does not include manufacturing wastes.

(48) PRE-TREATMENT WASH PRIMERS are coatings which contain a minimum of 0.5 percent acid, by weight, applied directly to bare metal surfaces to provide necessary surface etching.

(49) PRIMERS are coatings applied to a surface to provide a firm bond between the substrate and subsequent coats.

(50) QUICK-DRY ENAMELS are nonflat, high gloss coatings which comply with the following:

(A) Shall be capable of being applied directly from the container by brush or roller under normal conditions, normal conditions being ambient temperatures between 60°F and 80°F; and

(B) When tested in accordance with ASTM D 1640 they shall set-to-touch in two hours or less, dry-hard in eight hours or less, and be tack-free in four hours or less by the mechanical test method. Coatings classified as quick-dry enamels are subsumed by the nonflat coating category.

(51) QUICK-DRY PRIMERS, SEALERS, AND UNDERCOATERS are primers, sealers, and undercoaters which are intended to be applied to a surface to provide a firm bond between the substrate and subsequent coats and which are dry-to-touch in one-half hour and can be recoated in two hours when tested in accordance with ASTM D 1640. Coatings classified as quick-dry primers, sealers, and undercoaters are subsumed by the primer, sealer, undercoater category.

(52) REACTIVE DILUENT is a liquid, VOC during application and one in which, through chemical and/or physical reaction, such as polymerization, becomes an integral part of the coating.

(53) REACTIVE PENETRATING SEALERS are clear or pigmented coatings labeled and formulated for application to above-grade concrete and masonry substrates to provide protection from water and waterborne contaminants including, but not

limited to, alkalis, acids, and salts. Reactive Penetrating Sealers must meet the following criteria:

(A) Used only for reinforced concrete bridge structures for transportation projects within 5 miles of the coast or above 4,000 feet elevation; or for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect.

(B) Penetrate into concrete and masonry substrates and chemically react to form covalent bonds with naturally occurring minerals in the substrate.

(C) Line the pores of concrete and masonry substrates with a hydrophobic coating, but do not form a surface film.

(D) Improve water repellency at least 80 percent after application on a concrete or masonry substrate. This performance must be verified on standardized test specimens, in accordance with one or more of the following standards: ASTM C67, or ASTM C97/97M, or ASTM C140.

(E) Provide a breathable waterproof barrier for concrete or masonry surfaces that does not prevent or substantially retard water vapor transmission. This performance must be verified on standardized test specimens, in accordance with ASTM E96/E96M or ASTM D6490.

(F) Meet the performance criteria listed in the National Cooperative Highway Research Report 244 (1981), surface chloride screening applications, for products labeled and formulated for vehicular traffic.

(54) RECYCLED COATINGS are coatings manufactured by a certified recycled paint manufacturer and formulated such that 50 percent or more of the total weight consists of secondary and post-consumer coatings and 10 percent or more of the total weight consists of post-consumer coatings.

(55) RESTORATION ARCHITECT is an architect that has a valid certificate of registration as an architect issued by the California State Board of Architectural Examiners or the National Council of Architectural Registration Boards and working on registered historical restoration and/or preservation projects.

(56) RETAIL OUTLET means any establishment at which architectural coatings are sold or offered for sale to consumers.

(57) ROOF COATINGS are coatings formulated for application to exterior roofs for the primary purpose of preventing penetration of the substrate by water, or reflecting heat and ultraviolet radiation.

(58) RUST PREVENTATIVE COATINGS are coatings formulated for use in preventing the corrosion of metal surfaces in residential and commercial situations.

(59) SACRIFICIAL ANTI-GRAFFITI COATINGS are non-binding, clear coatings which are formulated and recommended for applications that allow for the removal of graffiti primarily by power washing.

(60) SANDING SEALERS are clear wood coatings formulated for or applied to bare wood for sanding and to seal the wood for subsequent application(s) of coatings.

(61) SEALERS are coatings applied to either block materials from penetrating into or leaching out of a substrate, to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.

(62) SECONDARY (REWORK) COATINGS are fragments of finished coatings or finished coatings from a manufacturing process that has converted resources into a commodity of real economic value, but does not include excess virgin resources of the manufacturing process.

(63) SHELLACS are clear or pigmented coatings formulated solely with the resinous secretions of the lac insect (laccifer lacca). Shellacs are formulated to dry by evaporation without a chemical reaction providing a quick-drying, solid, protective film for priming and sealing stains and odors; and for wood finishing excluding floors.

(64) SOLICIT is to require for use or to specify, by written or oral contract.

(65) SPECIALTY PRIMERS are coatings formulated for or applied to a substrate to seal fire, smoke or water damage, or to condition excessively chalky surfaces. An excessively chalky surface is one that is defined as having chalk rating of four or less as determined by ASTM D4214 – Photographic Reference Standard No. 1 or the Federation of Societies for Coatings Technology "Pictorial Standards for Coatings Defects".

(66) STAINS are opaque or semi-transparent coatings which are formulated to change the color but not conceal the grain pattern or texture.

(67) STATIONARY STRUCTURES include, but are not limited to, homes, office buildings, factories, mobile homes, pavements, curbs, roadways, racetracks, and bridges.

(68) STONE CONSOLIDANTS are coatings that are labeled and formulated for application to stone substrates to repair historical structures that have been

damaged by weathering or other decay mechanisms. Stone Consolidants must meet all of the following criteria:

(A) Used only for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect.

(B) Penetrate into stone substrates to create bonds between particles and consolidate deteriorated material.

(C) Specified and used in accordance with ASTM E2167.

(69) SWIMMING POOL COATINGS are coatings specifically formulated for or applied to the interior of swimming pools including, but not limited to, water park attractions, ponds and fountains, to resist swimming pool chemicals.

(70) SWIMMING POOL REPAIR COATINGS are chlorinated, rubber-based coatings used for the repair and maintenance of swimming pools over existing chlorinated, rubber-based coatings.

(71) TILE AND STONE SEALERS are clear or pigmented sealers that are used for sealing tile, stone or grout to provide resistance against water, alkalis, acids, ultraviolet light or staining and which meet one of the following subcategories:

(A) Penetrating sealers are polymer solutions that cross-link in the substrate and must meet the following criteria:

(i) A fine particle structure to penetrate dense tile such as porcelain with absorption as low as 0.10 percent per ASTM C373, ASTM C97/C97M, or ASTM C642,

(ii) Retain or increase static coefficient of friction per ANSI A137.1,

(iii) Not create a topical surface film on the tile or stone, and

(iv) Allow vapor transmission per ASTM E96/96M.

(B) Film forming sealers which leave a protective film on the surface.

(72) TINT BASE is an architectural coating to which colorants are added.

(73) TOPCOAT is any final coating, applied in one or more coats, to the interior or exterior of a stationary structure or their appurtenances.

(74) TRAFFIC COATINGS are coatings formulated for or applied to public streets, highways, and other surfaces including, but not limited to, curbs, berms, driveways, and parking lots.

(75) TUB AND TILE REFINISHING COATINGS are clear or opaque coatings that are used exclusively for refinishing the surface of a bathtub, shower, or sink and must meet all of the following criteria:

(A) Have a scratch hardness of 3H or harder and a gouge hardness of 4H or harder as determined on bonderite 1000 in accordance with ASTM D3363,

(B) Have a weight loss of 20 milligrams or less after 1000 cycles as determined with CS-17 wheels on bonderite 1000 in accordance with ASTM D4060,

(C) Must withstand 1,000 hours or more of exposure with few or no #8 blisters as determined on unscribed bonderite in accordance with ASTM D4585, and ASTM D714, and

(D) Must have an adhesion rating of 4B or better after 24 hours of recovery as determined on unscribed bonderite in accordance with ASTM D4585 and ASTM D3359.

(76) UNDERCOATERS are coatings formulated for or applied to substrates to provide a smooth surface for subsequent coats.

(77) VARNISHES are clear or pigmented wood topcoats formulated with various resins to dry by chemical reaction.

(78) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102 – Definition of Terms. For the purpose of this rule, tertiary butyl acetate (tBAc) shall be considered exempt as a VOC only for purposes of VOC emissions limitations or VOC content requirements and will continue to be a VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling, and inventory requirements which apply to VOCs, when used in industrial maintenance coatings, including zinc-rich industrial maintenance coatings and non-sacrificial anti-graffiti coatings.

(79) WATERPROOFING SEALERS are coatings which are formulated for the primary purpose of preventing penetration of porous substrates by water.

(80) WATERPROOFING CONCRETE/MASONRY SEALERS are clear or pigmented sealers that are formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light, or staining.

(81) WOOD COATINGS are film forming coatings used for application to wood substrates only, which are applied to substrates including floors, decks and porches. The Wood Coating category includes all lacquers, varnishes and sanding sealers, regardless of whether they are clear, semi-transparent or opaque.

(82) WOOD CONDITIONERS are coatings that are formulated for or applied to bare wood, prior to applying a stain, to provide uniform penetration of the stain.

(83) WOOD PRESERVATIVES are coatings formulated to protect wood from decay or insect attack by the addition of a wood preservative chemical registered by the California Environmental Protection Agency.

(84) WORKSITE means any location where architectural coatings are stored or applied.

(85) ZINC-RICH INDUSTRIAL MAINTENANCE PRIMERS are primers formulated to contain a minimum of 65 percent metallic zinc powder (zinc dust) by weight of total solids for application to metal substrates.

(c) Requirements

(1) Except as provided in paragraphs (c)(3), (c)(4), no person shall supply, sell, offer for sale, market, manufacture, blend, repackage, apply, store at a worksite, or solicit the application of any architectural coating within the District that is listed in the Table of Standards 1 and contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified.

(2) No person within the District shall, at the point of sale of any architectural coating subject to paragraph (c)(1), add to such coating any colorant that contains VOC in excess of the corresponding applicable VOC limit specified in the Table of Standards 2.

TABLE OF STANDARDS 1
VOC LIMITS

Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds

COATING CATEGORY	Category Codes	Current Limit[1]	Effective Date			Small Container Exemption
			1/1/14	2/5/16	1/1/19	
Bond Breakers	5	350				✓
Building Envelope Coating	62	100			50	✓
Concrete-Curing Compounds	7	100				✓
Concrete-Curing Compounds For Roadways and Bridges[2]	7	350				✓[3]
Concrete Surface Retarder	58	50	50			✓
Default	51	50	50			✓
Driveway Sealer	52	50				✓
Dry-Fog Coatings	8	50	50			✓
Faux Finishing Coatings						
Clear Topcoat	9a	100	100			✓
Decorative Coatings	9	350				✓
Glazes	9b	350				✓
Japan	9c	350				✓
Trowel Applied Coatings	9d	50	50			✓
Fire-Proofing Coatings	10	150	150			✓
Flats	13	50				✓[5]
Floor Coatings	14	50				✓
Form Release Compound	16	100	100			✓
Graphic Arts (Sign) Coatings	17	200	150	200		✓
Industrial Maintenance (IM) Coatings	19	100				✓[5]
Color Indicating Safety Coatings		480				✓[5]
High Temperature IM Coatings	18	420				✓[5]
Non-Sacrificial Anti-Graffiti Coatings	19a	100				✓[5]
Zinc-Rich IM Primers	56	100				✓[5]
Magnesite Cement Coatings	22	450				✓[3]
Mastic Coatings	23	100	100			✓
Metallic Pigmented Coatings	24	150	150			✓
Multi-Color Coatings	25	250				✓[3]
Nonflat Coatings	26, 27, 28	50				✓[5]
Pre-Treatment Wash Primers	29	420				✓[3]
Primers, Sealers, and Undercoaters	30	100				✓
Reactive Penetrating Sealers	59	350				✓[4]
Recycled Coatings	33	250			150	✓
Roof Coatings	34	50				✓
Roof Coatings, Aluminum	53	100				✓
Roof Primers, Bituminous	4	350				✓[3]
Rust Preventative Coatings	35	100				✓[6]
Sacrificial Anti-Graffiti Coatings	60	50				✓[3]
Shellac						
Clear	37	730				✓[4]
Pigmented	38	550				✓[4]
Specialty Primers	39	100				✓
Stains	41	100				✓

COATING CATEGORY	Category Codes	Current Limit[1]	Effective Date			Small Container Exemption
			1/1/14	2/5/16	1/1/19	
Stains, Interior	40	250				✓
Stone Consolidants	61	450				✓[3]
Swimming Pool Coatings						
Repair	43	340				✓[3]
Other	42	340				✓[3]
Tile and Stone Sealers	63	100				✓
Traffic Coatings	45	100				✓
Tub and Tile Refinishing Coatings	64	420				✓[4]
Waterproofing Sealers	48	100				✓
Waterproofing Concrete/Masonry Sealers	49	100				✓
Wood Coatings		275				
Varnish	46, 47	275				
Sanding Sealers	36	275				
Lacquer	20	275				
Wood Conditioners	65	100				
Wood Preservatives						
Below-Ground	50	350				✓[3]
Other	55	350				✓[3]

1. The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards.
2. Does not include compounds used for curbs and gutters, sidewalks, islands, driveways and other miscellaneous concrete areas.
3. Effective 02/05/2016, the small container exemption no longer applies per (f)(1).
4. Effective 01/01/2018, the small container exemption no longer applies per (f)(1).
5. Effective 01/01/2019, the small container exemption is further restricted per (f)(1).
6. Effective 01/01/2020, the small container exemption is further restricted per (f)(1).

TABLE OF STANDARDS 1 (cont.)
VOC LIMITS

Grams of VOC Per Liter of Material

COATING	Limit
Low-Solids Coating	120

TABLE OF STANDARDS 2
VOC LIMITS FOR COLORANTS

Grams of VOC Per Liter of Colorant
Less Water and Less Exempt Compounds

COLORANT ADDED TO	Limit
Architectural Coatings, excluding IM Coatings	50
Solvent-Based IM	600
Waterborne IM	50

(3) Coating Categorization

(A) If anywhere on the container of any coating listed in either Table of Standards, on any sticker or label affixed thereto, or in any sales or advertising literature, any representation is made that the coating may be used as, or is suitable for use as, a coating for which a lower VOC standard is specified in the table or in paragraph (c)(1), then the lowest VOC standard shall apply.

(B) The provisions of paragraph (c)(3)(A) shall not apply to a coating described in part as a flat coating; nonflat coating; primer, sealer, and undercoater; or represented in part for use on flooring, provided that all of the following requirements are met:

(i) The coating meets the definition of a specific coating category for which a higher VOC standard is specified in the Table of Standards,

(ii) The coating is labeled in a manner consistent with the definition and all the specific labeling requirements for that specific coating category, and

(iii) The coating is suitable and only recommended for the intended uses of that specific coating category.

(C) The provisions of paragraph (c)(3)(A) shall not apply to recycled coatings.

(4) Sell-Through Provision

(A) Any coating that is manufactured prior to the effective date of the applicable limit specified in the Table of Standards 1, and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, offered for sale, or applied for up to three years after the specified effective date.

(B) Any coating sold in a one-liter or smaller container that has a VOC content above the applicable limit specified in the Table of Standards 1 for that coating, which is manufactured prior to the effective date of the elimination or restriction of the small container exemption listed in subparagraph (f)(1)(B) through (f)(1)(E), may be sold, supplied, offered for sale, or applied for up to two years after the specified date.

(5) All architectural coating or colorant containers from which the contents are used by pouring, siphoning, brushing, rolling, padding, ragging or other means, shall be closed when not in use. These containers include, but should not be limited to: drums, buckets, cans, pails, trays or other storage or application containers.

(6) No person shall apply or solicit the application within the District of any industrial maintenance coatings, except non-sacrificial anti-graffiti coatings, for residential use or for use in areas such as office space and meeting rooms of industrial, commercial or institutional facilities not exposed to such extreme environmental conditions described in the definition of industrial maintenance coatings.

(7) General Prohibition

No person shall supply, sell, market, offer for sale, manufacture, blend, or repackage any architectural coating or colorant in the District subject to the provisions of this rule with any materials that contain in excess of 0.1 percent by weight any Group II exempt compounds listed in Rule 102. Cyclic, branched, or linear, completely methylated siloxanes (VMS) are not subject to this prohibition.

(d) Administrative Requirements

(1) Containers for all coatings, or any colorants manufactured on and after January 1, 2017, subject to this rule shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such coatings or colorants shall file with the Executive Officer of the District and the Executive Officer of the Air Resources Board an explanation of each code.

(2) Containers for all coatings subject to the requirements of this rule shall carry a statement of the manufacturer's recommendation regarding thinning of the coating. This requirement shall not apply to the thinning of architectural coatings with water. The recommendation shall specify that the coating is to be employed without thinning or diluting under normal environmental and application conditions, unless any thinning recommended on the label for normal

environmental and application conditions do not cause a coating to exceed its applicable standard.

(3) Each container of any coating, or any colorant manufactured on and after January 1, 2017, subject to this rule shall display the maximum VOC content in grams per liter, as follows:

(A) For coatings or colorants packaged in a single container, the VOC per liter of coating (less water and less exempt compounds, and excluding any colorant added to the tint base) as supplied, after any recommended thinning;

(B) For multi-component coatings, the VOC per liter of coating (less water and exempt compounds, and excluding any colorant added to the tint base) after mixing the components, as recommended for use by the architectural coatings manufacturer;

(C) For concentrates, the VOC per liter of coating (less water and exempt compounds, and excluding any colorant added to the tint base) at the minimum dilution recommended for use by the architectural coatings manufacturer;

(D) For low solids coatings, the VOC per liter of material (excluding any colorant added to the tint bases) after any recommended thinning; and

(E) VOC content displayed may be calculated using product formulation data, or may be determined using the test method in subdivision (e). VOC content calculated from formulation data shall be adjusted by the manufacturer to account for cure volatiles (if any) and maximum VOC content within production batches. The VOC content shall be displayed on the coating container such that the required language is:

(i) Noticeable and in clear and legible English;

(ii) Separated from other text; and

(iii) Conspicuous, as compared with other words, statements, designs, or devices in the label as to render it likely to be read and understood by an ordinary individual under customary conditions of purchase or use.

(4) The labels of all rust preventative coatings shall prominently display the statement "For Metal Substrates Only".

(5) The labels of all specialty primers shall prominently display one or more of the following descriptions:

(A) For fire-damaged substrates.

(B) For smoke-damaged substrates.

(C) For water-damaged substrates.

(D) For excessively chalky substrates.

(6) The labels of concrete-curing compounds manufactured and used for roadways and bridges shall prominently display the statement "FOR ROADWAYS AND BRIDGES ONLY (Not for Use on Curbs and Gutters, Sidewalks, Islands, Driveways and Other Miscellaneous Concrete Areas)".

(7) All Clear Topcoat for Faux Finishing coatings shall prominently display the statement "This product can only be sold as a part of a Faux Finishing coating system".

(8) A manufacturer, distributor, or seller of a coating meeting the requirements of this rule, who supplies that coating to a person who applies it in a non-compliant manner, shall not be liable for that non-compliant use, unless the manufacturer, distributor, or seller knows that the supplied coating would be used in a non-compliant manner.

(9) Manufacturers of recycled coatings shall submit a letter to the Executive Officer certifying their status as a Recycled Paint Manufacturer.

(e) Test Methods

For the purpose of this rule, the following test methods shall be used:

(1) VOC Content of Coatings and Colorants

The VOC content of coatings subject to the provisions of this rule shall be determined by:

(A) U.S. EPA Reference Test Method 24 (Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A) with the exempt compounds' content determined by Method 303 (Determination of Exempt Compounds) in the South Coast Air Quality Management District's (SCAQMD) "Laboratory Methods of Analysis for Enforcement Samples" manual, or

(B) Method 304 (Determination of Volatile Organic Compounds (VOC) in Various Materials) in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Method 313 (Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry) in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(D) ASTM Test Method 6886 (Standard Test Method for Determination of the Weight Percent Individual Volatile Organic Compounds in Waterborne Air-Dry Coatings by Gas Chromatography).

(E) Exempt Perfluorocarbons

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

will be analyzed as exempt compounds for compliance with subdivision (c), only when manufacturers specify which individual compounds are used in the coating formulations. In addition, the manufacturers must identify the U.S. EPA, CARB, and SCAQMD approved test methods, which can be used to quantify the amount of each exempt compound.

(2) Acid Content of Coatings

The acid content of a coating subject to the provisions of this rule shall be determined by ASTM Test Method D 1613 (Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products).

(3) Metal Content of Coatings

The metallic content of a coating subject to the provisions of this rule shall be determined by Method 318 (Determination of Weight Percent Elemental Metal in Coatings by X-Ray Diffraction) in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(4) Drying Times

The set-to-touch, dry-hard, dry-to-touch, and dry-to-recoat times of a coating subject to the provisions of this rule shall be determined by ASTM Test Method D 1640 (Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature). The tack-free time of a coating subject to the provisions of this rule shall be determined by ASTM Test Method D 1640, according to the Mechanical Test Method.

(5) Gloss Determination

The gloss shall be determined by ASTM Test Method D 523 (Specular Gloss).

(6) Gonioapparent Characteristics for Coatings

A coating will be determined to have a gonioapparent appearance by ASTM E 284 (Standard Terminology of Appearance).

(7) Performance criteria for Reactive Penetrating Sealers shall be determined by the following:

(A) Water Repellency

(i) ASTM C67 (Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile);

(ii) ASTM C97/97M (Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone); or

(iii) ASTM C140 (Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units).

(B) Water Vapor Transmission

(i) ASTM E96/96M (Standard Test Methods for Water Vapor Transmission of Materials); or

(ii) ASTM D6490 (Standard Test Method for Water Vapor Transmission of Nonfilm Forming Treatments Used on Cementitious Panels).

(C) Chloride Screening shall be determined using the National Cooperative Highway Research Report 244 (1981), "Concrete Sealers for the Protection of Bridge Structures".

(8) Performance criteria for Building Envelope Coatings shall be determined by the following:

(A) Air Barriers:

ASTM E2178 (Standard Test Method for Air Permeance of Building Materials).

(B) Water Resistive Barriers

(i) ASTM E331 (Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference); and

(ii) ASTM E96/96M (Standard Test Methods for Water Vapor Transmission of Materials).

(9) Selection and Use of Stone Consolidants shall be determined by ASTM E2167 (Standard Guide for Selection and Use of Stone Consolidants).

(10) Performance criteria for Tub and Tile Refinishing Coatings shall be determined by the following:

(A) ASTM D3363 (Standard Test Method for Film Hardness by Pencil Test);

(B) ASTM D4060 (Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser);

(C) ASTM D4585 (Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation);

(D) ASTM D714 (Standard Test Method for Evaluating Degree of Blistering of Paints); and

(E) ASTM D3359 (Standard Test Methods for Measuring Adhesion by Tape Test).

(11) Performance criteria for penetrating Tile and Stone Sealers shall be determined by the following:

(A) Penetration of Dense Tile

(i) ASTM C373 (Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products, Ceramic Tiles, and Glass Tiles);

(ii) ASTM C97/C97M (Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone); or

(iii) ASTM C642 (Standard Test Method for Density, Absorption, and Voids in Hardened Concrete).

(B) Static Coefficient of Friction by American National Standard Specification for Ceramic Tile (ANSI A137.1).

(C) Water Vapor Transmission by ASTM E96/96M (Standard Test Methods for Water Vapor Transmission of Materials).

(12) Degree of Chalking Determination

ASTM D4214 (Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films).

(13) Equivalent Test Methods

Other test methods determined to be equivalent after review by the Executive Officer, CARB, and the U.S. EPA, and approved in writing by the District Executive Officer may also be used.

(14) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(15) All test methods referenced in this subdivision shall be the version most recently approved by the appropriate governmental entities.

(f) Exemptions

(1) Small Container Exemption

The provisions of the Table of Standards 1 and paragraph (c)(1) of this rule shall not apply to architectural coatings in containers having capacities of one liter (1.057 quart) or less, but shall apply to the following:

(A) Wood Coatings, including Lacquers, Varnishes, and Sanding Sealers.

(B) Effective February 5, 2016, Concrete-Curing Compounds For Roadways and Bridges; Magnesite Cement Coatings; Multi-Color Coatings; Pre-Treatment Wash Primers; Roof Primers, Bituminous; Sacrificial Anti-Graffiti Coatings; Stone Consolidants; Repair and Other Swimming Pool Coatings; and Below-Ground and Other Wood Preservatives.

(C) Effective January 1, 2018, Tub and Tile Refinishing Coatings; Clear and Pigmented Shellacs; and Reactive Penetrating Sealers.

(D) Effective January 1, 2019, Flats and Nonflat-Coatings that are sold:

(i) In containers having capacities greater than eight fluid ounce, or

(ii) For purposes other than touch up.

(E) Effective January 1, 2019, Industrial Maintenance Coatings, including Color Indicating Safety Coatings, High Temperature IM Coatings, Non-Sacrificial Anti-Graffiti Coatings, and Zinc-Rich IM Primers that are sold:

(i) In containers having capacities greater than one liter, or

(ii) For purposes other than touch up, or

(iii) Displayed or advertised for sale at a retail outlet.

(F) Effective January 1, 2020, Rust Preventative Coatings that are sold:

(i) In containers having capacities greater than eight fluid ounce, or

(ii) For purposes other than touch up.

(2) The small container exemption only applies if the following conditions are met:

(A) The manufacturer reports the sales in the Rule 314 Annual Quantity and Emissions Report. The loss of this exemption due to the failure of the manufacturer to submit the Rule 314 Annual Quantity and Emissions Report shall apply only to the manufacturer.

(B) The coating containers of the same specific coating category listed in the Table of Standards 1, are not bundled together to be sold as a unit that exceeds one liter (1.057 quarts), or eight fluid ounces for coatings under subparagraph (f)(1)(D) as of January 1, 2019, or eight fluid ounces for

coatings under subparagraph (f)(1)(F) as of January 1, 2020, excluding containers packed together for shipping to a retail outlet.

(C) The label or any other product literature does not suggest combining multiple containers so that the combination exceeds one liter (1.057 quarts) or eight fluid ounces under (f)(1)(D) as of January 1, 2019, or eight fluid ounces for coatings under subparagraph (f)(1)(F) as of January 1, 2020.

(3) The provisions of subparagraph (d)(1) through (d)(7) shall not apply to architectural coatings in containers having capacities of two fluid ounces (59mL) or less.

(4) The provisions of this rule shall not apply to:

(A) Architectural coatings supplied, sold, offered for sale, marketed, manufactured, blended, repackaged or stored in this District for shipment outside of this District or for shipment to other manufacturers for repackaging.

(B) Emulsion type bituminous pavement sealers.

(C) Aerosol coating products.

(D) Use of stains and lacquers in all areas within the District at an elevation of 4,000 feet or greater above sea level or sale in such areas for such use.

(5) The provisions of paragraph (c) shall not apply to facilities which apply coatings to test specimens for purposes of research and development of those coatings.

(g) Solvent Cleaning

(1) Solvent cleaning that is conducted as part of a business including solvent cleaning of architectural coating application equipment and the storage and disposal of VOC-containing materials used in cleaning operations are subject to the provisions of Rule 1171 - Solvent Cleaning Operations.

(2) Solvent cleaning that is not conducted as part of a business and solvent thinning of coatings including solvent cleaning of architectural coating application equipment and solvent thinning of architectural coatings are subject to the provisions of Rule 1143 – Consumer Paint Thinner and Multi-Purpose Solvents.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted May 3, 2013)

RULE 1114 PETROLEUM REFINERY COKING OPERATIONS

(a) Purpose and Applicability

The purpose of this rule is to reduce emissions from atmospheric venting of coke drums. This rule applies to all petroleum refineries equipped with delayed coking units.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) COKE DRUM is a batch system pressure vessel in which petroleum coke is produced.

(2) DELAYED COKING UNIT is a petroleum refinery process unit in which high molecular weight petroleum derivatives are converted to lighter gaseous and liquid products and petroleum coke by means of thermal cracking in a series of coke drums. A delayed coking unit consists of the coke drums and ancillary equipment associated with a main fractionator.

(3) PETROLEUM REFINERY is a facility identified by the North American Industry Classification System Code 324110, Petroleum Refineries.

(4) TURNAROUND is a planned activity involving shutdown and startup of one or several process units for the purpose of performing periodic maintenance, repair or replacement of equipment, or installation of new equipment.

(c) Requirements

(1) Effective November 1, 2013, the owner or operator of a delayed coking unit shall depressurize each coke drum to less than two (2) pounds per square inch, gauge (psig) prior to venting it to atmosphere; or

(2) If unable to comply with the provisions of paragraph (c)(1), the owner or operator of a delayed coking unit shall comply with the following:

(A) At a facility with a single delayed coking unit, effective May 1, 2014, depressurize each coke drum prior to venting to atmosphere to less than five (5) psig until compliance with paragraph (c)(1) is achieved, which is required upon completion of the first unit turnaround after May 1, 2014 or by December 31, 2016, whichever is earlier.

(B) At a facility with more than one delayed coking unit:

(i) By November 1, 2013, submit to the Executive Officer:

(I) For approval, a baseline calculation using general engineering practices and substantiating records that identify the facility-wide average coke drum internal pressure at which atmospheric venting was initiated for all the coke drums during calendar year 2012, or

(II) A notification that the facility intends to depressurize each coke drum to less than five (5) psig until achieving compliance with paragraph (c)(1);

(ii) Effective May 1, 2014, until completion of the first turnaround at an affected delayed coking unit following May 1, 2014 or by December 31, 2016, whichever is earlier, either:

(I) Depressurize each coke drum prior to venting to atmosphere to a pressure not to exceed, when averaged over a 30 day period for all affected drums, 110% of the 2012 baseline submitted and approved pursuant to subclause (c)(2)(B)(i)(I), or

(II) Depressurize each coke drum to less than five (5) psig, pursuant to subclause (c)(2)(B)(i)(II); and,

(iii) Effective upon resuming operations at an affected delayed coking unit following its turnaround or January 1, 2017, whichever is earlier, depressurize each affected coke drum to less than 5 (five) psig prior to venting to atmosphere until compliance with paragraph (c)(1) is achieved within the next 24 months of the earlier trigger date.

(C) Submit to the Executive Officer any required permit applications pursuant to Regulation II for equipment and process modifications necessary to achieve compliance with subdivision (c) at least nine months prior to effective dates.

(d) Monitoring and Recording

Effective November 1, 2013, the owner or operator of a delayed coking unit shall:

(1) Monitor the coke drum pressure and record it continuously from feed introduction until atmospheric venting is initiated, using a device calibrated at least once annually according to manufacturer's specifications;

(2) Monitor and record continuously from feed introduction until atmospheric venting is initiated the following:

(A) Coke drum atmospheric vent valve position (open or closed) or, if unable to comply with subparagraph (d)(2)(A),

(B) Coke drum blowdown valve position or the temperature of the coke drum vent at a location downstream of the atmospheric vent valve, until achieving compliance with subparagraph (d)(2)(A), which is required upon completion of the first unit turnaround following November 1, 2013 or by December 31, 2016, whichever is earlier;

(3) Maintain the monitoring equipment required in paragraphs (d)(1) and (d)(2) in good operating condition except for periods of downtime due to calibration, maintenance or repair, which shall not exceed 96 hours per calendar year per delayed coking unit, and

(4) Manually record the coke drum pressure and the atmospheric vent valve position at five minute intervals covering a time period of no less than 15 minutes immediately prior to atmospheric venting during periods of downtime as specified in paragraph (d)(3).

Notwithstanding the effective date in subdivision (d), the owner or operator of a facility subject to paragraph (c)(2) shall comply with the requirements in this subdivision effective May 1, 2014.

(e) Notification

The owner or operator of a delayed coking unit shall notify the Executive Officer by telephone within 24 hours of any failure of the monitoring or recording equipment required by subdivision (d).

(f) Recordkeeping

Effective November 1, 2013, the owner or operator of a delayed coking unit shall maintain all operational and calibration records required by subdivision (d) for at

least five years and shall make such records available to the Executive Officer upon request. Notwithstanding the effective date in subdivision (f), the owner or operator of a facility subject to paragraph (c)(2) shall comply with the requirements in this subdivision effective May 1, 2014.

(g) Exemptions

Any coke drum subject to the provisions of this rule shall be exempt from the provisions of Rule 404.

6/16/95

(Adopted March 2, 1979)(Amended December 5, 1980)(Amended March 16, 1984)
(Amended March 2, 1990)(Amended August 2, 1991)
(Amended March 6, 1992)(Amended May 12, 1995)

RULE 1115. MOTOR VEHICLE ASSEMBLY LINE COATING OPERATIONS

(a) Purpose and Applicability

The purpose of Rule 1115 is to reduce volatile organic compound (VOC) emissions that result from coating operations conducted on motor vehicle assembly lines. This rule applies to all assembly line coating operations, conducted during the manufacturing of new motor vehicles.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) APPLICATION LINE is that portion of a motor vehicle assembly production line which applies surface and other coatings to motor vehicle bodies, hoods, fenders, cargo boxes, doors, and grill opening panels.

(2) ASSEMBLY LINE is an arrangement of industrial equipment and workers in which the product passes from one specialized operation to another until complete, by either automatic or manual means.

(3) BASECOAT is a pigmented topcoat which is the first topcoat applied as part of a multistage topcoat system.

(4) BASECOAT/CLEARCOAT (BC/CC) is a topcoat consisting of a base coat portion and a clear coat portion.

(5) CAPTURE EFFICIENCY is the percentage of volatile organic compounds used, emitted, evolved, or generated by the operation, that are collected and directed to an air pollution control device.

(6) CLEARCOAT is a topcoat which contains no pigments or only transparent pigments and which is the final topcoat applied as part of a multistage topcoat system.

(7) COATING is a material which is applied to a surface in order to beautify and/or protect such surface.

(8) ELECTROPHORETIC APPLIED PRIMER is an undercoat applied by dipping the component in a coating bath with an electrical potential difference between the component and the bath.

(9) EXEMPT COMPOUNDS are any of the following compounds:

(A) Group I
trifluoromethane (HFC-23)
chlorodifluoromethane (HCFC-22)
dichlorotrifluoroethane (HCFC-123)
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)
pentafluoroethane (HFC-125)
1,1,2,2-tetrafluoroethane (HFC-134)
tetrafluoroethane (HFC-134a)
dichlorofluoroethane (HCFC-141b)
chlorodifluoroethane (HCFC-142b)
1,1,1-trifluoroethane (HFC-143a)
1,1-difluoroethane (HFC-152a)
cyclic, branched, or linear, completely fluorinated alkanes;
cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

(B) Group II
methylene chloride
carbon tetrachloride
1,1,1-trichloroethane (methyl chloroform)
trichlorotrifluoroethane (CFC-113)
dichlorodifluoromethane (CFC-12)
trichlorofluoromethane (CFC-11)
dichlorotetrafluoroethane (CFC-114)
chloropentafluoroethane (CFC-115)

Use of Group II compounds may be restricted in the future because they are toxic, potentially toxic, or are upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, production of chlorofluorocarbons (CFC), 1,1,1-trichloroethane (methyl chloroform), and carbon tetrachloride will be phased out in accordance with the Code of Federal Regulation Title 40, Part 82 (December 10, 1993). Specifically, the District Board has established a policy to phase out chlorofluorocarbons (CFC) on or before 1997.

(10) FINAL REPAIR is the final coating applied to correct topcoat imperfections prior to shipment.

(11) METALLIC/IRIDESCENT TOPCOAT is a topcoat which contains iridescent particles, composed of either metal as metallic particles or silicon as mica particles, in excess of 5 g/L (0.042 lb/gal) as applied, where such particles are visible in the dry film.

(12) MIDCOAT is a semi-transparent topcoat which is the middle topcoat applied as part of a three-stage topcoat system.

(13) MOTOR VEHICLES are all passenger cars, light-duty trucks, medium-duty vehicles and heavy-duty vehicles as defined in Section 1900, Title 13, California Administrative Code.

(14) MULTISTAGE TOPCOAT SYSTEM is any basecoat/clearcoat topcoat system or any three-stage topcoat system, manufactured as a system, and used as specified by the manufacturer.

(15) OVERALL CONTROL EFFICIENCY is the product of capture and control efficiencies.

(16) PRIMER is any or all coatings beneath the topcoat.

(17) SPRAY PRIMER is any primer, except primer surfacer, that is applied by spraying.

(18) PRIMER SURFACER is a primer coat applied over an electrophoretically applied primer.

(19) SOLVENT CLEANING OPERATION is the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants which include, but are not limited to, dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas. Each distinct method of cleaning in a cleaning process which consists of a series of cleaning methods shall constitute a separate solvent cleaning operation.

(20) THREE-STAGE TOPCOAT SYSTEM is a topcoat system composed of a basecoat portion, a midcoat portion, and a transparent clearcoat portion.

(21) TOPCOAT is the final coating applied for the purpose of establishing the final color and/or protective surface. This includes all multistage topcoat systems, metallic/iridescent topcoats, and final repair coatings.

(22) TRANSFER EFFICIENCY is the ratio of the weight (or volume) of coating solids adhering to an object to the total weight (or volume) of coating solids used in the application process expressed as a percentage.

(23) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(c) Requirements

(1) VOC Content of Coatings and VOC Emission Limits

(A) A person shall not apply any electrophoretic primer, in any motor vehicle application line, which has a VOC content in excess of 145 grams per liter (1.2 lb/gal) of coating, less water and less exempt compounds.

(B) A person shall not apply any final repair coating, in any motor vehicle application line, which has a VOC content in excess of 580 grams per liter (4.8 lb/gal) of coating, less water and less exempt compounds.

(C) A person shall not apply any spray primer, primer surfacer and/or topcoat in any motor vehicle application line that result in VOC emissions in excess of 1.80 kilograms per liter (15.0 lb/gal) of applied solids.

(2) A person may comply with the requirements of paragraph (c)(1) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(3) Approved Emission Control System

A person may comply with the provisions of paragraph (c)(1) by using an approved emission control system for reducing VOC emissions, consisting of collection and control devices which have been approved in writing by the Executive Officer, or designee. The approved emission control system shall reduce the VOC emissions resulting from the use of coatings by an equivalent or greater level to that which would have been achieved by the provisions of paragraph (c)(1).

The required efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by the following equation:

$$C.E. = [\,1 - \{\,\frac{(VOC_{LWc})}{(VOC_{LWn,Max})} \times \frac{1 - (VOC_{LWn,Max}/D_{n,Max})}{1 - (VOC_{LWc}/D_c)}\,\}\,]\ x\ 100$$

Where: C.E. = Overall Control Efficiency, percent

VOC_{LWc} = VOC Limit of Rule 1115, less water and less exempt compounds, pursuant to subdivision (c).

$VOC_{LWn,MAX}$ = Maximum VOC content of non-compliant coating used in conjunction with a control device, less water and exempt compounds.

$D_{n,MAX}$ = Density of solvent, reducer, or thinner contained in the non-compliant coating.

D_c = Density of corresponding solvent, reducer, or thinner used in the compliant coating system = 880 g/L.

(4) Solvent Cleaning Operations; Storage and Disposal of VOC-containing Materials.

Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in solvent cleaning operations shall be carried out pursuant to Rule 1171 - Solvent Cleaning Operations.

(d) Rule 442 Applicability

Any motor vehicle application line exempt from all or a portion of this rule shall comply with the provisions of Rule 442.

(e) Methods of Analysis

(1) Determination of VOC content

The VOC content of materials subject to the provisions of the rule shall be determined by the following methods:

(A) United States Environmental Protection Agency USEPA Reference Method 24, (Code of Federal Regulations (CFR) Title 40, Part 60, Appendix A). The exempt compound content shall be determined by SCAQMD Test Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual or;

(B) SCAQMD Test Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with paragraph (c), only when manufacturers specify which individual compounds are used in the coating formulation. In addition, the manufacturers must identify the United States Environmental Protection Agency, California Air Resources Board, and the District approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Compliance, Including Transfer Efficiency

Determination of compliance, including transfer efficiency, to verify compliance with subparagraph (c)(1)(C) shall be conducted as prescribed in EPA Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations, dated December 1988.

(3) Determination of Efficiency of Emission Control System

(A) The capture efficiency of the emissions control system as specified in paragraph (c)(3) shall be determined by the procedures presented in the USEPA technical guidance document, "Guidelines for Determining Capture Efficiency, January 9, 1995." Notwithstanding the test methods specified by the Guidelines, any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD Executive Officer may be substituted.

(B) The efficiency of the control device of the emission control system as specified in paragraph (c)(3) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by the USEPA Test Methods 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. USEPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(4) Multiple Test Methods

When more than one test method or set of methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(f) Exemptions

(1) The provisions of paragraph (c)(1) of this rule shall not apply to the following manufacturing operations:

(A) Other coating operations not associated with applying body primer, and topcoat coatings to exterior sheet metal and body.

(B) Use of:

(i) Wheel Topcoat Application
(ii) Antirust Coatings
(iii) Trunk Coatings
(iv) Interior Coatings
(v) Flexible Coatings
(vi) Sealers and Deadeners
(vii) Plastic Parts
(viii) Accent and Stripe Coatings

(g) Recordkeeping Daily Record of Coating and Solvent Usage

Daily records of coating and solvent usage shall be maintained pursuant to Rule 109.

South Coast

Adopted February 5, 1982
Amended January 6, ~~1985~~ 1984

2/6/85

Rule 1117 - Emissions of Oxides of Nitrogen from Glass Melting Furnaces

(a) Definitions

For the purpose of this rule the following definitions shall apply:

(1) Container Glass includes food and beverage type containers manufactured by pressing, blowing in molds, drawing, rolling, or casting.

(2) Flat Glass means glass that is used in windows, windshields, plate glass, etc., and which is produced by the float, sheet, rolled, or plate glass process.

(3) Pull is the term applied to the removal of glass from a glass melting furnace, generally expressed in tons.

(4) Cullet is scrap glass which is added to the formulation being charged to a furnace.

(5) Furnace is any fossil fuel fired glass melting furnace.

(6) Furnace Rebuild is any change in furnace design configuration which requires a change in the Permit to Operate.

(7) Idling is the operation of a furnace at less than 25 percent of the production capacity as stated on the Permit to Operate.

(8) Start-up is that period of time during which a furnace is heated to operating temperature from a lower temperature.

(9) Shutdown is that period of time during which a furnace is allowed to cool from operating temperature to a lower temperature.

(10) Energy Recovery is the use of waste heat from a permit unit in another permit unit on the same premises so that not less than five percent of the total waste heat is recovered for useful purposes at the first stage of heat transfer.

(b) Requirements

(1) After December 31, 1987, no person shall operate a furnace capable of discharging nitrogen oxides into the atmosphere unless such discharge of nitrogen oxides into the atmosphere is limited to no more than 5.5 pounds of nitrogen oxides per ton of glass pulled.

(2) After December 31, 1992, no person shall operate a furnace capable of discharging nitrogen oxides into the atmosphere unless such discharge of nitrogen oxides into the atmosphere is limited to no more than 4.0 pounds of nitrogen oxides per ton of glass pulled.

(3) The requirements of paragraphs (b)(1) and (b)(2) shall not apply to furnaces which comply with an alternative emissions control plan which satisfies all of the following requirements:

(A) The maximum emission of any air contaminant in any 24 hour period shall not exceed the emission of such air contaminant if the furnaces complied with (b)(1) and (b)(2).

(B) The furnaces are located within the same premises.

(C) Prior to its implementation, the control plan shall be approved, in writing, by the Executive Officer.

(D) The control plan shall be enforceable by the District and shall include methods acceptable to the Executive Officer for demonstrating compliance with the control plan on a daily basis.

(E) Continuous NOx monitors shall be required for each furnace included in a control plan.

(F) A modified alternative emission control plan shall be required prior to modification of any permit units subject to alternative emission control, or upon amendment of this rule. Such plan shall not include credit for those reductions required by amendments to this rule.

(G) The Permits to Operate for the equipment described in the control plan shall be surrendered and cancelled at the time new Permits to Construct or Operate are issued. Such new permits shall not be effective unless surrender of such existing permits has been made. If such new permits are denied, the existing permits surrendered pursuant to this section shall be reissued and restored to the same conditions which were applicable to the

original permits prior to their surrender. The Executive Officer shall impose written conditions on any permits specifying emission limits or other conditions as necessary.

(H) The person submitting the control plan shall maintain such records (for a period of two years) and submit such information on furnace operation, source tests, monitoring data, and other information as required by the Executive Officer to determine compliance with the control plan.

(4) For installations using energy recovery, the NO_x emission limit shall be based on the following equation:

Energy Recovery Based NO_x Emission Limit = Emission Limit x A

Where: Emission Limit = lbs NO_x/ton of glass pulled per paragraphs (b)(1) and (b)(2)

$$A = 1 + \frac{\text{Energy Recovered (BTU/hr)}}{\text{Furnace Heat Input (BTU/hr)}}$$

(5) The energy recovered shall not be required for compliance with any other District rule, used as an offset pursuant to Regulation XIII, banked as an emission reduction credit, nor used for alternative emission control pursuant to paragraph (b)(3).

(6) Furnace heat input shall be based on the higher heating value of the fossil fuel fired and shall include the heat input due to electric boost.

(c) Compliance Determination

(1) For the purposes of this rule, nitrogen oxides shall be calculated as NO_2 on a dry basis, or by an alternative method requested by the operator and approved by the Executive Officer.

(2) All emission determinations shall be made in the as-found operating condition, except no compliance determination shall be made during start-up, shutdown, or under breakdown conditions.

(3) The averaging time for measurement of nitrogen oxides for compliance determination shall be 3 hours, except if an operator installs and maintains a continuous NO monitor in accordance with conditions set forth by th Executive Officer, the averaging time may be extended to 24 hours.

(4) The following expression shall be used to convert uncorrected observed volume in parts per million of NO_X to pounds of NO_X per ton of glass pulled at standard conditions of 68 degrees F and 29.92 inches of mercury:

$$\frac{(PPM_V\ NO_X)(46\ \text{grams/mole})(1.56 \times 10^{-7})(SDCFM)}{\text{Ton/hour of glass pulled}} = \frac{\text{Lbs } NO_X}{\text{Ton of glass pulled}}$$

(d) Exemptions

The provisions of this rule shall not apply to:

(1) Furnaces which are limited by Permit to Operate to 15 lbs/hour of NO_X or less.

(2) Glass remelt facilities using exclusively glass cullet, marbles, chips, or similar feedstock in lieu of basic glass-making raw materials.

(3) Furnaces used in the melting of glass for the production of glass tableware exclusively.

(4) Flat glass melting furnaces.

(5) Furnaces used in the melting of glass for the production of fiberglass exclusively.

(6) Idling furnaces.

(e) Effective Date

Any furnace rebuilt after July 1, 1983 shall comply with the provisions of paragraph (b)(1) of this rule upon commencement of operation. All other furnaces shall comply by December 31, 1987.

Any furnace rebuilt after December 31, 1987 shall comply with the provisions of paragraph (b)(2) of this rule upon commencement of operation. All other furnaces shall comply by December 31, 1992.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted February 13, 1998)(Amended November 4, 2005)(Amended July 7, 2017)

RULE 1118. CONTROL OF EMISSIONS FROM REFINERY FLARES

(a) Purpose and Applicability

The purpose of Rule 1118 is to monitor and record data on refinery and related flaring operations, and to control and minimize flaring and flare related emissions. The provisions of this rule are not intended to preempt any petroleum refinery, sulfur recovery plant and hydrogen production plant operations and practices with regard to safety. This rule applies to all flares used at petroleum refineries, sulfur recovery plants and hydrogen production plants.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) CLEAN SERVICE STREAM is a gas stream such as natural gas, hydrogen gas and/or liquefied petroleum gas. Other gases with a fixed composition that inherently have a low sulfur content and are vented from specific equipment may be classified as clean service streams if determined to be equivalent and approved in writing by the Executive Officer.

(2) EMERGENCY is a condition beyond the reasonable control of the owner or operator of a flare requiring immediate corrective action to restore normal and safe operation, which is caused by a sudden, infrequent and not reasonably preventable equipment failure, upset condition, equipment malfunction or breakdown, electrical power failure, steam failure, cooling air or water failure, instrument air failure, reflux failure, heat exchanger tube failure, loss of heat, excess heat, fire and explosion, natural disaster, act of war or terrorism or external power curtailment, excluding power curtailment due to an interruptible power service agreement from a utility. For the purpose of this rule, a flare event caused by poor maintenance, or a condition caused by operator error that results in a flare event shall not be deemed an emergency.

(3) ESSENTIAL OPERATIONAL NEED is an activity other than resulting from poor maintenance or operator error, determined by the Executive Officer to meet one of the following:

(A) Temporary fuel gas system imbalance due to:

(i) Inability to accept gas compliant with Rule 431.1 by an electric generation unit at the facility that produces electricity to be used in a state grid system, or

(ii) Inability to accept gas compliant with Rule 431.1 by a third party that has a contractual gas purchase agreement with the facility, or

(iii) The sudden shutdown of a refinery fuel gas combustion device that is not due to an emergency or breakdown;

(B) Venting of streams that cannot be recovered due to incompatibility with recovery system equipment or with refinery fuel gas systems, including supplemental natural gas or other gas compliant with Rule 431.1 that is used for the purpose of maintaining the higher heating value of the vent gas above 300 British Thermal Units per standard cubic foot. Such streams include inert gases, oxygen, gases with low or high molecular weights outside the design operating range of the recovery system equipment and gases with low or high higher heating values that could render refinery fuel gas systems and/or combustion devices unsafe;

(C) Venting of clean service streams to a clean service flare or a general service flare.

(4) FLARE is a combustion device that uses an open flame to burn combustible gases with combustion air provided by uncontrolled ambient air around the flame. When used as a verb means the combustion of vent gases in a flare device. Based on their use, flares are classified as:

(A) CLEAN SERVICE FLARE is a flare that is designed and configured by installation to combust only clean service streams.

(B) GENERAL SERVICE FLARE is a flare that is not a Clean Service Flare.

(5) FLARE EVENT is any intentional or unintentional combustion of vent gas in a flare. The start is determined by the vent gas flow velocity exceeding 0.10 feet per second and the end is determined when the vent gas flow velocity drops below 0.12 feet per second, or when the owner or operator can demonstrate that no more vent gas was combusted based upon the monitoring records of the flare water seal level and/or other parameters as approved by the Executive Officer in the Flare Monitoring and Recording Plan as described in subdivision (f). For flare events that can be attributed

to the same process unit(s) or equipment and has more than one start and end within a 24 hour period, it shall be considered a continuation of the same event, and not a separate or unique event. For a flare event that continues for more than 24 hours, each calendar day of venting of gases shall constitute a flare event.

(6) FLARE GAS RECOVERY SYSTEM is a system comprised of compressors, pumps, heat exchangers, knock-out pots and water seals, installed to prevent or minimize the combustion of vent gas in a flare.

(7) FLARE MINIMIZATION PLAN is a document intended to meet the requirements of subdivision (e).

(8) FLARE MONITORING SYSTEM is the monitoring and recording equipment used for the determination of flare operating parameters, including higher heating value, total sulfur concentration, combustion efficiency, standard volumetric flow rate and/or on/off flow indication.

(9) FLARE TIP VELOCITY is the velocity of flare gases exiting a flare tip averaged over 15 minute time periods, starting at 12 midnight to 12:15 am, 12:15 am to 12:30 am, and so on, concluding at 11:45 pm to midnight, and calculated as the volumetric flow divided by the area of the flare tip.

(10) HYDROGEN PRODUCTION PLANT is a facility that produces hydrogen by steam hydrocarbon reforming, partial oxidation of hydrocarbons, or other processes, using refinery fuel gas, process gas or natural gas, and which supplies hydrogen for petroleum refinery operations.

(11) NATURAL GAS is a mixture of gaseous hydrocarbons, with at least 80 percent methane (by volume), and of pipeline quality, such as the gas sold or distributed by any utility company regulated by the California Public Utilities Commission.

(12) NOTICE OF SULFUR DIOXIDE EXCEEDANCE is a notice issued by the Executive Officer to the owner or operator when the petroleum refinery has exceeded a performance target of this rule.

(13) PETROLEUM REFINERY is a facility that processes petroleum, as defined in the North American Industry Classification System (NAICS) as Industry No. 324110, Petroleum Refineries. For the purpose of this rule, all portions of the petroleum refining operation, including those at non-contiguous locations operating flares, shall be considered as one petroleum refinery.

(14) PILOT is an auxiliary burner used to ignite the vent gas routed to a flare.

(15) PLANNED FLARE EVENT is any flaring as a result from process unit(s) or equipment startup, shutdown, turnaround, maintenance, clean-up, and non-emergency flaring. Flaring from the startup of a process unit or equipment that is more than 36 hours after the end of an unplanned flare event of that same process unit shall be considered a Planned Flare Event.

(16) PURGE GAS is a continuous gas stream introduced into a flare header, flare stack and/or flare tip for the purpose of maintaining a positive flow that prevents the formation of an explosive mixture due to ambient air ingress.

(17) REPRESENTATIVE SAMPLE is a sample of vent gas collected from the location as approved in the Flare Monitoring and Recording Plan and analyzed utilizing test methods specified in subdivision (j).

(18) SHUTDOWN is the procedure by which the operation of a process unit or piece of equipment is stopped due to the end of a production run, or for the purpose of performing maintenance, repair and replacement of equipment. Stoppage caused by frequent breakdown due to poor maintenance or operator error shall not be deemed a shutdown.

(19) SMOKELESS CAPACITY is the maximum vent gas volumetric flow rate or mass flow rate that a flare is designed to operate without visible emissions.

(20) SPECIFIC CAUSE ANALYSIS is a process used by a facility subject to this rule to investigate the cause of a flare event, identify corrective measures and prevent recurrence of a similar event.

(21) STARTUP is the procedure by which a process unit or piece of equipment achieves normal operational status, as indicated by such parameters as temperature, pressure, feed rate and product quality.

(22) SULFUR RECOVERY PLANT is a facility that recovers elemental sulfur or sulfur compounds from sour gases and/or sour water generated by petroleum refineries.

(23) TURNAROUND is a planned activity involving shutdown and startup of one or several process units for the purpose of performing periodic maintenance, repair and replacement of equipment or installation of new equipment.

(24) VENT GAS is any gas generated at a facility subject to this rule that is routed to a flare, excluding assisting air or steam, which are injected in the flare combustion zone or flare stack via separate lines.

(25) VOLATILE ORGANIC COMPOUNDS (VOC) is as defined in Rule 102.

(26) WEB-BASED FLARE EVENT NOTIFICATION SYSTEM is a web page that allows facilities to notify the District about flaring events and to enter information such as the time that flaring begins and ends, vent gas flow rates, and emissions.

(c) Requirements

The owner or operator of a petroleum refinery, sulfur recovery plant or hydrogen production plant subject to this rule shall:

(1) Maintain a pilot flame present at all times a flare is operational.

(2) Operate all flares in a smokeless manner with no visible emissions except for periods not to exceed a total of five minutes during two consecutive hours, as determined by the test method in paragraph (j)(2).

(3) Except as specified in (c)(10), operate all general service flares at petroleum refineries such that the flare tip velocity is less than:

(A) 60 feet per second, or the lesser of 400 feet per second and V_{Max}, where:

$$Log_{10}(V_{Max}) = \frac{Net\ Heating\ Value_{Vent\ Gas} + 1{,}212}{850}$$

and the Net Heating $Value_{Vent\ Gas}$ in British Thermal Units per standard cubic foot is determined pursuant to monitoring required in subdivision (g).

(4) Effective January 30, 2019, general service flares at petroleum refineries shall maintain the net heating value of the flare combustion zone gas (NHV_{cz}) at or above 270 British Thermal Units per standard cubic feet, averaged over a 15-minute period. The owner or operator shall calculate NHV_{cz} as specified in Title 40 of the Code of Federal Regulations Part 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries.

(5) Conduct an annual acoustical or temperature leak survey of all pressure relief devices connected directly to a flare and repair leaking pressure relief devices no later than the next turnaround. The survey shall be conducted no earlier than 90 days prior to the scheduled process unit turnaround.

(6) Conduct a Specific Cause Analysis for any flare event, excluding planned shutdown, planned startup and turnarounds, when any of the thresholds in (c)(6)(A) through (C) is exceeded. Flare events resulting from non-standard

operating procedure during a planned shutdown, planned startup or turnaround, must also conduct a Specific Cause Analysis when any of the thresholds in (c)(6)(A) through (C) is exceeded.

(A) Emissions exceed 100 pounds of VOC; or

(B) Emissions exceed 500 pounds of sulfur dioxide; or

(C) More than 500,000 standard cubic feet of vent gas are combusted.

(7) Effective January 30, 2019, conduct a Specific Cause Analysis for any flare event at a petroleum refinery when the smokeless capacity of the flare is exceeded and either:

(A) The visible emission limits in paragraph (c)(2) or Rule 401 are exceeded; or

(B) The flare tip velocity limits in subparagraph (c)(3)(A) is exceeded.

(8) Submit all Specific Cause Analyses as required by paragraphs (c)(6) or (c)(7) to the Executive Officer within 30 days of the start of the flare event, identifying the cause and duration of the flare event, and any mitigation and corrective actions taken or to be taken to prevent recurrence of a similar event. The owner or operator may request that the Executive Officer grant an extension of up to 15 days to submit the Specific Cause Analysis.

(9) All corrective actions identified in a Specific Cause Analysis required under paragraph (c)(6) or (c)(7) shall be implemented within 45 days of the flare event for which the Specific Cause Analysis was required. A corrective action identified in a Specific Cause Analysis may be implemented more than 45 days after the flare event if justified in a Specific Cause Analysis by showing the required elements in (c)(9)(A):

(A) An implementation schedule to complete the corrective action as soon as practicable, an explanation of the reason(s) why more than 45 days is needed to complete the corrective action, and a demonstration that the implementation schedule is the soonest practicable.

(B) After reviewing the Specific Cause Analysis, the Executive Officer may request additional information justifying why the implementation schedule beyond 45 days is the soonest practical.

(C) Within 30 days of receipt of all information necessary to evaluate the Specific Cause Analysis, the Executive Officer may require a modification to the corrective action or schedule, including increments of progress, and shall notify the operator in writing with

an explanation describing why the corrective action is inadequate or the schedule can be shortened.

(10) Effective January 30, 2019, no flare event at a petroleum refinery shall occur above the smokeless capacity of the flare under the following conditions:

(A) When the limits in clauses (c)(10)(D)(i) or (ii) are exceeded and the flare event is due to operator error or poor maintenance.

(B) Two times at a flare in any consecutive three year period, if the flare events exceed the limits in clauses (c)(10)(D)(i) or (ii) and a Specific Cause Analysis shows the same cause for both flare events from the same equipment.

(C) Three times at a flare in any consecutive three year period, if the flare events exceed the limits in clauses (c)(10)(D)(i) or (ii), and the flare events are due to any cause.

(D) Pursuant to subparagraphs (c)(10)(A) through (C), flare events shall not exceed:

(i) The visibility limits in paragraph (c)(2) or Rule 401; or

(ii) The velocity limits in subparagraph (c)(3)(A).

(E) If more than one flare exceeds the limits in (c)(10)(D)(i) or (ii) during a single event, and a Specific Cause Analysis demonstrates that the flaring events at these flares have the same root cause, then one flaring event at each flare shall be considered to have exceeded these limits.

(F) Notwithstanding the provisions in Rule 430 - Breakdown Provisions and Rule 2004 - Requirements, the prohibitions listed in paragraph (c)(10) of this rule shall be applicable during all periods including breakdowns, with the exception of exemptions listed in subdivision (k).

(11) Conduct an analysis and determine the relative cause of any other flare events where more than 5,000 standard cubic feet of vent gas are combusted. When it is not feasible to determine relative cause, state the reason why it was not feasible to make the determination.

(12) Maintain the following information and submit to the Executive Officer upon request:

(A) Detailed process flow diagrams of all upstream equipment and process units venting to each flare and a complete description and

technical specifications for each flare system components such as flares, associated knock-out pots, surge drums, water seals and flare gas recovery systems, and an audit of the vent gas recovery capacity of each flare system, the available storage for excess vent gases and the scrubbing capacity available for vent gases, including any limitations associated with scrubbing vent gases for use as a fuel; and

(B) A description of the equipment, processes and procedures installed or implemented within the last five years to reduce flaring; and

(C) A descriptions of any equipment, processes or procedures the owner or operator plans to install or implement to eliminate or reduce flaring. The description shall specify the scheduled year of installation or implementation.

(13) Submit to the Executive Officer 12 months after July 7, 2017 a Scoping Document that evaluates the feasibility of minimizing flaring emissions that includes the following components:

(A) The Scoping Document shall describe how a facility operator or owner can reduce emissions from all planned flare events and essential operational needs flare events, to emission limits specified in subparagraph (c)(13)(B). The Scoping Document shall describe two potential alternatives for each applicable level in (c)(13)(B)(i) through (iv), and shall include an analysis of the following:

(i) proposed physical controls and/or operating practices,

(ii) technical feasibility constraints,

(iii) approximate cost (initial capital and ongoing),

(iv) timing constraints.

(B) The Scoping Document shall analyze the feasibility of achieving each of the following annual emission levels for planned flare events and essential operational needs as soon as feasible:

(i) 0.10 tons of sulfur oxides per million barrels of a petroleum refinery's 2004 calendar year crude processing capacity,

(ii) 0.05 tons of sulfur oxides per million barrels of a petroleum refinery's 2004 calendar year crude processing capacity, and

(iii) 0.01 tons or lower of sulfur oxides per million barrels of a petroleum refinery's 2004 calendar year crude processing capacity, and

(iv) 0.1 tons per year of volatile organic compounds from flares that only vent clean service streams.

(C) Using the criteria described in clauses (c)(13)(A)(i) through (iv), the Scoping Document shall analyze the feasibility of installing and maintaining at least three physical or automated process controls as soon as feasible that can be used together or separately to avoid or minimize emergency flare events described in (c)(13)(C)(i) through (iv).

(i) A sudden influx of vent gas into a flare gas header. The amount of vent gas is equivalent to the highest vent gas flow rate, averaged over a 15-minute period, vented to the flare gas header from all emergency flare events at that flare since January 1, 2012.

(ii) A sudden loss of the process unit with the highest fuel gas consumption rate of recovered flare gas at that facility, averaged over a 15-minute period, since January 1, 2012.

(iii) A sudden loss of all external electrical power to the facility.

(iv) A sudden loss of all electrical power from any non-backup electrical generation unit that is currently operating at a facility.

(D) For each flare operated at the facility, the Scoping Document shall contain a description of:

(i) The smokeless capacity, and documentation for how the smokeless capacity was determined;

(ii) The maximum vent gas flow rate;

(iii) The maximum supplemental gas flow rate;

(iv) Process flow diagram which shows all gas lines that are associated with the flare (e.g., waste, purge, supplemental gases, assist steam);

(v) Detailed process flow diagrams of all associated upstream equipment and process units venting to each flare, with a general description of components, identifying the type and location of each flare and all associated control equipment including but not limited to knockout drums, flare headers, assist, and ignition systems.

(14) Operate all flares in such a manner that minimizes all flaring and that no vent gas is combusted except during emergencies, shutdowns, startups, turnarounds or essential operational needs.

(15) Prevent the combustion in any flare of vent gas with a hydrogen sulfide concentration in excess of 160 ppm, averaged over three hours, excluding any vent gas resulting from an emergency, shutdown, startup, or process upset.

(d) Performance Targets

The owner or operator of a petroleum refinery subject to this rule shall minimize flare emissions and meet a performance target for sulfur dioxide emissions from flares of less than 0.5 tons per million barrels of crude processing capacity, calculated as an average over one calendar year.

(1) Compliance with this performance target shall be determined at the end of each calendar year based on the facility's annual flare sulfur dioxide emissions normalized over the crude oil processing capacity in calendar year 2004.

(2) In the event the petroleum refinery specific performance target of subdivision (d) is exceeded for any calendar year, the Executive Officer may issue a Notice of Sulfur Dioxide Exceedance that shall become a part of the refinery compliance record.

(3) In the event the petroleum refinery specific performance target of subdivision (d) is exceeded for any calendar year, the owner or operator of the petroleum refinery shall:

(A) Submit a Flare Minimization Plan pursuant to subdivision (e), and

(B) Pay the District mitigation fees, within 90 days following the end of a calendar year for which the performance target was exceeded, according to the following schedule:

(i) If excess emissions are no more than ten percent of the petroleum refinery specific performance target, $25,000 per ton for all sulfur dioxide emission(s) in excess of the applicable performance target, or

(ii) If excess emissions are greater than ten percent but no more than twenty percent of the petroleum refinery specific performance target, $50,000 per ton of all sulfur dioxide

emission(s) in excess of the applicable performance target, or

(iii) If excess emissions are greater than twenty percent of the petroleum refinery specific performance target, $100,000 per ton of all sulfur dioxide emission(s) in excess of the applicable performance target.

(e) Flare Minimization Plan

(1) The owner or operator of a petroleum refinery exceeding the performance target in subdivision (d) shall submit, no later than 90 days after the end of a calendar year with emissions exceeding the annual performance target, a complete Flare Minimization Plan for approval by the Executive Officer. This plan shall constitute a plan pursuant to Rule 221 and fees shall be assessed pursuant to Rule 306. The plan application shall list all actions to be taken by the petroleum refinery to meet the performance target in subdivision (d), and shall include the following information:

(A) A complete description and technical specifications for each flare and associated knock-out pots, surge drums, water seals and flare gas recovery systems;

(B) Refinery policies and procedures to be implemented and any equipment improvements to minimize flaring and flare emissions and comply with the performance target of subdivision (d) for:

(i) Planned turnarounds and other scheduled maintenance, based on an evaluation of these activities during the previous five years;

(ii) Essential operational needs and the technical reason for which the vent gas cannot be prevented from being flared during each specific situation, based on supporting documentation on flare gas recovery systems, excess gas storage and gas treating capacity available for each flare; and

(iii) Emergencies, including procedures that will be used to prevent recurring equipment breakdowns and process upsets, based on an evaluation of the adequacy of maintenance schedules for equipment, process and control instrumentation.

(C) Any flare gas recovery equipment and treatment system(s) to be installed to comply with the performance targets of subdivision (d).

(2) The Executive Officer will make the Flare Minimization Plans available for public review for a period of 60 days and respond to comments received prior to plan approval. The Executive Officer will approve a plan upon determining that it meets the requirements of subdivision (e), or notify the owner or operator in writing that the plan is deficient and specify the required corrective action. If the owner or operator fails to submit an amendment within 45 days to correct the deficiency, the Executive Officer will deny the Flare Minimization Plan. The facility shall be deemed in violation of this rule upon the Executive Officer's denial of the Flare Minimization Plan.

(3) The owner or operator of a petroleum refinery having an existing approved Flare Minimization Plan shall, no later than 90 days after the end of a calendar year, submit for the approval of the Executive Officer a revised Flare Minimization Plan, subject to the provisions of paragraphs (e)(1) and (e)(2), in the event the annual performance target for that calendar year is exceeded.

(4) The owner and operator of a petroleum refinery shall comply with all provisions of an approved Flare Minimization Plan. Violation of any of the terms of the plan is a violation of this rule.

(f) Flare Monitoring and Recording Plan Requirements

(1) The owner or operator of an existing petroleum refinery, sulfur recovery plant or hydrogen production plant, upon modification or replacement of any monitoring equipment included in an approved Flare Monitoring and Recording Plan shall submit a revised Flare Monitoring and Recording Plan, complete with an application and appropriate fees, for each facility to the Executive Officer for approval. This plan shall constitute a plan pursuant to Rule 221 and fees shall be assessed pursuant to Rule 306. Each Flare Monitoring and Recording Plan shall contain the information described in paragraph (f)(4) of this rule.

(2) The owner or operator of an existing petroleum refinery, sulfur recovery plant or hydrogen production plant shall:

(A) Comply with the most current Flare Monitoring and Recording Plan approved by the Executive Officer. The current plan shall remain

in effect until any revised Flare Monitoring and Recording Plan, submitted pursuant to paragraph (f)(1) is approved by the Executive Officer.

(B) The owner or operator of a petroleum refinery, sulfur plant or hydrogen plant shall comply with all provisions of an approved Flare Monitoring and Recording Plan. Violation of any of the terms of the plan is a violation of this rule.

(3) The owner or operator of a new or an existing non-operating petroleum refinery, sulfur recovery plant or hydrogen production plant starting or restarting operations that were not shut down from a turnaround or other shut-down as part of normal operations on or after July 7, 2017 shall:

(A) Provide the Executive Officer a written notice of the date of start-up no later than seven (7) days prior to starting or commencing operations.

(B) No later than 180 days prior to the initial startup or resumption of operations, submit a complete application and appropriate fees for a Flare Monitoring and Recording Plan to the Executive Officer for approval. This plan shall constitute a plan pursuant to Rule 221 and fees shall be assessed pursuant to Rule 306. Each Flare Monitoring and Recording Plan shall contain the information described in paragraph (f)(4) of this rule.

(4) Each Flare Monitoring and Recording Plan shall include, at a minimum, the following:

(A) A facility plot plan showing the location of each flare in relation to the general plant layout.

(B) Type of flare service, as defined in paragraph (b)(4), and information regarding design capacity, operation and maintenance for each flare.

(C) The following information regarding pilot and purge gas for each flare:

(i) Type(s) of gas used;

(ii) Actual set operating flow rate in standard cubic feet per minute;

(iii) Maximum total sulfur concentration expected for each type of gas used; and

(iv) Average higher (gross) heating value expected for each type of gas used.

(D) Drawing(s), preferably to scale with dimensions, and an as-built process flow diagram of the flare(s) identifying major components, such as flare header, flare stack, flare tip(s) or burner(s), any bypass line, purge gas system, pilot gas system, ignition system, assist system, water seal, knockout drum and molecular seal.

(E) Detailed process flow diagrams identifying the type and location of each flare and all associated control equipment including but not limited to knockout drums, flare headers, assist, and ignition systems, and a representative flow diagram showing the interconnections of the flare system(s) with vapor recovery system(s), process units and other equipment as applicable.

(F) A complete description of the assist system process control, flame detection system and pilot ignition system.

(G) A complete description of the gas flaring process for an integrated gas flaring system which describes the method of operation of the flares (e.g. sequential, etc.).

(H) A complete description of the flare gas recovery system and vapor recovery system(s) which have interconnection to a flare, such as compressor description(s), design capacities of each compressor and the vapor recovery system, and the method currently used to determine and record the amount of vapors recovered.

(I) Drawing(s) with dimensions, preferably to scale, showing the following information for proposed vent gas:

(i) Sampling locations; and

(ii) Flow meter device(s), on/off flow indicators, higher heating value analyzer, and total sulfur analyzer locations and the method used to determine the location.

(J) A detailed description of manufacturer's specifications, including but not limited to, make, model, type, range, precision, accuracy, calibration, maintenance, a quality assurance procedure and any other specifications and information referenced in Attachment A for all existing and proposed flow metering devices, on/off flow indicating devices, higher heating value and total sulfur analyzers for vent gas.

(K) A complete description and the data used to determine and to set the actuating and de-actuating and the method to be used for verification of each setting for each on/off flow indicator.

(L) A complete description of proposed analytical and sampling methods or estimation methods, if applicable, for determining higher (gross) heating value and total sulfur concentration of the flare vent gas.

(M) A complete description of the proposed data recording, collection, management, and any other specifications and information referenced in Attachment A for each flare monitoring system.

(N) A complete description of proposed method to determine, monitor and record total volume, higher heating value, and total sulfur concentration of gases vented to a flare for each flare event pursuant to the requirements of this rule.

(O) For new or existing non-operating petroleum refinery, sulfur recovery plant or hydrogen production plant starting or restarting operations, other than from standard turnarounds or process unit shut-downs, on or after July 7, 2017, a schedule for the installation and operation of each flare monitoring system.

(P) A complete description of any proposed alternative criteria to determine a sampling flare event for each specific flare, if any, and detailed information used for the basis of establishing such criteria.

(g) Operation, Monitoring and Recording Requirements

The owner or operator of a flare subject to this rule shall comply with the following:

(1) On or before six (6) months after approval of the Flare Monitoring and Recording Plan or Revised Flare Monitoring and Recording Plan, start monitoring and recording in accordance with subdivision (g) and the provisions in the approved Flare Monitoring and Recording Plan or Revised Flare Monitoring and Recording Plan.

(2) Notwithstanding the provisions in Rule 430 - Breakdown Provisions and Rule 2004 - Requirements, the Operation Monitoring and Recording Requirements of this rule shall be applicable during all periods including breakdowns except as specified in paragraph (g)(5)(A).

(3) Perform monitoring and recording of the operating parameters, as applicable, according to the monitoring and recording requirements and

frequency shown in Table 1 (including footnotes) below, except as specified in paragraph (g)(4) and (g)(5).

TABLE 1

TYPE OF FLARE	OPERATING PARAMETER	MONITORING AND RECORDING
Clean Service	Gas Flow[1]	Measured and Recorded[2] Continuously with Flow Meter(s) and/or On/Off Flow Indicator(s)
	Gas Higher Heating Value [3]	Calculated or Continuously Measured and Recorded with a Higher Heating Value Analyzer
	Total Sulfur Concentration[4]	Calculated or Semi-Continuously Measured and Recorded with a Total Sulfur Analyzer
General Service	Gas Flow[1]	Measured and Recorded[2] Continuously with Flow Meter(s) with or without on/off flow indicator(s)
	Gas Higher Heating Value [3]	Continuously Measured and Recorded with a Higher Heating Value Analyzer
	Total Sulfur Concentration[4]	Semi-Continuously Measured and Recorded with a Total Sulfur Analyzer

1. Standard Cubic Feet per Minute.
2. All flow meters, flow indicators and recorders shall meet or exceed the minimum specifications in Attachment A.
3. Higher (Gross) Heating Value in British Thermal Units per Standard Cubic Foot.
4. Total Sulfur as SO_2, ppmv.

(4) Alternative Flare Vent Gas Sampling

(A) In cases where sampling of vent gas is exempted pursuant to paragraph (k)(1), the owner or operator of a gas flare shall identify for each flare event, the cause of event, the process system(s) involved, date and time event started and duration and any other information related to the type of vent gas (e.g. total sulfur concentration) which is necessary to calculate flare emissions using the guidelines in Appendix B for substituted data. The estimated emissions, subject to approval by the Executive Officer as representative of emissions from that flare event, shall be reported and submitted with the quarterly report as specified in paragraph (i)(4).

(5) Flare Monitoring System

(A) Maintain any flare monitoring system, used to ensure compliance with paragraph (g)(3) of this rule, in good operating condition at all times when the flare that it serves is operational, except when out of service due to:

(i) Breakdowns and unplanned system maintenance, which shall not exceed 96 hours, cumulatively, per quarter for each reporting period; or,

(ii) Planned maintenance, which shall not exceed 14 days per 18 month period commencing the start of flare monitoring and recording, provided that a written notification detailing the reason for maintenance and methods that will be used during the maintenance period to determine emissions associated with flare events is provided to the Executive Officer prior to, or within 24 hours of, removal of the monitoring system from service.

(B) A flare monitoring system may be used to measure and record the operating parameters required in paragraph (g)(3) of this rule for more than one flare provided that:

(i) All the gases being measured and recorded are delivered to the flare(s) for combustion; and,

(ii) If the flare monitoring system is used to measure and record the operating parameters for general service flares, the flare monitoring system shall consist of a continuous vent gas

flow meter, a continuous higher heating value analyzer, a total sulfur analyzer and recorder that meet the requirements specified in Attachment A.

(6) Monitor the presence of a pilot flame using a thermocouple or any other equivalent device approved by the Executive Officer to detect the presence of a flame.

(7) Monitor all flares for visible emissions using color video monitors with date and time stamp, capable of recording a digital image of the flare and the flame of flares that are not enclosed, at a rate of no less than one frame per minute. Effective January 30, 2019, monitor all flares for visible emissions using color video monitors with date and time stamp, capable of recording a digital image of the flare, the flame of flares that are not enclosed, and a sufficient area above the flame of all flares that is suitable for visible emissions observations, at a rate of no less than one frame every 15 seconds.

(8) All general service flares shall:

(A) Have a flow meter installed in a manner and at a location that would allow for accurate measurements of the total volume of vent gas to each flare. If the flow meter cannot be placed in the location that would allow for accurate measurement due to physical constraints, the operator shall retrofit or equip the existing flow meters with totalizing capability to indicate the true net volume of gas flow to each flare.

(B) Monitor and record the pilot gas and purge gas flow to each flare using a flow meter or equivalent device approved by the Executive Officer.

(9) No later than January 30, 2019, for all general service flares:

(A) Install, operate, calibrate, maintain, and record data from any monitoring systems required by Title 40 of the Code of Federal Regulations Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries that are not already required by paragraph (g).

(h) Recordkeeping Requirements

The owner or operator of a flare shall maintain records in a manner approved by the Executive Officer for a period of five (5) years for all the information required to be monitored under paragraphs (g)(3), (g)(4), (g)(5), (g)(6), (g)(7), (g)(9), and

subparagraph (g)(8)(B) as applicable and make such records available to the Executive Officer upon request.

(i) Notification and Reporting Requirements

The owner or operator of a flare shall:

(1) Provide a 24 hour telephone service for access by the public for inquiries about flare events. The owner or operator shall provide the Executive Officer in writing the name and number of the initial contact and any contact update.

(2) Notify the Executive Officer via the Web-Based Flare Event Notification System within one hour from the start of any unplanned flare event with emissions exceeding either 100 pounds of VOC or 500 pounds of sulfur dioxide, or exceeding 500,000 standard cubic feet of flared vent gas.

(3) Notify the Executive Officer via the Web-Based Flare Event Notification System at least 24 hours prior to the start of a planned flare event with emissions exceeding either 100 pounds of VOC or 500 pounds of sulfur dioxide, or 500,000 standard cubic feet of combusted vent gas. Within one hour of the start of a planned flare event, submit a notification via the Web-Based Flare Event Notification System, referencing the notification number assigned to the planned flare event at the time of the original notification.

(4) Notify the Executive Officer via the Web-Based Flare Event Notification System within one hour after the cumulative daily total amount of flare gas vented from a flare exceeds 100,000 standard cubic feet, if a notification has not already been provided for that day pursuant to paragraphs (i)(2) or (i)(3).

(5) If the Web-Based Flare Event Notification System is not available, or if functions within the Web-Based Flare Event Notification System do not allow facilities to enter the necessary information required in (i)(2) through (i)(4), then notifications shall be made to 800-CUT-SMOG (800-288-7664).

(6) Submit a quarterly report in an electronic format approved by the Executive Officer within 30 days after the end of each quarter. Each quarterly report shall be certified for accuracy in writing by the responsible facility official and shall include the following:

(A) The information required to be monitored under paragraphs (g)(3), (g)(4), (g)(5), (g)(6), and (g)(9), and subparagraph (g)(8)(C) of this rule. Notwithstanding the January 30, 2019 compliance date in

paragraph (g)(9), data collected pursuant to paragraph (g)(9) shall be made available in the first quarterly report after the applicable monitors have been certified.

(B) The total daily and quarterly emissions of criteria pollutants from each flare and each flare event along with all information used to calculate the emissions, which includes standard volumes, higher heating values and total sulfur concentration of the vent gases, event duration and emission factors. Identify each reported value of flow rate, higher heating values or sulfur concentration reported using Data Substitution Procedures in Attachment B, and identify the data substitution method used and the date the method was approved by the Executive Officer, if applicable.

(i) Emissions from flares shall be calculated using the Emissions Calculation Procedures outlined in Attachment B: Guidelines for Emissions Calculations.

(ii) During all down time periods of the monitoring system, emissions shall be calculated using the Missing Data Substitution Procedures outlined in Attachment B: Guidelines for Emissions Calculations.

(C) The description of the cause of each flare event as analyzed pursuant to paragraphs (c)(6), (c)(7), and (c)(11) and the category of flare event such as emergency, shutdown, startup or essential operational need or other specific cause(s), and the associated emissions.

(D) Records of annual acoustical or temperature leak survey conducted pursuant to paragraph (c)(5). The record shall include identification of all valves inspected, date of inspections, and the name of the person(s) conducting the inspections.

(E) Flare monitoring system downtime periods, including dates and times and explanation for each period.

(F) A copy of written notices for all reportable air releases related to any flare event, as required by 40 CFR, Part 302 - Designation, Reportable Quantities, and Notification and 40 CFR, Part 355 - Emergency Planning and Notification, if applicable.

(j) Testing and Monitoring Methods

(1) For the purpose of this rule, the test methods listed below shall be used:

(A) The higher (gross) heating value of vent gases shall be determined by:

(i) ASTM Method D4809-13, ASTM Method D 3588-98(2011), ASTM Method D4891-13, or other ASTM standard as approved by the Executive Officer, and

(ii) With a higher heating value analyzer that meets or exceeds the specifications in Attachment A.

(B) The total sulfur concentration, expressed as sulfur dioxide, shall be determined by:

(i) District Method 307-91 or ASTM Method D 5504-12, or other ASTM standard as approved by the Executive Officer, and

(ii) With a total sulfur analyzer that meets or exceeds the specifications in Attachment A.

(C) The vent gas flow shall be determined by a flow measuring device that meets or exceeds the specifications described in Attachment A, as applicable. The accuracy of all flow meters shall be verified every twelve months according to the manufacturers' procedures and the results shall be submitted to the Executive Officer within 30 days after the reports are issued.

(2) Visible emissions pursuant to paragraph (c)(2) shall be determined by US EPA Method 22, 40 CFR Part 60 Appendix A.

(3) Notwithstanding paragraph (j)(1), continuous monitoring systems certified under Rule 2011 - Requirements for Monitoring, Reporting and Recordkeeping of Oxides of Sulfur (SOx) Emissions and Rule 2012 - Requirements for Monitoring, Reporting and Recordkeeping of Oxides of Nitrogen (NOx) Emissions, may be used for the monitoring of vent gases.

(k) Exemption

(1) Notwithstanding a flare monitoring system, consisting of a flow meter, higher heating value analyzer, net heating value analyzer and total sulfur analyzer that is in operation, sampling and analyses of representative samples for higher heating values, net heating values, and total sulfur concentration pursuant to paragraph (g)(3) may not be required for any flare event that:

(A) Is a result of a catastrophic event including a major fire or an explosion at the facility such that collecting a sample is infeasible or constitutes a safety hazard, or

(B) Constitutes a safety hazard to the sampling personnel at the sampling location approved in the Flare Monitoring and Recording Plan during the entire flare event, provided that a sample is collected at an alternative location where it is safe as determined by the facility owner or operator. The owner or operator shall demonstrate to the Executive Officer that the sample collected at an alternative location is representative of the flare event.

(2) Any sulfur dioxide emissions, visible emissions prohibited in paragraph (c)(10), and flare tip velocities that exceed limits in subparagraph (c)(3)(A) from flare events caused by external power curtailment beyond the operator's control (excluding interruptible service agreements), natural disasters or acts of war or terrorism shall not count towards either:

(A) The performance targets specified in subdivision (d) upon submittal of documentation proving the existence of such events and certified in writing by the petroleum refinery official responsible for emission reporting; or

(B) The prohibitions listed in paragraph (c)(10).

ATTACHMENT A

FLARE MONITORING SYSTEM REQUIREMENTS

The components of each flare monitoring system must meet or exceed the minimum specifications listed below. Components with other specifications may be used provided the owner or operator of a gas flare can demonstrate that the specifications are equivalent and has been approved by the Executive Officer.

1. Continuous Flow Measuring Device

The monitor must be sensitive to rapid flow changes, and have the capability of reporting both instantaneous velocity and totalized flow. Materials exposed to the flare gas shall be corrosion resistant. If required by the petroleum refinery or the hydrogen production plant, the manufacturer must provide an enclosure with an area classification rating of Class 1, Division 2, Groups A, B, C, D, and is FM and CSA approved. The monitor shall (i) feature automated daily calibrations at low and high ranges, and (ii) shall signal alarms if the calibration error or drift is exceeded, provided that the monitor is equipped with such capability. The volumetric flow measuring device may consist of one or more flow meters, and, as combined, shall meet the following specifications.

Velocity Range:	0.1-250 ft/sec
Repeatability:	± 1% of reading over the velocity range
Accuracy:	± 20% of reading over the velocity range of 0.1-1 ft/s and ± 5% of reading over the velocity range of 1-250 ft/s
Installation:	Applicable AGA, ANSI, API, or equivalent standard; hot tap capability. If applicable, the manufacturer must specify the straight-run pipe requirements in terms of the minimum upstream and downstream distances from the nearest flow disturbances to the device
Flow Rate Determination:	Must be corrected to one atmosphere pressure and 68^0 F and recorded as one-minute averages
Data Records	Measured continuously and recorded over one-minute averages. The instrument shall be capable of storing or transferring all data for later retrieval
QA/QC	Shall comply with the flow QA/QC requirements of District Rule 218.1. An annual verification of accuracy is required, and shall be specified by the manufacturer. Note: A flow RATA is generally infeasible due to safety concerns

2. On/Off Flow Indicator

The on/off flow indicator is a device which is used to demonstrate the flow of vent gas during a flare event, and shall meet or exceed specifications as approved by the Executive Officer. The on/off flow indicator setting shall be verifiable.

3. Data Recording System

All data as generated by the above flow meters and the on/off flow indicators must be continuously recorded by strip chart recorders or computers. The strip chart must have a minimum chart width of 10 inches, a readability of 0.5% of the span, and a minimum of 100 chart divisions. The computer must have the capability to generate one-minute average data from that which is continuously generated by the flow meters and the on/off limit switch.

4. Continuous and Semi-continuous Gaseous Stream Higher Heating Value (HHV) Flare Monitoring Systems

The following is intended to ensure that verifiable, meaningful, and representative data are collected from continuous and semi-continuous gaseous stream HHV flare measurement monitoring devices systems. All procedures are subject to Executive Officer review and approval.

General Requirements:

a. The monitoring system must be capable of measuring HHV within the requirements of the rule.

b. The monitoring system must be capable of adjusting to rapid changes in HHV within a reasonable time meeting the definition of a continuous or semi-continuous monitoring system as defined in the applicable rule and as approved by the Executive Officer.

c. Monitoring system sampling interfaces and analyzers in contact with sample gas must be compatible with sample gases and able to resist flow temperatures and pressures.

d. The sampling inlet system interface must be heated as necessary so as to prevent condensation.

e. Sample gas must be conditioned such that the sample is free of particulate or liquid matter.

f. The sample must flow without impediment through the instrument sampling system sampling interface and analyzer.

g. Use an enclosure with an area classification rating of Class 1, Division 2, Groups A, B, C, D, and is FM or CSA approved. The enclosure must be able to maintain a stable analyzer temperature as required for analyzer performance.

h. The monitoring system must feature automated daily calibrations calibration checks, minimally at mid-range, and preferably at both applicable Federal minimum BTU requirements (low end) and 95% of full scale (high end) ranges at low and high ranges

i. The monitoring system analyzer must include an output compatible with a Data Acquisition System (DAS) or similar system that can process data generated by the analyzer and record the results. A data recorder compatible with analyzer output and capable of recording analyzer output must be supplied with the instrument.

j. Each monitoring system must have a written quality assurance/quality control (QA/QC) plan approved by the Executive Officer and available for District inspection.

k. Maintain a maintenance log for each monitoring system.

l. Perform routine maintenance and repair as recommended by the manufacturer or according to a standard operating procedure submitted and approved by the Executive Officer.

m. The placement and installation of monitoring systems is critical for collecting representative information on HHV gas content. Factors that should be considered in placement of a sampling interface include but are not limited to safety, ensuring the sample is representative of the source, ease of placement and access. Sampling interfaces, conditioning systems and enclosures may be shared with other instrumentation, if appropriate.

n. Perform at monitoring system start-up and on an annual basis a relative accuracy test audit (RATA) which is the ratio of the sum of the absolute mean difference between the monitoring system generated data and the value determined using ASTM D1945-03 and ASTM D3588-91, ASTM D 4891-89, or other ASTM standard as approved by the Executive Officer. See rule 218.1 (a)(23) for calculations.

o. Periodically perform a calibration curve or linearity verification error test according to permitting conditions and or on a schedule approved by the Executive Officer. Typically, this calibration curve will be prepared from standards representing a:

    i. 10-30 percent of the measurement range

    ii. 40-60 percent of the measurement range

    iii. 80-100 percent of the measurement range

p. Analyzers with auto calibration check capability should be checked daily unless a different calibration frequency is approved by the Executive Officer. For analyzers without auto calibration check capability, submit a calibration check frequency request including supporting documentation to the Executive Officer for comment and approval.

q. Periodically perform a zero drift test. Allowed zero drift should be consistent with a properly operating system. See rule 218.1 (a)(32) for calculations.

r. Retain records on the valid data return percentage.

s. Retain records on the availability or up-time of the monitoring system.

t. Retain records on the breakdown frequency and duration of the breakdown.

u. Retain records on excursions beyond quality control limits stated in the QA plan.

5. Continuous and Semi-continuous Gaseous Stream Total Sulfur Monitoring Systems

The following is intended to ensure that verifiable, meaningful, and representative data are collected from continuous and semi-continuous gaseous stream sulfur monitoring systems. All procedures are subject to Executive Officer review and approval.

General Requirements

a. The monitoring system must be capable of measuring total sulfur concentration within the requirements of the rule.

b. The monitoring system must be capable of adjusting to rapid changes in sulfur concentration within a reasonable time as defined in the applicable rule and as approved by the Executive Officer.

c. Monitoring system in contact with sample gas must be inert to sulfur gases and resistant to corrosion.

d. The sampling inlet system interface system must be heated as necessary so as to prevent condensation.

e. Sample gas must be conditioned such that the sample is free of particulate or liquid matter.

f. The sample must flow without impediment through the instrument sampling system sampling interface and analyzer.

g. Use an enclosure with an area classification rating of Class 1, Division 2, Groups A, B, C, D, and is FM or CSA approved. The enclosure must be able to maintain a stable analyzer temperature as required for analyzer performance.

h. The monitoring system must feature automated daily calibrations at low and high ranges, and shall signal alarms if the calibration error or drift is exceeded.

i. The monitoring system must include a Data Acquisition System (DAS) or similar system that can process data generated by the analyzer and record the results.

j. Each monitoring system must have a written quality assurance/quality control (QA/QC) plan approved by the Executive Officer and available for District inspection.

k. Maintain a maintenance log for each monitoring system.

l. Perform routine maintenance as recommended by the manufacturer or according to a standard operating procedure submitted and approved by the Executive Officer.

m. The placement and installation of monitoring systems is critical for collecting representative information on total sulfur gas concentration. Factors that should be considered in placement of a sampling interface include but are not limited to safety, ensuring the sample is representative of the source, ease of placement and access. Sampling interfaces,

conditioning systems and enclosures may be shared with other instrumentation, if appropriate.

n. Perform at monitoring system start-up and on an annual basis a relative accuracy test audit (RATA) which is the ratio of the sum of the absolute mean difference between the monitoring system generated data and the value determined using SCAQMD Laboratory Method 307-91, ASTM D5504-01 or other ASTM standard as approved by the Executive Officer. See rule 218.1(a)(23) for calculations.

Note: Facilities are reminded that there are many critical issues for the collection of representative and monitoring system comparable gas samples destined for Method 307-91 or ASTM D5504-01 analysis.

o. Facilities are strongly encouraged to use calibration gases prepared using a NIST hydrogen sulfide SRM, Nederlands Meetinstituut NMi or a NTRM standard as the primary reference.

p. Periodically perform a calibration curve or linearity verification performed according to permitting conditions and/or on a schedule approved by the Executive Officer. Typically, this calibration curve will be prepared from standards representing:

i. 10 to 30 percent of the measurement range

ii. 40 to 60 percent of the measurement range

iii. 80 to 100 percent of the measurement range

q. Analyzers with auto calibration capability shall be calibrated daily unless a different calibration frequency is approved by the Executive Officer. For analyzers without auto calibration capability, submit a calibration frequency request, including supporting documentation to the Executive Officer for comment and approval.

r. Seven Day Calibration Error Test shall be performed by evaluating the analyzer performance over seven consecutive days as necessary. The calibration drift should not exceed five percent of the full-scale range.

s. Analyze daily a control or drift test sample or standard. Adequate system analyzer performance is demonstrated by recoveries of 90 to 110 percent of the theoretical amounts for total reduced sulfur species in the test gas.

t. Periodically perform an analyzer blank test to evaluate the presence of analyzer leaks or wear on sample valves and related components. Replace components as necessary to restore the analyzer to nominal function. A blank should yield results below the monitoring plan approved lower measurement range.

u. Periodically perform a zero drift test. Allowed zero drift should be consistent with a properly operating system analyzer. See rule 218.1(a)(32) for calculations.

v. Retain records on the valid data return percentage.

w. Retain records on the availability or up-time of the monitoring system.

x. Retain records on the breakdown frequency and duration of the breakdown.

y. Retain records on excursions beyond quality control limits stated in the QA plan.

Gas Chromatograph (GC) Based System Analyzer Specific Requirements

a. The following performance tests specific to GC based sulfur analyzers are part of an overall QA program. This list is not all inclusive. The specific performance tests that are required under rule compliance will be based upon analyzer configuration, data requirements, practical concerns such as safety and are subject to approval by the Executive Officer.

i. Whenever a calibration is performed and whenever a calibration drift test is performed, examine retention times for each calibration component. Compare the retention times against historically observed retention times. Retention time drift should be better than within five percent. Compare the retention times to analyzer and DAS parameters such as time gates to ensure compatibility. These parameters including the analysis time may need to be updated on occasion.

ii. Verify daily that the analyzer response drift for individual sulfur species does not exceed ten percent of the control information.

Total Sulfur Analyzer System Requirements

a. The following performance tests specific to total sulfur based analyzers are part of an overall QA program. This list is not all inclusive. The specific performance tests that are required under rule compliance will be based upon instrument analyzer configuration, data requirements, practical concerns such as safety and are subject to approval by the Executive Officer.

i. Verify daily that the analyzer response drift for the concentration of total sulfur, expressed as sulfur dioxide does not exceed ten percent of the control information.

ATTACHMENT B

GUIDELINES FOR CALCULATING FLARE EMISSIONS

The following methods shall be used to calculate flare emissions. An alternative method may be used, utilizing facility-specific data such as monitoring and/or gas composition data, provided it has been approved as equivalent in writing by the Executive Officer.

1. Emission Calculation Procedures

Petroleum refinery, sulfur recovery plant or hydrogen production facility operators shall use the following equations and emission factors to calculate emissions from vent gas, natural gas, propane and butane:

Effective No Later Than January 30, 2019, or As Soon As Monitors Are Installed and Certified That Can Measure Net Heating Value

Vent Gas

Air Pollutant	Equation	Emission Factor
ROG	E = V x NHV x EF	0.66 lb/mmBTU
NOx[1]	E = V x HHV x EF	0.068 lb/mmBTU
CO	E = V x NHV x EF	0.31 lb/mmBTU
PM10	E = V x EF	21 lb/mmSCF
SOx	E = V x Cs x 0.1662	Note (2)

Effective Until January 30, 2019, or Until Monitors Are Installed and Certified That Can Measure Net Heating Value

Air Pollutant	Equation	Emission Factor
ROG	E = V x HHV x EF	0.063 lb/mmBTU
NOx[1]	E = V x HHV x EF	0.068 lb/mmBTU
CO	E = V x HHV x EF	0.37 lb/mmBTU
PM10	E = V x EF	21 lb/mmSCF
SOx	E = V x Cs x 0.1662	Note (2)

Where:
E = Calculated vent gas emissions (lbs)
V= Volume flow of vent gas, as measured in million standard cubic feet at 14.7 psia and 68^0 Fahrenheit
HHV = Higher Heating Value, as measured in British Thermal Unit per standard cubic foot
NHV = Net Heating Value, as measured in British Thermal Units per standard cubic foot
EF = Emission Factor
Cs = The concentration of total sulfur in the vent gas, expressed as sulfur dioxide, as measured in part per million by volume using the methods specified in this rule.

Note (1) For vent gas streams of pure hydrogen, only the emission factor for NOx should be used.

Note (2) If an approved total sulfur analyzer is used in accordance with this rule, Cs is the concentration of total sulfur in the vent gas, averaged over 15 minutes or less, if the event duration is shorter than 15 minutes.

Natural Gas

Air Pollutant	Equation	Emission Factor (lb/mmSCF)
ROG	E = V x EF	7
NOx	E = V x EF	130
CO	E = V x EF	35
PM10	E = V x EF	7.5
SOx	E = V x EF	0.83

Propane and Butane

Air Pollutant	Equation	Emission Factor (lb/mmBTU)
ROG	E = V x 3500 x EF	0.009
NOx	E = V x 3500 x EF	0.145
CO	E = V x 3500 x EF	0.082
PM10	E = V x 3500 x EF	0.002
SOx(1)	E = V x 3500 x EF	0.047

Note (1) If the concentration of total sulfur in the vent gas or in the process streams vented to the flare is measured, the operator shall use E = V x Cs x 0.1662 to estimate the SOx emissions.

Single On/Off Flow Indicator Switch

The flow rate setting of the on/off flow indicator switch if the switch is not actuated or the maximum design capacity of the flare for the flow rate for each flare event.

Multiple On/Off Flow Indicator Switch

a) The flow rate setting of the first stage on/off flow indicator switch if the switch is not actuated.

b) When an on/off switch is actuated assume the flow rate is the flow rate that would actuate the on/off switch set at the next highest flow rate.

c) Use the maximum design capacity of the flare for the flow rate when the on/off switch set for the highest flow rate is actuated.

Flow Meters Only

a) Use the recorded flow meter data until the maximum range is exceeded.

b) When the maximum range of the flow meter is exceeded, assume the flow rate is the maximum design capacity of the flare(s), unless the owner or operator demonstrates and the Executive Officer approves a calculated flow based upon operational parameters and process data that represent the flow during the period of time that the flow exceeded the maximum range of the flow meter.

c) When the flow rate is below the valid lower range of the flow meter, assume the flow rate is at the lower range.

Combination of Flow Meters and On/Off Flow Indicator Switches

a) Use the recorded flow meter data until the maximum range is exceeded.
b) When the maximum range of the flow meter is exceeded, assume the flow rate is the flow rate that would actuate the on/off switch set at the next highest flow rate.
c) Use the maximum design capacity of the flare for the flow rate when the on/off switch set for the highest flow rate is actuated.
d) When the flow rate is below the valid lower range of the flow meter, assume the flow rate is at the lower range.
e) When the flow rate is below the valid lower range of the flow meter and the set flow rate of an on/off switch, assume the flow rate is the flow rate that would actuate the on/off switch.

2. Data Substitution Procedures

For any time period for which the vent gas flow, the higher heating value or the total sulfur concentration, expressed as sulfur dioxide, are not measured, analyzed and recorded pursuant to the requirements of this rule, unless the owner or operator of a petroleum refinery, sulfur recovery plant or hydrogen production plant demonstrates using verifiable records of flare water seal level and/or other parameters as approved by the Executive Officer in the Flare Monitoring and Recording Plan or the Revised Flare Monitoring and Recording Plan that no flare event occurred during the period these parameters were not measured, analyzed or recorded, the operator shall substitute and report the following values:

a) If the flow rate is not measured or recorded for any flare event, the totalized flow shall be calculated from the methodology in section 2(a)(i) below, unless the Executive Officer approves the method specified in Section 2(a)(ii).
   i) The totalized flow shall be calculated from the product of the flare event duration and the estimated flow rate. The flow rate shall be calculated using the following equation for the period of time the flow meter was out of service:

$$FR = \text{Max. FR} - 0.5(\text{Max. FR} - \text{Avg. FR})$$

   Where:
   FR = Estimated Flow Rate (standard cubic feet per minute)
   Max FR = Maximum flow rate that was measured and recorded for that flare during the previous 20 quarters preceding the flare event. This maximum value is based on the average flow rate during an individual flare event, not an instantaneous maximum value.
   Avg FR = Average flow rate for all measured and recorded flow rates for all sampled flare events for that flare, during the previous 20 quarters preceding the subject flare event.

   The duration of a flare event during periods when the flow meter is out of service shall be determined using an alternate method approved by the

Executive Officer in the Flare Monitoring and Recording Plan or Revised Flare Monitoring and Recording Plan.

In the absence of an approved alternate method to determine the duration of the flare event during periods when the flow meter is out of service, the operator shall report the flare to be venting for the entire time the flow meter is out of service.

ii) Alternate methods using recorded and verifiable operational parameters and/or process data, including reference to similar events that have previously occurred, approved by the Executive Officer to be representative of the volume of vent gas, may be used to determine the flow rate in lieu of the method specified above.

b) If the higher heating value is not measured or recorded for any flare event pursuant to the requirements of this rule, the higher heating value shall be calculated from the methodology in section 2(b)(i) below, unless the Executive Officer approves the method specified in Section 2(b)(ii).

i) The higher heating value shall be calculated using the following equation for the period of time this parameter was not measured or recorded:

$$HHV = Max\ HHV - 0.5(Max\ HHV - Avg\ HHV)$$

Where:

HHV = Estimated higher heating value (Btu/scf)

Max HHV = Maximum HHV measured and recorded for that flare during the previous 20 quarters preceding the flare event.

Avg HHV = Average value of all HHV measured and recorded for that flare for all sampled flare events during the previous 20 quarters preceding the flare event.

ii) Alternate methods using recorded and verifiable operational parameters, sampled data, and/ or process data, including reference to similar events that have previously occurred, approved by the Executive Officer to be representative of the HHV of the vent gas, may be used to determine the HHV in lieu of the method specified above.

c) If the total sulfur concentration, expressed as sulfur dioxide, is not measured or recorded for any flare event pursuant to the requirements of this rule, it shall be calculated from the methodology in section 2(c)(i) below, unless the Executive Officer approves the method specified in Section 2(c)(ii).

i) The total sulfur concentration expressed as sulfur dioxide shall be calculated using the following equation for the period of time this parameter was not measured or recorded:

$$SFE = Max\ SFE - 0.5(Max\ SFE - Avg\ SFE)$$

Where:

SFE = Estimated total sulfur concentration, expressed as sulfur dioxide (ppmv)

Max SFE = Maximum total sulfur concentration expressed as sulfur dioxide measured and recorded for that flare during the previous 20 quarters preceding the flare event.

Avg SFE = Average value of all total sulfur concentrations measured and recorded for that flare for all sampled flare events during the previous 20 quarters preceding the flare event.

ii) Alternate methods using recorded and verifiable operational parameters, sampled data, and/ or process data, including reference to similar events that have previously occurred, approved by the Executive Officer to be representative of the total sulfur concentration of the vent gas expressed as sulfur dioxide, may be used to determine the total sulfur concentration in lieu of the method specified above.

(Adopted January 4, 2019)

RULE 1118.1. CONTROL OF EMISSIONS FROM NON-REFINERY FLARES

(a) Purpose

The purpose of this rule is to reduce NOx and VOC emissions from flaring produced gas, digester gas, landfill gas, and other combustible gases or vapors and to encourage alternatives to flaring.

(b) Applicability

This rule applies to owners and operators of flares that require a SCAQMD permit at non-refinery facilities, including, but not limited to, oil and gas production facilities, wastewater treatment facilities, landfills, and organic liquid handling facilities.

(c) Definitions

(1) ANNUAL THROUGHPUT means the volume of gas or vapor in million standard cubic feet (MMscf) that is combusted in a flare or flare station in one calendar year.

(2) BIOGAS includes digester gas or landfill gas produced by the breakdown of organic matter in the absence of oxygen.

(3) CAPACITY is the maximum volumetric flow rate of gas or vapor that the flare or flare station is rated to process in units of scf per minute or the maximum heat input rate the flare or flare station is rated to process in units of million British thermal units (MMBtu) per hour.

(4) CAPACITY THRESHOLD is the percentage of the capacity used to flare gas and is used to determine when an owner or operator of a flare or flare station must take action to reduce NOx emissions and/or reduce the throughput to the flare.

(5) DIGESTER GAS means a gas produced from either mesophilic or thermophilic digestion of biodegradable waste, consisting of methane, carbon dioxide, and traces of other contaminant gases.

(6) FACILITY is as defined by Rule 1302 – Definitions.

(7) FLARE means a combustion device that oxidizes combustible gases or vapors, where the combustible gases or vapors being destroyed are routed directly into the burner without energy recovery.

(8) FLARE REPLACEMENT means the substitution of a flare or flare burner(s).

(9) FLARE STATION means two or more flares situated on a single pad and equipped with one common fuel meter.

(10) HEAT INPUT means the higher heating value of the fuel to the flare measured as Btu per hour.

(11) LANDFILL GAS means any gas derived through a natural process from the decomposition of waste deposited in a landfill.

(12) MAJOR FACILITY is a Major Polluting Facility as defined by Rule 1302 – Definitions.

(13) MINOR FACILITY is as defined by Rule 1302 – Definitions.

(14) NOTIFICATION OF ANNUAL PERCENT CAPACITY GREATER THAN THRESHOLD means the written form submitted by a facility to indicate the annual percent capacity of a flare or flare station is greater than the applicable threshold listed in Table 2 – Annual Capacity Thresholds.

(15) NOTIFICATION OF FLARE INVENTORY AND CAPACITY means the written form submitted by a facility to indicate the number of flares and the capacity of those flares at a facility.

(16) NOTIFICATION OF FLARE THROUGHPUT REDUCTION means the written form submitted by a facility to indicate the compliance strategy to reduce flare throughput below the applicable threshold listed in Table 2 – Annual Capacity Thresholds.

(17) NOTIFICATION OF INCREMENTS OF PROGRESS means the written form submitted by a facility to indicate the actions that have been completed, the actions yet to be completed, and any changes to the original notifications.

(18) NOTIFICATION OF INTENT means the written form submitted by a facility to indicate the action that will be taken if the annual percent capacity of the flare or flare station is greater than the applicable threshold listed in Table 2 – Annual Capacity Thresholds for two consecutive calendar years.

(19) OPEN FLARE means an unshrouded flare.

(20) ORGANIC LIQUID means any liquid containing volatile organic compounds (VOC).

(21) ORGANIC LIQUID LOADING means the bulk loading of organic liquids, such as organic liquids in marine vessels, tank trucks, trailer, railroad tank car, or stationary storage tanks.

(22) ORGANIC LIQUID STORAGE means the storage of organic liquids, such as organic liquids stored in tank farms and pipeline breakout stations.

(23) OTHER FLARE GAS includes gases combusted other than landfill gas, digester gas, produced gas, or gases generated from organic liquid handling.

(24) OXIDES OF NITROGEN (NOx) means nitric oxide and nitrogen dioxide.

(25) PERCENT CAPACITY means either the total throughput to the flare or flare station divided by the maximum volumetric capacity of the flare or flare station; or the total heat input to the flare divided by the maximum heat input of the flare or flare station.

(26) PIPELINE BREAKOUT STATION means a facility along a pipeline containing storage vessels used to relieve surges or receive and store petroleum products from the pipeline for re-injection and continued transportation by pipeline or to other facilities.

(27) PRODUCED GAS is organic compounds that are both gaseous at standard temperature and pressure and are associated with the production, gathering, separation or processing of crude oil.

(28) PROTOCOL means a test protocol for determining compliance with emission limits for applicable equipment.

(29) PUBLICLY-OWNED FACILITY means a wastewater management facility, solid waste management facility, sewage treatment facility, or landfill facility, if owned and operated by a public agency.

(30) REGENERATIVE ADSORPTION SYSTEM means a system used to remove impurities from combustible gases or vapors consisting of several media trains that are regenerated by purging with gas, typically used with biogas or produced gas.

(31) REGENERATION GAS means the purge gas from a regenerative adsorption system.

(32) RELOCATE means to remove an existing source from one facility in the SCAQMD and to install that source on another non-contiguous facility. Relocate does not include flares with a Various Location permit.

(33) UTILITY PIPELINE CURTAILMENT means limits imposed by the utility that occur at the pipeline that prevents gas from being injected into the

utility pipeline, including monitoring equipment breakdown or gas pipeline upgrades and maintenance.

(34) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102 – Definition of Terms.

(d) Requirements

(1) An owner or operator that submits an application to install, replace, or relocate a flare after January 4, 2019 shall comply with:

(A) The applicable NOx, VOC, and carbon monoxide (CO) emission limits specified in Table 1 – Emission Limits;

(B) For flares combusting Produced Gas at a facility with estimated annual emissions of four or more tons of any one of the following: sulfur oxides, VOCs, NOx, specific organics, particulate matter (PM); or 100 tons per year or more of CO, the owner or operator shall also comply with the following annual limits:

(i) For a replaced flare or flare station, annual throughput shall be limited to no more than 110 percent of the average annual throughput to that flare or flare station for the two calendar years immediately preceding the submittal of the flare or flare station application based on the annual emission reported; or if not available, annual throughput shall be limited to no more than 45 MMscf/year;

(ii) For a new flare that is not replacing an existing flare, the annual throughput shall be limited to no more than 45 MMscf/year.

Table 1 – Emission Limits

Flare Gas	NOx	CO	VOC
	pounds/MMBtu		
Digester gas[1]:			
Major facility	0.025	0.06	0.038
Minor facility	0.06	N/A	N/A
Landfill gas	0.025	0.06	0.038
Produced gas	0.018	0.01	0.008
Other flare gas	0.06	N/A	N/A
Organic liquid handling:			
Organic liquid storage	0.25	0.37	N/A
	pounds/1,000 gallons loaded		
Organic liquid loading	0.034	0.05	N/A

1. Table 1 - Emission Limits shall continue to apply unless amended or otherwise superseded following a technology assessment, caused to be performed by the Executive Officer, to determine potential alternative limits appropriate for digester gas generated from food waste diverted from landfills.

(2) An owner or operator with a submitted application for a flare or flare station with a deemed complete date prior to January 4, 2019 shall comply with paragraph (d)(3).

(3) An owner or operator of an existing flare or flare station combusting gases identified in Table 2 – Annual Capacity Thresholds shall comply with paragraph (g)(2) for each flare or flare station to determine their annual percent capacity pursuant to paragraph (g)(2).

Table 2 – Annual Capacity Thresholds

Flare Gas	Threshold
Any gas combusted in an open flare	5%
Digester gas	70%
Landfill gas	20%
Produced gas	5%

(A) If the flare or flare station's annual percent capacity is greater than the applicable threshold listed in Table 2 – Annual Capacity Thresholds, the owner or operator shall submit a Notification of Annual Percent Capacity Greater than Threshold to the Executive Officer no later than 30 days from the end of that calendar year.

(B) If the flare or flare station's annual percent capacity is greater than the applicable threshold listed in Table 2 – Annual Capacity Thresholds for two consecutive calendar years, the owner or operator shall submit a Notification of Intent to the Executive Officer no later than 60 days from the end of the second consecutive calendar year, selecting one of the following compliance options:

(i) Flare or flare station throughput reduction pursuant to paragraph (d)(4), or

(ii) Flare or flare station replacement or modification pursuant to paragraph (d)(5).

(C) An owner or operator of an existing flare or flare station shall not be subject to the requirements of subparagraph (d)(3)(A) or (d)(3)(B) if the flare(s) comply with the applicable emission limits in Table 1 – Emission Limits as demonstrated by a SCAQMD approved source test. The source test shall be conducted pursuant to a SCAQMD approved source test protocol, and shall be conducted every five years thereafter, pursuant to paragraph (f)(4).

(4) Flare Throughput Reduction

An owner or operator that submitted a Statement of Intent to reduce flare or flare station throughput pursuant to clause (d)(3)(B)(i) shall complete the following requirements pursuant to the schedule in Table 3 – Flare Throughput Reduction:

(A) Submit a Notification of Flare Throughput Reduction to the Executive Officer that includes the following:

(i) Alternative method(s) to reduce flare or flare station throughput below the applicable threshold listed in Table 2 – Annual Capacity Threshold; and

(ii) Timetable to implement and operate the alternative method.

(B) Submit Notification of Increments of Progress to the Executive Officer which shall include:

(i) Actions to implement the throughput reduction completed;

(ii) Actions to implement the throughput reduction yet to be completed; and

(iii) Any changes to the original Notification of Intent or the Notification of Flare Throughput Reduction.

(C) Reduce the annual throughput to the flare or flare station to a level at or below the applicable threshold listed in Table 2 – Annual Capacity Thresholds.

Table 3 – Flare Throughput Reduction

Requirement	Schedule (with potential extension(s) pursuant to subdivision (e))
Submit Notification of Flare Throughput Reduction	Within 6 months, or within 12 months for a Publicly-Owned Facility, from the end of the second consecutive calendar year the annual percent capacity is greater than the applicable threshold listed in Table 2 – Annual Capacity Thresholds
Submit Notification of Increments of Progress	13 months from the end of the second consecutive calendar year the annual percent capacity is greater than the applicable threshold listed in Table 2 – Annual Capacity Thresholds, and annually thereafter, until the end of the first year the annual percent capacity is reduced to or below the applicable threshold listed in Table 2 – Annual Capacity Thresholds
Implement the flare reduction project	Within 36 months from the end of the second consecutive calendar year the annual percent capacity is greater than the applicable threshold listed in Table 2 – Annual Capacity Thresholds
Demonstrate flare reduction at a level at or below the applicable threshold listed in Table 2 – Annual Capacity Thresholds	30 days after the end of the next calendar year the flare reduction project was implemented

(5) Flare Replacement

An owner or operator that submitted a Statement of Intent to replace or modify the flare or flare station pursuant to clause (d)(3)(B)(ii) shall complete the following pursuant to the schedule in Table 4 – Flare Replacement:

(A) Submit a permit application to the Executive Officer for flare replacement;

(B) Replace or modify the flare or flare station to meet the applicable emission limits in Table 1 – Emission Limits; and

(C) Demonstrate compliance with the applicable emission limits in Table 1 – Emissions Limits and shall conduct a source test pursuant to subdivision (f).

Table 4 – Flare Replacement

Requirement	Schedule (with potential extension(s) pursuant to subdivision (e))
Submit permit application	Within 6 months, or within 12 months for a Publicly-Owned Facility, from the end of the second consecutive calendar year the annual percent capacity is greater than the applicable threshold listed in Table 2 – Annual Capacity Thresholds.
Complete flare installation	Within 18 months after SCAQMD permit to construct issued.

(6) Change of Notification of Intent

An owner or operator of a flare or flare station that is required to submit a Notification of Intent pursuant to (d)(3)(B) may rescind and submit a revision to the previously submitted Notification of Intent one-time provided the owner or operator:

(A) Notifies and implements the new compliance pathway no later than 36 months from the end of the second consecutive calendar year the annual capacity was greater than the applicable threshold listed in Table 2 – Annual Capacity Threshold; and

(B) The revision is to change the compliance option from either:

(i) Paragraph (d)(4) for flare throughput reduction to paragraph (d)(5) to flare replacement to meet applicable Table 1 – Emission Limits and is triggered with the submittal of a flare permit application; or

(ii) Paragraph (d)(5) for flare replacement to meet applicable Table 1 – Emission Limits to paragraph (d)(4) for flare

throughput reduction and is triggered with the submittal of a Notification of Flare Throughput Reduction.

(7) An owner or operator of a flare or flare station combusting gases identified in Table 2 – Annual Capacity Thresholds shall submit a Notification of Flare Inventory and Capacity within 30 days of January 4, 2019 identifying the following information for each flare or flare station:

(A) Permit number;

(B) Date of flare installation;

(C) Type of gas combusted;

(D) Maximum rated capacity (MMscf/hour or MMBtu/hour);

(E) Description of fuel meter, if installed; and

(F) Date of last source test.

(8) An owner or operator of a flare or flare station subject to this rule shall perform maintenance in accordance with the manufacturer's schedule and specifications.

(9) An owner or operator of a flare or flare station shall display in an accessible location on the flare the model number and the rated heat input capacity of the flare on a permanent rating plate for any flare installed, relocated, or modified after January 4, 2019.

(10) The Notifications submitted under subparagraphs (d)(3)(A), (d)(3)(B), (d)(4)(A), and (d)(4)(B); paragraph (d)(6); and clause (d)(6)(B)(ii) shall be subject to notification fees pursuant to Rule 301(x) – Permitting and Associated Fees.

(e) Time Extension

(1) An owner or operator of a flare or flare station subject to this rule may submit a request to the Executive Officer for one twenty-four-month extension from the schedule in paragraph (d)(4) or one twelve-month extension from the schedule in paragraph (d)(5). The request shall be made in writing at least 60 days prior to the schedule deadline for the requirement. An extension shall not be available for an owner or operator of a flare or flare station complying with paragraph (d)(6). The time extension request shall include:

(A) The permit number or application number of the flare or flare station seeking the extension;

(B) The reason(s) a time extension is requested;

(C) Increments of progress completed and increments of progress yet to be completed, and anticipated time needed to complete each increment; and

(D) The length of time requested.

(2) Approval of Time Extensions

The Executive Officer shall review the request for the time extension and shall provide written approval or reject the request within 60 days of receipt. The request shall be approved if the following criteria are met:

(A) The owner or operator provides sufficient details justifying the basis for the requested extension and its duration;

(B) The owner or operator demonstrates to the Executive Officer that there are specific circumstances that necessitate the additional time requested to comply with scheduled deadlines. Such a demonstration may include, but is not limited to, providing detailed schedules, engineering designs, construction plans, permit applications, purchase orders, economic burden, and technical infeasibility.

(f) Source Tests

(1) Within 12 months from January 4, 2019, an owner or operator of a flare or flare station complying with subparagraph (d)(3)(C) or paragraph (h)(2) shall determine the applicable NOx, VOC, and CO emissions by conducting an initial source test, and source testing every five years thereafter, pursuant to paragraph (f)(4). An owner or operator of a flare subject to paragraph (d)(1) shall conduct the initial source test according to the conditions set forth in the permit to construct, and conduct source testing every five years thereafter, pursuant to paragraph (f)(4).

(A) At least 90 days prior to a scheduled source test, submit a source test protocol to the Executive Officer for approval;

(B) At least one week prior to the scheduled source test, notify the Executive Officer, in writing, of the intent to conduct source testing;

(C) Conduct a source test according to the approved protocol. If prior to rule adoption, a source test was conducted pursuant to an approved protocol and demonstrated compliance with the applicable emission limits in Table 1 – Emission Limits, the owner or operator

may opt to conduct the next source test within five years from the anniversary date of that prior source test; and

(D) Operators of flares combusting landfill gas may fulfill the five-year source testing requirement through the Rule 1150.1 source testing requirements if the source test plans for that specific test period include the pollutants specified in Table 1 – Emission Limits.

(2) Unless requested by the SCAQMD, after the approval of the initial source test protocol, the owner or operator of a flare or flare station subject to this rule is not required to resubmit a source test protocol for approval pursuant to subparagraph (f)(1)(A) if:

(A) The flare or flare station and its method of operation have not been altered in a manner that requires a permit application submittal; and

(B) Rule or permit emission limits have not become more stringent since the previous source test.

(3) All source tests shall be conducted:

(A) Using a SCAQMD approved source test protocol;

(B) Averaged over a maximum 60 minutes of flare operation;

(C) During operation other than start up or shut down; and

(D) In as-found operating condition.

(4) NOx, CO, and VOC emissions in pounds per MMBtu of heat input shall be determined using the pollutant concentrations measured according to paragraph (f)(5) and the gas composition of the total gas or vapor combusted in the burner measured according to paragraph (f)(6) and calculated using the procedures in 40 CFR Part 60, Appendix A, Method 19, Sections 2 and 3, or another SCAQMD approved test method.

(5) NOx, VOC, and CO concentrations shall be determined according to the following methods:

(A) NOx and CO concentration shall be determined pursuant to SCAQMD Method 100.1 – Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling; and

(B) VOC concentration shall be determined pursuant to SCAQMD Method 25.1 or 25.3 – Determination of VOC Emissions from Stationary Sources.

(6) Gas composition shall be calculated according to the following methods:

(A) ASTM Method D-3588 – Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels; and

(B) ASTM Method D-1945 – Standard Test Method for Analysis of Natural Gas by Gas Chromatography; or

(C) ASTM Method D-7833 – Standard Test Method for Determination of Hydrocarbons and Non-Hydrocarbon Gases in Gaseous Mixtures by Gas Chromatography.

(7) All source tests shall be conducted by a contractor that is approved by the Executive Officer under the Laboratory Approval Program for the applicable test methods.

(8) Records of source tests shall be maintained for five years or until the next source test is performed, whichever occurs later, and shall be made available to SCAQMD personnel upon request. The source test report(s) shall identify whether the source test was conducted pursuant to a SCAQMD approved protocol and clearly identify the model, serial numbers, application number, permit number, and origins of all gas or vapor combusted of the specific flare(s) tested. In the absence of a flare model and serial number, a detailed description of the flare or flare station and its location shall be included.

(g) Monitoring, Recordkeeping, and Reporting Requirements

(1) The owner or operator of a flare or flare station required to comply with paragraph (d)(3); or is exempt pursuant to paragraph (h)(2), or paragraph (h)(3) monitoring pursuant to subparagraph (g)(4)(B) shall:

(A) Within 90 days, or within 180 days for a Publicly-Owned Facility, of January 4, 2019, install and operate a fuel meter for each gas or vapor, excluding pilot gas, routed to every flare or flare station, unless metering system is currently installed and approved in writing by the Executive Officer.

(B) Within 90 days, or within 180 days for a Publicly-Owned Facility, of January 4, 2019, each fuel meter required under subparagraph (g)(1)(A) that requires dependable electric power to operate shall be equipped with a permanent supply of electric power that cannot be unplugged, switched off, or reset except by the main power supply

circuit for the building and associated equipment or the flare's safety shut-off switch.

(C) Ensure that the continuous electric power to a fuel meter required under subparagraph (g)(1)(A) and (g)(1)(B) may only be shut off for maintenance or safety.

(D) Within 90 days, or within 180 days for a Publicly-Owned Facility, of installation or January 4, 2019, whichever is later, ensure that each fuel meter is calibrated, and again calibrate the fuel meter annually thereafter, based on the manufacturer's recommended procedures or an alternative calibration method approved in writing by the Executive Officer. If the fuel meter was calibrated within one year prior to January 4, 2019, the next calibration shall be conducted within the one year of anniversary date of the prior calibration.

(2) Beginning January 4, 2019, or when the fuel meter is installed pursuant to subparagraph (g)(1)(A), whichever is later, the owner or operator of a flare or flare station required to comply with paragraph (d)(3) shall determine the percent capacity of the flare or flare station and maintain records documenting the percent capacity determinations as follows:

(A) Total annual throughput in units of MMscf/year and/or total annual heat input in units of MMBtu/year shall be calculated by summing throughput and/or heat input of the gas at the end of each calendar year as follows:

(i) Monthly throughput shall be measured and recorded at least once per month by the fuel meter(s); and

(ii) If determining percent capacity in units of MMBtu/year, heat input of the flare gas shall be measured and recorded at least once per month pursuant to (f)(6) or may be calculated and recorded monthly by measuring the methane concentration of landfill or digester gas using a portable nondispersive infrared detector, or equivalent detector approved in writing by the Executive Officer, calibrated per manufacturer's specifications. Heat input measurements are not required for month(s) flare is not in use.

(B) Capacity shall be determined using:

(i) Manufacturer designation, if known, otherwise the capacity shall be determined using permit conditions limiting throughput or heat input;

(ii) For flare stations, the combined total capacity of all the flares in the flare station.

(C) Annual percent capacity shall be calculated at the end of each calendar year by one of the following metrics:

(i) By volume:

$$Percent\ Capacity_{MMscf} = \frac{Total\ Annual\ Throughput\ \left(\frac{MMscf}{year}\right)/_{x}}{\text{Capacity (MMscf/hour)}}\ x\ 100\%$$

(ii) By heat input:

$$Percent\ Capacity_{MMBtu} = \frac{Total\ Annual\ Heat\ Input\ \left(\frac{MMBtu}{year}\right)/_{x}}{\text{Capacity (MMBtu/hour)}}\ x\ 100\%$$

x = the time period in hours/year that records are required to be maintained and recorded.

(D) For an owner or operator of the flare or flare station that fails to measure or record the monthly throughput or heat input value in compliance with the provisions above, the percent capacity shall be presumed to be one-hundred percent (100%) for the months without records.

(3) The owner or operator of a flare or flare station that is exempt pursuant to paragraph (h)(2) shall monitor and maintain NOx emission records as follows:

(A) NOx emissions shall be determined based on the most recently approved source test conducted pursuant to a SCAQMD approved source test protocol;

(B) Monthly gas throughput shall be measured and recorded at least once per month by the fuel meter(s);

(C) Heat input of the flare gas shall be measured and recorded at least monthly:

(i) Pursuant to paragraph (f)(6); or

(ii) Calculated and recorded monthly by measuring the methane concentration of landfill or digester gas using a portable nondispersive infrared detector, or equivalent detector, calibrated per manufacturer's specifications; or

(iii) Estimated using the applicable Table 5 – Default Heating Value.

Table 5 – Default Heating Value

Flare Gas	Default Heating Value (Btu/scf)
Digester gas	600
Landfill gas	500
Produced gas	1,000

(D) NOx emissions shall be calculated as follows:

$$Monthly\ pounds\ of\ NOx\ Emitted = \frac{pounds\ \ NOx}{MMBtu} \times \frac{MMscf}{month} \times \frac{Btu}{scf}$$

(4) The owner or operator of a flare or flare station that is exempt pursuant to paragraph (h)(3) shall monitor and maintain hours of operation records of a flare or flare station as follows:

(A) For the 200 hours per year validation, using a calibrated non-resettable totalizing time meter or equivalent method approved in writing by the Executive Officer; or

(B) For the annual throughput limit equivalent to 200 hours per year validation, using a calibrated fuel meter or equivalent method approved in writing by the Executive Officer.

(5) The owner or operator of a flare or flare station subject to this rule shall:

(A) Maintain records of annual throughput attributed to source testing and utility pipeline curtailment for a flare or flare station complying pursuant to subparagraph (d)(1)(B).

(B) Maintain a copy of the manufacturer's, distributor's, installer's or maintenance company's written maintenance schedule and instructions.

(C) Provide the manufacturer's maintenance instructions, maintenance records, and the source test report(s) to the Executive Officer upon request.

(D) Retain all written or electronic records required by this rule for at least five years, which shall be made available no later than five business days from date requested.

(h) Exemptions

(1) The provisions of this rule shall not apply to owners or operators of a flare or flare station:

(A) At asphalt plants; biodiesel plants; hydrogen production plants fueled in part with refinery gas; petroleum refineries; sulfuric acid plants; and sulfur recovery plants;

(B) Routing only natural gas directly into the flare burner that are subject to SCAQMD Rule 1147 – NOx Reductions from Miscellaneous Sources NOx emission limits;

(C) Routing only propane or butane or a combination of propane and butane directly into the flare burner;

(D) At a landfill that collects less than 2,000 MMscf of landfill gas per calendar year and has either ceased accepting waste or is classified by the California Department of Resources Recycling and Recovery as an Inert Waste Disposal Site or an Asbestos Contaminated Waste Disposal Site;

(E) With Various Location Permit; or

(F) Combusting regeneration gas.

(2) An owner or operator of a flare or flare station subject to this rule that emits less than 30 pounds of NOx per month shall be exempt from the requirements in subdivision (d) provided:

(A) The flare or flare station has a permit that specifies conditions that limit the applicable NOx emissions; and

(B) The flare or flare station operates in compliance with the permit condition.

(3) An owner or operator of a flare or flare station subject to this rule that operates 200 hours or less per calendar year, or with an annual throughput limit equivalent to 200 hours per year, shall be exempt from the requirements in subdivision (d) provided:

(A) The flare or flare station has a permit that specifies conditions that limits the operating hours or annual throughput; and

(B) The flare or flare station operates in compliance with the permit condition.

(4) An owner or operator of a flare or flare station that is exempt pursuant paragraph (h)(2) or (h)(3), shall be subject to the requirements in subdivision (d) in the event the flare or flare station exceeds the applicable limitations in paragraphs (h)(2) or (h)(3).

(5) An owner or operator of an open flare shall not be required to conduct source testing pursuant to subdivision (f).

(6) Gas throughput combusted, NOx emissions, and time accrued during source testing or operating the pilot light pursuant to subdivision (f) may be omitted from the calculation of percent capacity pursuant to subparagraph (g)(2), emissions pursuant to paragraph (h)(2), or hours or annual throughput pursuant to paragraph (h)(3).

(7) Gas throughput combusted during source testing pursuant to subdivision (f), utility pipeline curtailment, or operating the pilot light may be omitted from the annual throughput limitation in subparagraph (d)(1)(B).

Adopted March 2, 1979

7/25/80

Rule 1119 - Petroleum Coke Calcining Operations - Oxides of Sulfur

(a) A person shall not operate petroleum coke calcining equipment unless the uncontrolled emissions of oxides of sulfur from such basic equipment, expressed as sulfur dioxide (SO_2), are reduced by at least 80%.

(b) Any equipment owner or operator subject to the provisions of section (a) of this rule shall comply with the following schedule of increments of progress:

(1) By December 1, 1980, submit to the Executive Officer an application for permit to construct describing at a minimum the steps that will be taken to achieve compliance with this rule.

(2) By June 1, 1981, award the contract for an emission control system, or issue purchase orders for the component parts to accomplish emission control.

(3) By September 1, 1981, initiate on-site construction or installation of equipment to reduce or control emissions.

(4) By May 1, 1983, complete on-site construction or installation of equipment to reduce or control emissions.

(5) By July 1, 1983, assure final compliance with the provisions of this rule.

Adopted August 4, 1978

Rule 1120 - Asphalt Pavement Heaters

A person shall not operate an asphalt pavement surface heater or an asphalt heater-remixer for the purpose of maintaining, reconditioning, reconstructing or removing asphalt pavement unless all of the following requirements are met:

(a) Black or gray smoke emissions of more than 60 consecutive seconds duration shall not be discharged to the atmosphere and in aggregate, black or gray smoke emissions shall not exceed a total of three minutes in any one hour of heater operation. For the purpose of this rule, black or gray smoke is to be viewed by an observer at the point of greatest opacity.

(b) Visible emissions of more than 40% opacity, other than black or gray smoke, shall not be discharged to the atmosphere for a period or periods totalling more than 3 minutes in any one hour. For the purpose of this rule, visible emissions are to be viewed by an observer at a point no lower than 36-inches above the pavement.

(c) All units of equipment are fired with gaseous fuels that do not contain in excess of 80 ppm by volume of sulfur compounds calculated as H_2S, or with diesel fuels that do not contain more sulfur than specified by the California Air Resources Board.

(d) Grease, crack pouring materials or oily substances that burn or produce smoke are removed by mechanical grinding, by cold planing or by other mechanical means prior to the use of the heating equipment on the contaminanted area.

(e) Asphalt pavement at the work site is cleared of paper, wood, vegetation and other combustible refuse prior to operation of the heating equipment.

(f) The Executive Officer is notified of an operation using pavement heaters within 10 days after a contract is signed authorizing such work and again, at least 24 hours before an operation starts. Each notification shall describe the location, estimated starting time and an estimate of the time to complete the work.

(g) The equipment is operated only during days on which open burning is allowed. However, an operation that begins on a day when open burning is allowed, may be continued on successive days whether open burning is allowed or not allowed. Information concerning whether a proposed operating day meets the criteria specified in this subparagraph (g) may be obtained from the Executive Officer or his authorized representative.

(Adopted December 1, 1978)(Amended March 10, 1995)(Amended December 10, 1999)
(Amended September 3, 2004)

RULE 1121 CONTROL OF NITROGEN OXIDES FROM RESIDENTIAL TYPE, NATURAL GAS-FIRED WATER HEATERS

(a) Applicability

This rule applies to manufacturers, distributors, retailers, and installers of natural gas-fired water heaters, with heat input rates less than 75,000 Btu per hour.

(b) Definitions

For the purpose of this rule:

(1) BTU means British thermal unit or units.

(2) DIRECT-VENT WATER HEATER means a water heater with air intake and exhaust ducts that use a gravity system to collect air from outside a building for combustion and exhaust combustion byproducts to the outside of a building.

(3) HEAT INPUT means the heat of combustion released by fuels burned in a unit based on the higher heating value of fuel. This does not include the enthalpy of incoming combustion air.

(4) HEAT OUTPUT means the product H_o as defined in Section 9.3 of the Protocol.

(5) INDEPENDENT TESTING LABORATORY means a testing laboratory that meets the requirements of District Rule 304, subdivision (k) and is approved by the District to conduct certification testing under the Protocol.

(6) MITIGATION FEE is an emission reduction option, in which monies collected by the District from water heater manufacturers are placed in a restricted fund and are used to fund stationary and mobile source emission reduction programs targeted at equivalent NO_x emission reductions as to those that would have otherwise occurred and have been approved by the District's Governing Board.

(7) MOBILE HOME WATER HEATER means a closed vessel manufactured exclusively for mobile home use in which water is heated by combustion of gaseous fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210^{o}F (99^{o}C).

(8) NO_X EMISSIONS means the sum of nitric oxide and nitrogen dioxide in the flue gas, collectively expressed as nitrogen dioxide.

(9) POWER-VENT WATER HEATER means a water heater with a blower installed to assist in the expulsion of exhaust gases.

(10) POWER DIRECT-VENT WATER HEATER means a water heater with an air intake duct outside of a building with a blower installed to assist in the expulsion of exhaust gases.

(11) PROTOCOL means South Coast Air Quality Management District Protocol: *Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers*, January 1998.

(12) RATED HEAT INPUT CAPACITY means the heat input capacity specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different from the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the rated heat input capacity.

(13) RECREATIONAL VEHICLE means either a motor home, travel trailer, truck camper, or camping trailer, with or without motive power, designed for human habitation for recreational, emergency, or other occupancy, as defined pursuant to Section 18010 of the California Health and Safety Code.

(14) WATER HEATER means a closed vessel other than a mobile home water heater in which water is heated by combustion of gaseous fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210^{o}F (99^{o}C).

(c) Requirements

(1) Until July 1, 2002, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NO_x emission level of less than or equal to:

(A) 40 nanograms of NO_X (calculated as NO_2) per joule of heat output (93 lb per billion Btu of heat output); or

(B) 55 ppmv at 3% O_2, dry (71 lb per billion Btu of heat input).

(2) On or after July 1, 2002, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NO_x emission level of less than or equal to:

(A) 20 nanograms of NO_x (calculated as NO_2) per joule of heat output (46.5 lb per billion Btu of heat output); or

(B) 30 ppmv at 3% O_2, dry (35 lb per billion Btu of heat input); or

(C) the emission limit specified in subparagraph (c)(1)(A) or (c)(1)(B) provided the manufacturer of the water heater meets the requirements of subdivision (e).

(3) On or after January 1, 2006, for water heaters less than or equal to 50 gallon capacity, excluding direct-vent, power-vent and power direct-vent water heaters; on or after January 1, 2007 for water heaters greater than 50 gallon capacity, excluding direct-vent, power-vent and power direct-vent water heaters; and on and after January 1, 2008 for all direct-vent, power-vent, and power direct-vent water heaters; no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NO_x emission level of less than or equal to:

(A) 10 nanograms of NO_x (calculated as NO_2) per joule of heat output (23 lb per billion Btu of heat output); or

(B) 15 ppmv at 3% O_2, dry (17.5 lb per billion Btu of heat input).

(4) On and after January 1, 2000, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired mobile home water heaters unless the water heater is certified pursuant to subdivision (d) to a NO_x emission level of less than or equal to:

(A) 40 nanograms of NO_x (calculated as NO_2) per joule of heat output (93 lb per billion Btu of heat output); or

(B) 55 ppmv at 3% O_2, dry (71 lb per billion Btu of heat input).

(5) The manufacturer of any water heater manufactured for sale in the district shall clearly display on the shipping carton and the name plate of the water heater:

(A) the model number;

(B) the date of manufacture; and

(C) the certification status.

(6) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2006, any person may distribute, sell, offer for sale, or install ~~any~~ gas-fired water heaters less than or equal to 50 gallon capacity that are manufactured prior to January 1, 2006 and in compliance with paragraph (c)(2).

(7) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2007, any person may distribute, sell, offer for sale, or install gas-fired water heaters greater than 50 gallon capacity that are manufactured prior to January 1, 2007 and in compliance with paragraphs (c)(2).

(8) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2008, any person may distribute, sell, offer for sale, or install gas-fired direct-vent, power-vent, or power direct-vent water heaters that are manufactured prior to January 1, 2008 and in compliance with paragraphs (c)(2).

(d) Certification

(1) The manufacturer shall obtain confirmation that each model of water heater complies with the applicable requirements of subdivision (c) from an independent testing laboratory prior to applying for certification. This confirmation shall be based upon emission tests of a randomly selected unit of each model and the Protocol shall be adhered to during the confirmation testing of all water heaters subject to this rule.

(2) When applying for certification of water heaters, the manufacturer shall submit to the Executive Officer the following:

(A) A statement that the model is in compliance with subdivision (c). The statement shall be signed by the manufacturer and dated, and shall attest to the accuracy of all statements;

(B) General Information

(i) Name and address of manufacturer,

(ii) Brand name, trade name and

(iii) Model number, as it appears on the water heater rating plate;

(C) A description of each model being certified; and

(D) A source test report verifying compliance with subdivision (c) for each model to be certified. The source test report shall be prepared by the confirming independent testing laboratory and shall contain all of the elements identified in Section 10 of the Protocol for each unit tested. The source test shall have been conducted no more than ninety days prior to the date of submittal to the Executive Officer.

(3) When applying for certification of water heaters, the manufacturer shall submit the items identified in paragraph (d)(2) no more than ninety days after the date of the source test identified in subparagraph (d)(2)(D).

(4) When applying for certification of water heaters for compliance with the emission limit specified in paragraph (c)(2) or (c)(3), the manufacturer shall submit the information identified in paragraph (d)(2) at least 90 days prior to the effective compliance date specified in either paragraph (c)(2) or (c)(3), respectively.

(5) The Executive Officer shall certify a water heater model which complies with the provisions of subdivision (c) and of paragraphs (d)(1), (d)(2), and (d)(3).

(6) Certification status shall be valid for three years from the date of approval by the Executive Officer. After the third year, recertification shall be required according to the requirements of paragraphs (d)(1) and (d)(2).

(e) Mitigation Fee

Any manufacturer that elects to submit a mitigation fee to the District to meet the NO_x emission level established under subparagraph (c)(2)(C) shall:

(1) submit a Mitigation Fee Plan to the Executive Officer 180 days prior to complying with the provisions of paragraph (c)(2), where the Mitigation Fee Plan includes:

(A) the name of the manufacturer;

(B) the compliance period that the mitigation fee covers shall not exceed a 12-month time period; and

(C) the number of water heaters sold over the compliance period, which shall be based on sales records or invoices of water heaters in a similar model and size that were sold in the district over the past 12 months.

(2) receive written verification from the Executive Officer that the Mitigation Fee Plan was approved prior to complying with the provisions of paragraph (c)(2);

(3) on and after January 1, 2005, pay a mitigation fee at the beginning of the compliance period in the amount of $3.00 per water heater sold as specified in subparagraph (e)(1)(C), over the time period the mitigation fee covers as specified in subparagraph (e)(1)(B); and before January 1, 2005, pay a mitigation fee in the amount of $5,400 per ton of NOx multiplied by the amount of NOx emission reductions needed as specified in Equation 1;

Equation 1:

$$MF = \$5{,}400/ton \times \left[\frac{t \times n \times (190 therms/yr) \times (93 - 46.5 lbs/billion Btu - output) \times 0.76}{2000 \times 10{,}000} \right]$$

where:

MF = Mitigation fee, Dollars

t = Time period that mitigation fee covers as specified in subparagraph (f)(1)(C)

n = Number of water heaters sold as specified in subparagraph (f)(1)(D)

(4) label water heaters identified in the Mitigation Fee Plan;

(5) maintain records and report sales of water heaters covered by the Mitigation Fee Plan and if the number of water heaters originally estimated exceed the number of water heaters identified in subparagraph (e)(1)(C), the water heater manufacturer shall update the Mitigation Fee Plan within 60 days after the end of the compliance period. Make these records available to the Executive Officer upon request, for a period of at least three years after the end of the compliance period.

(f) Enforcement

The Executive Officer may periodically inspect distributors, retailers, and installers of water heaters located in the District and conduct such tests as are deemed necessary to insure compliance with subdivision (c).

(g) Exemptions

The provisions of this rule shall not apply to:

(1) Water heaters with a rated heat input capacity of 75,000 Btu per hour or greater.

(2) Water heaters used in recreational vehicles.

(h) Final Progress Report

On or before April 1, 2007, any person that manufacturers direct-vent, power-vent or power direct-vent water heaters for sale within the South Coast Air Basin shall submit to the Executive Officer a final progress report that shall include:

(1) Identification of efforts that have been made to reach commercialization of direct-vent, power-vent, and power direct-vent water heaters that meet the NO_x emission level specified under paragraph (c)(3);

(2) A description of the technologies used to meet the NO_x emission level for direct-vent, power-vent, and power direct-vent water heaters specified under paragraph (c)(3); and

(3) Complete documentation for at least three laboratory test results each for direct-vent, power-vent, and power direct-vent water heaters developed to

meet the NO_x emission level specified under paragraph (c)(3) that shall include the emissions rate measured by an independent testing laboratory using the SCAQMD protocol specified under paragraph (b)(11) or other protocol approved in advance by the Executive Officer.

(i) Program Administration

On and after September 3, 2004, the Executive Officer is authorized to use up to 5% of the mitigation fee funds collected in any given year for program administration.

(Adopted March 2, 1979)(Amended June 1, 1979)(Amended February 1, 1980)
(Amended July 8, 1983)(Amended May 5, 1989)(Amended April 5, 1991)
(Amended July 11, 1997)(Amended September 21, 2001)(Amended December 6, 2002)
(Amended October 1, 2004)

RULE 1122. SOLVENT DEGREASERS

(a) Applicability

This rule applies to all persons who own or operate batch-loaded cold cleaners, open-top vapor degreasers, all types of conveyorized degreasers, and air-tight and airless cleaning systems that carry out solvent degreasing operations with a solvent containing Volatile Organic Compounds (VOCs) or with a NESHAP halogenated solvent. Solvent degreasing operations that are regulated by this rule include, but are not limited to, the removal of contaminants from parts, products, tools, machinery, and equipment.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AIR-SOLVENT INTERFACE is the point of contact between the exposed solvent and air.

(2) AIR-VAPOR INTERFACE is the point of contact between the exposed solvent vapor and air.

(3) AIR-VAPOR INTERFACE SURFACE AREA

(A) Means the geometric surface area of the open-top of the degreaser for OPEN-TOP VAPOR DEGREASERS; or

(B) Means the combined geometric surface areas of the projected plane surfaces of all degreaser openings for CONVEYORIZED VAPOR DEGREASERS.

(4) AIR-SOLVENT INTERFACE SURFACE AREA means the combined geometric surface areas of the projected plane surfaces of all degreaser openings for CONVEYORIZED COLD CLEANERS.

(5) AIRLESS/AIR-TIGHT CLEANING SYSTEM is a sealed cleaning system that has no open air/vapor or air/solvent interface, and is designed and automatically operated in such a manner as to minimize the discharge or leakage of solvent vapor emissions to the atmosphere during all cleaning and vacuum drying operations. The system consists of devices to

condense and recover solvent and solvent vapor, and control devices to remove solvent vapors from all gas streams that vent to the atmosphere.

(6) AUTOMATED PARTS HANDLING SYSTEM, such as a hoist or a conveyor, is a mechanical device that carries all parts and parts baskets, at a controlled speed, from the initial loading of soiled or wet parts through the removal of the cleaned or dried parts.

(7) BATCH-LOADED COLD CLEANER is a batch-operated degreaser that is designed to contain liquid solvent, has an air-solvent interface, and is always operated at a temperature below the solvent's boiling point.

(8) CLEAN AIR SOLVENT is as defined in Rule 102.

(9) CLEAN AIR SOLVENT CERTIFICATE is a certificate issued by the District to a manufacturer, distributor, or facility for a specified product or class of products that meets the criteria for a Clean Air Solvent.

(10) CIRCUMFERENTIAL TROUGH is a receptacle located below the primary condenser that conveys condensed solvent and atmospheric moisture to a water separator.

(11) CONDENSER WATER FLOW SWITCH is a safety switch that turns off the sump heat if the condenser water fails to circulate, or the temperature of the condenser water rises above the design operating temperature.

(12) CONVEYORIZED (IN-LINE) COLD CLEANER is any degreaser which uses an integral, continuous, mechanical system for moving materials or parts to be cleaned into and out of a solvent liquid cleaning zone.

(13) CONVEYORIZED (IN-LINE) VAPOR DEGREASER is any degreaser which uses an integral, continuous, mechanical system for moving materials or parts to be cleaned into and out of a vapor cleaning zone.

(14) DOWNTIME MODE means the time period when a solvent degreaser is not cleaning parts and the sump heating coils are turned off.

(15) DWELL TIME is the period of time when parts are held within the freeboard area of the degreaser, after cleaning, to allow solvent to drain from the parts back into the machine.

(16) DRAG-OUT is that solvent carried out of a degreaser that adheres to or is entrapped in the part being removed.

(17) DEGREASER is any equipment designed and used for holding a solvent to carry out solvent cleaning operations including, but not limited to, batch-loaded cold cleaners, open-top vapor degreasers, conveyorized (in-line) degreasers, and air-tight and airless cleaning systems.

(18) DRYING TUNNEL is an add-on enclosure extending from the exit area of a conveyorized degreaser which reduces drag-out losses by containing evaporating solvent.

(19) ELECTRONIC COMPONENT is that portion of an assembly, including circuit card assemblies, printed wire assemblies, printed circuit boards, soldered joints, ground wires, bus bars, and other electrical fixtures, except for the actual cabinet in which the components are housed.

(20) EXEMPT COMPOUND is as defined in Rule 102.

(21) FREEBOARD AREA is the air space in a batch-loaded cold cleaner that extends from the liquid surface to the top of the tank.

(22) FREEBOARD HEIGHT

(A) Is the distance from the top of the solvent to the top of the tank for BATCH-LOADED COLD CLEANERS; or

(B) Is the distance from the air-vapor interface to the top of the tank for OPEN-TOP VAPOR DEGREASERS; or

(C) Is the distance from either the air-solvent or air-vapor interface to the top of the tank for conveyorized degreasers.

(23) FREEBOARD RATIO is the freeboard height divided by the smaller of either the inside length or inside width of the degreaser.

(24) HIGH PRECISION OPTIC is an optical element used in an electro-optical device and is designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.

(25) IDLING MODE means the time period when a solvent degreaser is turned on, but is not actively cleaning parts.

(26) LIQUID LEAK is a VOC-containing liquid leak from the degreaser at a rate of three drops per minute or more or any visible liquid mist.

(27) MEDICAL DEVICE is an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article including any component or accessory, that meets one of the following conditions:

(A) it is intended for use in the diagnosis of disease or other conditions or in the cure, mitigation, treatment, or prevention of disease; or

(B) it is intended to affect the structure or any function of the body; or

(C) it is defined in the National Formulary or the United States Pharmacopeia, or any supplement to them.

(28) NESHAP HALOGENATED SOLVENT is a solvent that contains 5 percent or more by weight of any one or any combination of halogenated

hazardous air pollutant solvent as defined in the most recent version of 40 CFR Part 63, Subpart T - National Emission Standards for Halogenated Solvent Cleaning (Section 63.461), including, but not limited to the following compounds: carbon tetrachloride, chloroform, perchloroethylene, 1,1,1-trichloroethane, trichloroethylene, and methylene chloride.

(29) OPEN-TOP VAPOR DEGREASER is any batch-loaded, boiling solvent degreaser.

(30) PERSON is any firm, business establishment, association, partnership, corporation or individual, whether acting as principal, agent, employee, or other capacity, including any governmental entity or charitable organization.

(31) PRIMARY CONDENSER means a series of circumferential cooling coils on the inside walls of a vapor degreaser through which a chilled substance is circulated or recirculated to provide continuous condensation of rinsing solvent vapors, thereby creating a concentrated solvent vapor zone.

(32) REFRIGERATED FREEBOARD CHILLER is an emission control device, which is mounted above the water jacket or primary condenser coils, consisting of secondary coils which carry a refrigerant to provide a chilled air blanket above the solvent vapor to reduce emissions from the degreaser bath.

(33) ROTATING BASKET is a perforated or wire mesh cylinder containing parts to be cleaned that is slowly rotated while proceeding through the degreaser.

(34) SOLVENT DEGREASING is any portion of the operation from the removal of contaminants with solvents, from parts, products, tools, machinery, and equipment to the subsequent drying of the items.

(35) SOLVENT CONTAINER is that part of the degreaser that is intended to hold the cleaning solvent.

(36) SPRAY PUMP CONTROL SWITCH is a safety switch that prevents the spray pump from operating without an adequate vapor level.

(37) SUPERHEATED VAPOR ZONE is a region located within the vapor zone of a degreaser whereby solvent vapors are heated above the solvent’s boiling point.

(38) VAPOR LEVEL CONTROL SWITCH is a safety switch that turns off the sump heat when the solvent vapor level rises above the design operating level.

(39) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(40) WATER SEPARATOR is a device that isolates water from an organic solvent or a mixture of organic solvents by a variety of means including, but not limited to, extraction, evaporation, distillation, drying, adsorption, and filtration.

(41) WORKLOAD AREA means:

(A) the plane geometric surface area of the top of the submerged parts basket, or

(B) the combined plane geometric surface area(s) displaced by the submerged part(s), if no parts basket is used.

(c) Work Practice Requirements

Any person owning or operating the following type of degreasers with a VOC-containing solvent shall meet the following work practice requirements:

(1) Batch-Loaded Cold Cleaners

(A) The degreaser shall be operated in accordance with the manufacturer's specifications, and be used with tightly fitting covers that are free of cracks, holes or other defects. In addition, the cover shall be closed at all times when the degreaser contains solvent, except during parts entry and removal or performing maintenance or monitoring that requires the removal of the cover.

(B) The parts to be cleaned shall be racked in a manner that will minimize the drag-out losses.

(C) Parts shall be drained immediately after the cleaning, until

(i) At least 15 seconds have elapsed; or

(ii) Dripping of solvent ceases; or

(iii) The parts become visibly dry.

Parts with blind holes or cavities shall be tipped or rotated before being removed from a degreaser, such that the solvents in the blind holes or cavities are drained in accordance with the above requirements.

(D) The solvent container shall be free of all liquid leaks. Auxiliary degreaser equipment, such as pumps, water separators, steam traps,

or distillation units, shall not have any liquid leaks, visible tears, or cracks. In addition, any liquid leak, visible tear, or crack detected pursuant to the provisions of this subparagraph shall be repaired within 48 hours, or the degreaser shall be drained of all solvent and shut down until replaced or repaired.

(E) Draining or filling of solvent containers shall be performed beneath the liquid solvent surface.

(F) All waste solvents shall be stored in properly identified and sealed containers. All associated pressure relief devices shall not allow liquid solvents to drain out.

(G) Solvent flow cleaning shall be done within the freeboard area, and shall be done by a liquid stream rather than a fine, atomized, or shower-type spray. Solvent flow shall be directed downward to avoid turbulence at the air-solvent interface and to prevent liquid solvent from splashing outside of the degreaser.

(H) Degreasing of porous or absorbent materials, such as cloth, leather, wood, or rope, is prohibited.

(I) Solvent agitation, where necessary, shall be carried out only by pump recirculation, ultrasonics, a mixer, or by air agitation. Air agitation shall be accomplished under the following conditions:

(i) The air agitation unit shall be equipped with a gauge and a device that limits air pressure into the degreaser to less than two pounds per square inch gauge;

(ii) The cover must remain closed while the air agitation system is in operation; and

(iii) Pump circulation shall be performed without causing splashing.

(J) The average draft rate in the work room, as measured parallel to the plane of the degreaser opening, shall not exceed 9.1 meters per minute (30 feet per minute).

(K) Ventilation fans shall not be positioned in such a way as to direct airflow near the degreaser openings.

(L) Spills during solvent transfer shall be wiped up immediately and the used wipe rags shall be stored in closed containers that are handled in accordance with subparagraph (c)(1)(F).

(M) Solvent levels shall not exceed the fill line.

(2) Open-Top and Conveyorized (In-Line) Vapor Degreasers

(A) The degreaser shall be operated in accordance with the manufacturer's specifications and be used with a tightly-fitting cover that is free of cracks, holes or other defects, except as provided in subparagraph (e)(2)(B). In addition, the cover shall be closed during idling and downtime modes, except while performing maintenance or monitoring that requires the removal of the cover.

(B) The solvent container shall be free of all liquid leaks. Auxiliary degreaser equipment, such as pumps, water separators, steam traps, or distillation units, shall not have any liquid leaks, visible tears, or cracks. In addition, any liquid leak, visible tear, or crack detected pursuant to the provisions of this subparagraph shall be repaired within 48 hours, or the degreaser shall be drained of all solvents and shut down until replaced or repaired.

(C) Degreasing of porous or absorbent materials, such as cloth, leather, wood, or rope, is prohibited.

(D) Transfer of solvent into or out of solvent containers shall be performed with leak-proof couplings, and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface.

(E) The vertical speed of the powered hoist or conveyor shall not be more than 3.4 meters per minute (11.2 feet per minute) when lowering and raising parts in and out of the degreaser, respectively.

(F) The average draft rate in the workroom, as measured parallel to the plane of the degreaser opening, shall not exceed 9.1 meters per minute (30 feet per minute).

(G) At start up, the primary condenser and the refrigerated freeboard chiller, if one is required, shall be turned on before the sump heater is turned on. At shutdown, the sump heater shall be turned off before the primary condenser and refrigerated freeboard chiller are turned off.

(H) The water separator shall be maintained to prevent water from returning to the surface of the boiling solvent sump or from becoming visibly detectable in the solvent exiting the water separator.

(I) The workload area shall not exceed more than half of the degreaser's air-vapor interface surface area.

(J) The workload shall be degreased in the vapor zone until condensation ceases.

(K) The temperature within the superheated vapor zone shall be at least 10°F above the boiling point of the solvent being used.

(L) Parts and parts baskets shall remain in the superheated vapor zone for at least the minimum proper dwell time, as stated in the manufacturer's specification.

(M) Solvent flow cleaning shall be done within the vapor zone and shall be done by a liquid stream rather than a fine, atomized, or shower-type spray. Solvent flow shall be directed downward to avoid turbulence at the air-vapor interface and to prevent liquid solvent from splashing out of the degreaser.

(N) Ventilation fans shall not be positioned in such a way as to direct airflow near the degreaser openings.

(O) All waste solvents shall be stored in properly identified and sealed containers. All associated pressure relief devices shall not allow liquid solvents to drain out.

(P) Spills during solvent transfer shall be wiped up immediately and the used wipe rags shall be stored in closed containers that are handled in accordance with subparagraph (c)(2)(O).

(Q) Solvent levels shall not exceed the fill line.

(3) The applicable requirements of paragraphs (c)(1) and (c)(2) shall be legibly written and permanently and conspicuously posted on or near the degreaser, in such a manner that it is conveniently available to the operator for reference purposes.

(d) Control Standards for Batch-Loaded and Conveyorized (In-Line) Cold Cleaners

Any person owning or operating a batch-loaded cold cleaner or a conveyorized (in-line) cold cleaner with a VOC-containing solvent shall meet all of the following applicable requirements:

(1) Batch-Loaded Cold Cleaners

(A) Cleaning materials shall have a VOC content of 25 g/l or less, as used.

(B) A device for draining cleaned parts shall be used such that drained or dragout solvent is returned.

(2) Conveyorized (In-Line) Cold Cleaners

(A) Cleaning materials shall have a VOC content of 25 g/l or less, as used.

(e) Design Requirements and Control Standards for Open-Top and Conveyorized (In-Line) Vapor Degreasers

In addition to the applicable requirements of paragraph (c)(2), any person owning or operating an open-top or conveyorized (in-line) vapor degreaser with a VOC-containing solvent shall also meet all of the following applicable requirements:

(1) Open-Top Vapor Degreaser

(A) The degreaser shall be operated with all of the following safety switches installed:

(i) Vapor level control switch;

(ii) Condenser water flow switch, for water-cooled degreasers;

(iii) Spray pump control switch, for solvent flow cleaning; and

(iv) Sump heat shut-off process control switch or a float for low liquid level indication.

(B) The degreaser shall be equipped with:

(i) an automated parts handling system;

(ii) circumferential primary condensing coils;

(iii) a circumferential trough;

(iv) a water separator;

(v) a freeboard ratio of at least 1.0, and

(vi) a superheated vapor zone.

In lieu of the superheated vapor zone, a refrigerated freeboard chiller may be used if the chilled air blanket temperature, measured at the center of the air blanket, is no greater than 40% of the boiling point of the solvent, in degrees Fahrenheit, for solvents that do not form azeotropes with water, or 50% of the boiling point, in degrees Fahrenheit, for solvents that form azeotropes with water. A water separator is not required for solvents that form azeotropes with water.

(2) Conveyorized (In-Line) Vapor Degreasers

(A) The degreaser shall be equipped with a high vapor cutoff thermostat with manual reset;

(B) Entrances and exits shall have an average clearance between each part and the edge of the degreaser opening of less than 10 centimeters (3.9 inches) or less than 10 percent of the width of the opening, whichever is less.

(C) All conveyorized (in-line) vapor degreasers shall be equipped with:

(i) an automated parts handling system;

(ii) circumferential primary condensing coils;

(iii) a circumferential trough;

(iv) a water separator;

(v) a freeboard ratio of at least 1.0;

(vi) a refrigerated freeboard chiller that is operated such that the chilled air blanket temperature measured at the center of the air blanket is no greater than 40% of the boiling point of the solvent, in degrees Fahrenheit, for solvents that do not form azeotropes with water, or 50% of the boiling point, in degrees Fahrenheit, for solvents that form azeotropes with water. A water separator is not required for solvents that form azeotropes with water, and;

(vii) a superheated vapor zone.

(3) Effective January 1, 2006, vapor degreasing operations shall be performed using a solvent with a VOC content of no more than 25 g/l, as used.

(f) Airless/Air-tight Cleaning System Requirements

In lieu of meeting the requirements of subdivisions (d) or (e), any person may use an airless/air-tight batch cleaning system, or a District, CARB and USEPA approved alternative cleaning system that achieves equivalent emission reductions, provided that all of the following applicable requirements are met:

(1) The equipment is operated in accordance with the manufacturer's specifications and operated with a door or other pressure sealing apparatus that is in place during all cleaning and drying cycles.

(2) All waste solvents are stored in properly identified and sealed containers. All associated pressure relief devices shall not allow liquid solvents to drain out.

(3) Spills during solvent transfer shall be wiped up immediately, and the used wipe rags shall be stored in closed containers that are handled in accordance with paragraph (f)(2).

(4) The equipment is maintained in a vapor-tight, leak-free condition and any leak is a violation.

(g) Degreasers Using NESHAP Halogenated Solvents

(1) The provisions of this subdivision are applicable to any batch-loaded cold cleaner, open-top vapor degreasers, and conveyorized (in-line) degreasers using NESHAP halogenated solvents as defined in paragraph (b)(28), as a cleaning solvent.

(2) The owner or operator shall operate the equipment in compliance with the most recent version of 40 CFR Part 63, Subpart T - National Emission Standards for Halogenated Solvent Cleaning (Sections 63.460 - 63.469).

(3) Effective January 1, 2003, any owner or operator of a solvent cleaning device as specified in paragraph (g)(1) shall use such equipment with an airless/air-tight cleaning system or approved alternative equipment that complies with the requirements of subdivision (f).

(h) Compliance Test Methods

(1) The VOC content of materials subject to the provisions of this rule shall be determined by the EPA Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A), or by the most recent version of SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual. The VOC content of materials containing 50 g/l of VOC or less shall be determined by the most recent version of SCAQMD Method 313 (Determination of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry) or any other alternative test methods approved by the USEPA, CARB, and the District.

(2) When more than one test method or set of methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(3) The initial boiling point of solvents shall be determined by ASTM Method D-1078-78, "Standard Test Method for Distillation Range of Volatile Organic Liquids."

(4) Measurements of average workroom draft rate shall be done parallel to the plane of the degreaser opening using a thermistor anemometer, with an accuracy within ±2 feet per minute, and a calibration traceable to the National Institute of Standards and Technology.

(5) Maximum hoist speed shall be measured with use of a stop clock and distance traveled by the hoist.

(6) Temperatures in the vapor zone shall be measured with the use of a temperature probe.

(7) Determination of Efficiency of Emission Control System

(A) The capture efficiency of an emission control system shall be determined by verifying the use of a Permanent Total Enclosure (PTE) and 100% capture efficiency as defined by USEPA Method 204, “Criteria for and Verification of a Permanent or Temporary Total Enclosure.” Alternatively, if a USEPA Method 204 defined PTE is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in the USEPA technical guidance document “Guidelines for Determining Capture Efficiency, January 9, 1995.” Individual capture efficiency test runs subject to the USEPA technical guidelines shall be determined by:

(i) The Temporary Total Enclosure (TTE) approach of USEPA Methods 204 through 204F; or

(ii) The District “Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency.”

(B) The control equipment efficiency of an emission control system as specified in subparagraph (k)(1)(D), on a mass emissions basis, and the VOC concentrations in the exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon), or SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources), as applicable. USEPA Test Method 18, or

CARB Method 422 shall be used to determine emissions of exempt compounds.

(i) Monitoring, Recordkeeping, and Reporting

(1) A person owning or operating any open-top vapor degreaser or airless/air-tight cleaning system with a VOC-containing solvent shall record at monthly intervals the following information in a format which will provide all the data shown in Attachment A:

(A) the weight, in pounds, of VOCs added to the degreaser in the calendar month (W_a);

(B) the weight, in pounds, of VOCs removed from the degreaser in the calendar month (W_b);

(C) the weight, in pounds, of VOCs contained in the solid waste removed from the degreaser in the calendar month (W_c); and

(D) the monthly emissions (E) determined by the following equation:

$$E = W_a - W_b - W_c .$$

In lieu of test data, the VOCs contained in the solid waste (W_c) may be calculated as 50% of the weight (in pounds) of the solid waste material removed from the degreasers.

The monthly record shall also include:

(i) the SCAQMD permit number, or serial/identification number for the degreaser;

(ii) the product name of the cleaning material;

(iii) the VOC content of the cleaning material; and

(iv) the boiling point of the cleaning material.

Records shall be retained for a period of at least two years, and be made available to the Executive Officer upon request.

(2) A person using a NESHAP halogenated solvent shall comply with the recordkeeping provisions identified in the most recent version of 40 CFR Part 63, Subpart T - National Emission Standards for Halogenated Solvent Cleaning (Section 63.467).

(j) General Prohibitions

A person shall not perform solvent degreasing operations, subject to the provisions of this rule, with HCFC-141b (1,1-dichloro-1-fluoroethane) which is

listed as a Group I exempt compound in Rule 102, or with any other solvent prohibited for use in solvent degreasing operations by the USEPA.

(k) Exemptions

(1) The provisions of this rule shall not apply to:

(A) Prior to January 1, 2006, vapor degreasers using cleaning materials that contain 50 g/l of VOC or less, as used, with no NESHAP halogenated solvents, where the VOC content is determined according to test methods specified in paragraph (h)(1).

(B) Effective January 1, 2006, vapor degreasers using cleaning materials that contain 25 g/l of VOC or less, as used, with no NESHAP halogenated solvents, where the VOC content is determined according to test methods specified in paragraph (h)(1).

(C) Batch-loaded cold cleaners and vapor degreasers, until June 1, 2005, with open-top surface areas less than 1.0 square foot (0.1 square meter), or with a capacity of less than 2 gallons, provided:

(i) the equipment is used only for electrical, high precision optics or electronics applications; or aerospace and military applications for cleaning solar cells, laser hardware, space vehicle components, fluid systems; or components used solely in research and development programs, or laboratory tests in quality assurance laboratories;

(ii) solvent usage is less than five (5.0) gallons per calendar month, and after January 1, 2003, contains no NESHAP halogenated solvents;

(iii) the equipment is operated in compliance with the applicable work practice requirements of paragraphs (c)(1) or (c)(2), except for subparagraphs (c)(1)(E) and (J) or (c)(2)(F); and

(iv) the operator meets the requirements for Monitoring, Recordkeeping, and Reporting of subdivision (i).

(D) After June 1, 2005, batch loaded cold cleaners or vapor degreasers, with open-top surface area less than 1.0 square foot (0.1 square meter) or with a capacity of less than 2 gallons, that are vented to a VOC emission collection and control system provided:

(i) the equipment is used only for cleaning high-precision optics, electrical or electronic components; or aerospace and military applications for cleaning solar cells, laser hardware, fluid systems, and space vehicle components; and

(ii) the emission collection and control system shall collect at least 90 percent, by weight, of the emissions generated by the degreasing operation and have a destruction efficiency of at least 95 percent, by weight, as determined pursuant to (h)(7); and

(iii) no NESHAP halogenated solvents are used; and

(iv) the equipment is operated in accordance with the applicable work practice requirements of paragraphs (c)(1) or (c)(2), excluding respectively subparagraphs (c)(1)(E), (J) and (K), and (c)(2)(D), (E), (F) and (N); and

(v) the operator meets the Monitoring, Recordkeeping, and Reporting requirements of subdivision (i).

(E) After June 1, 2005, batch loaded cold cleaners or vapor degreasers, with open-top surface area less than 1.0 square foot (0.1 square meter) or with a capacity of less than 2 gallons, provided:

(i) the equipment is used only for cleaning electronic components that are designed to travel over 100 miles above the earth's surface; and

(ii) the VOC emissions from all of the equipment do not exceed 22 pounds per month per facility, and no NESHAP halogenated solvents are used. However, for two or more facilities that consolidate at least 65% of each of their total VOC emissions from all of their equipment subject to this exemption to one consolidated facility, the VOC limit may be increased to 44 pounds total per month for the two consolidating facilities, or to 88 pounds total per month for three or more consolidating facilities until January 1, 2007 and to 66 pounds total per month thereafter, provided the following conditions are met:

(I) demonstrate to the satisfaction of the Executive Officer that the facilities whose monthly emission

limits are being transferred are under common ownership with the consolidated facility;

(II) that any applicable permits for the equipment being consolidated have been cancelled; and

(III) written concurrence of the 65% or more consolidation is obtained from the Executive Officer specifying the applicable VOC emission limit in (k)(1)(E)(ii) for the consolidating facilities.

The combined VOC emissions from the facilities involved in the consolidation process cannot exceed the applicable monthly emission limits provided in (k)(1)(E)(ii) for the consolidating facilities.

(F) After June 1, 2005, batch loaded cold cleaners or vapor degreasers, with open-top surface area less than 1.0 square foot (0.1 square meter) or with a capacity of less than 2 gallons, that are used solely for research and development programs, or laboratory tests in quality assurance laboratories, provided no NESHAP halogenated solvents are used.

(G) Motion picture film cleaning equipment.

(H) Until December 31, 2008, the cleaning of photocurable resins from stereolithography equipment and models provided no NESHAP halogenated solvents are used.

(I) Cleaning of medical devices.

(2) The provision of paragraph (e)(3) of this rule shall not apply to vapor degreasers containing VOC materials provided:

(A) the equipment is used only for cleaning electronic components that are designed to travel over 100 miles above the earth's surface; and

(B) the VOC emissions from the equipment do not exceed 22 pounds per month per facility, and the equipment contains no NESHAP halogenated solvent; and

(C) the Executive Officer has approved permit applications demonstrating that the requirements of subparagraphs (k)(2)(A) and (k)(2)(B) are met.

ATTACHMENT A

RECORDKEEPING FORMS

Form A: Equipment and Material Information

AQMD Permit No. If Applicable	**Identification No.**	**Name of Degreasing Material**
Manufacturer of Material	**Supplier of Material**	**VOC Content of Material (gm/l or lb/gal)**
VOC of Concentrate (g/l or lb/gal)	**Diluted (As Used) VOC Content (gm/l or lb/gal)**	**Boiling Point of the Material if Used in a Vapor Degreaser (degrees F or degrees C)**

Form B: Monthly Emissions Determination

Year	Name of Degreasing or Drying Solvent	W_a (lbs)	W_b (lbs)	W_c (lbs)	Monthly Emissions $\underline{(W_a - W_b - W_c)}$
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

$\underline{(W_a)}$ = Weight in pounds, of the VOCs added during any one calendar-month

$\underline{(W_b)}$ = Weight in pounds, of the VOCs removed from the degreaser or drying device, during the calendar-month

$\underline{(W_c)}$ = Weight in pounds, of the VOCs in the solid waste removed from the degreaser or drying device, during the calendar-month

(W_a), (W_b) = (Volume Used) x (VOC content, as Used)

$\underline{(W_c)}$ = Provided by hazardous waste hauler as the difference between the total weight of hazardous waste and the weight of the soil content or may be calculated as50% of the weight (in pounds) of the solid waste removed from the degreaser.

5/13/91

(Adopted May 4, 1979)(Amended April 4, 1980)(Amended Dec. 7 1990)

RULE 1123. REFINERY PROCESS TURNAROUNDS

(a) Definition

For the purpose of this rule, the following definition shall apply.

VESSEL means any container or structural envelope in which materials are processed or treated; it does not include any container whose principal purpose is material storage.

(b) Requirements

(1) During refinery process turnaround, a person shall not depressurize any vessel containing organic materials unless the vapors released from the vessel are collected and contained for use as fuel or sent to a gas disposal system until the pressure in the vessel is below five pounds per square inch, gauge, or is within ten percent above the minimum gauge pressure at which the vapors can be collected, whichever is lower.

(2) For every refinery that uses inert gas displacement or vacuum eduction for process turnaround, a person operating the refinery shall submit to the Executive Officer a plan which describes at least the following:

(A) the procedure used for gas displacement or eduction;

(B) the disposition of the displaced or educed organic gases;

(C) the stage in the displacement or eduction procedure at which the disposition is changed from a control facility to atmospheric venting, and

(D) the criteria by which said stage is identifiable.

(3) The Executive Officer shall approve the plan upon his determination that it provides for the maximum feasible control of emissions of displaced or educed organic gases without causing damage to equipment, malfunction of pollution control or safety devices, or violations of safety regulations and without installation or structural modification equipment which is not needed to comply with subparagraph (b)(1) of this rule.

(4) After approval of a plan, all displacement operations shall be conducted according to said plan unless another specifically approved plan is used.

(c) Recordkeeping

A refinery operator shall maintain a record of each refinery process unit turnaround containing at a minimum the date the unit was shut down, the approximate vessel hydrocarbon concentration when hydrocarbons were first discharged into the atmosphere, and the approximate amount of hydrocarbons emitted into the atmosphere. Such records shall be kept at the facility for at least two years, and shall be made available to District staff upon request.

(d) Exemptions

Any vessel, or group of vessels, that has been depressurized to less than five pounds per square inch, gauge, shall be exempted from the provisions of subparagraph (b)(2) by the Executive Officer upon determination by the Executive Officer that the use of existing control facilities to comply with subparagraph (b)(2) is likely to damage equipment, cause the malfunction of pollution control or safety devices, or cause violations of safety regulations.

(Adopted July 6, 1979)(Amended May 7, 1982)(Amended January 6, 1984)
(Amended June 1, 1984)(Amended January 9, 1987)(Amended February 6, 1987)
(Amended April 3, 1987)(Amended May 5, 1989)(Amended March 2, 1990)
(Amended April 6, 1990)(Amended June 1, 1990)(Amended November 2, 1990)
(Amended December 7, 1990)(Amended August 2, 1991)(Amended March 6, 1992)
(Amended December 4, 1992)(Amended December 10, 1993)
(Amended January 13, 1995)(Amended Dec. 13, 1996)(Amended September 21, 2001)

RULE 1124. AEROSPACE ASSEMBLY AND COMPONENT MANUFACTURING OPERATIONS

(a) Purpose and Applicability

The purpose of Rule 1124 is to reduce volatile organic compound (VOC) emissions from aerospace assembly and component manufacturing operations. This rule applies to any operation associated with manufacturing and assembling products for aircraft and space vehicles for which an aerospace material is used. The affected industries include commercial and military aircraft, satellite, space shuttle and rocket manufacturers and their subcontractors. The rule also applies to maskant applicators, aircraft refinishers, aircraft fastener manufacturers, aircraft operators, and aircraft maintenance and service facilities

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) ADHESION PROMOTER is a primer that is used to promote wetting and form a chemical bond with a subsequently applied sealant or other elastomer.

(2) ADHESIVE is any substance that is used to bond one surface to another surface by attachment

(3) ADHESIVE BONDING PRIMER is a primer that is applied to an aerospace component to increase adhesive or adhesive film bond strength. Adhesive bonding primers are of two types: those that cure at or below 250°F and those that cure above 250°F.

(4) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that is dispensed by means of a propellant, and is packaged in a disposable can for hand-held application.

(5) AEROSPACE COMPONENT is the raw material, partial or completed fabricated part, assembly of parts, or completed unit of any aircraft or space vehicle and includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons.

(6) AEROSPACE MATERIAL is any coating, primer, adhesive, sealant, maskant, lubricant, stripper or hand-wipe cleaning or clean-up solvent used during the manufacturing, assembly, refinishing, maintenance or service of an aerospace component. For the purposes of this rule material shall mean aerospace material.

(7) AIRCRAFT is any machine designed to travel through the air, without leaving the earth's atmosphere, whether heavier or lighter than air, including airplanes, balloons, dirigibles, helicopters, and missiles.

(8) ANTICHAFE COATING is a coating applied to areas of moving aerospace components which may rub during normal operation.

(9) ANTI-WICKING WIRE COATING is the outer coating of a wire which prevents fluid wicking into insulation of the wire.

(10) BARRIER COATING is a coating applied in a thin film to fasteners to inhibit dissimilar metal corrosion and to prevent galling.

(11) CHEMICAL MILLING is the removal of metal by chemical action of acids or alkalis.

(12) CLEAR TOPCOAT is a topcoat that contains no visible pigments and is uniformly transparent when applied.

(13) COATING APPLICATION EQUIPMENT is equipment used for applying coating to a substrate. Coating application equipment includes coating distribution lines, coating hoses, pressure-pots, spray guns, and hand-application equipment, such as hand-rollers, brushes, daubers, spatulas, and trowels.

(14) CONFORMAL COATING is a coating applied to electrical conductors and circuit boards to protect them against electrical discharge damage and/or corrosion.

(15) DRY LUBRICATIVE MATERIALS are coatings consisting of lauric acid, cetyl alcohol, waxes or other non-cross linked or resin bound materials which act as a dry lubricant or protective coat.

(16) ELECTRIC- or RADIATION-EFFECT COATINGS include electrically conductive coatings and radiation effect coatings, the uses of which may include prevention of radar detection.

(17) ELECTRONIC WIRE COATING is the outer electrical insulation coating applied to tape insulation of a wire specifically formulated to smooth and fill edges.

(18) ELECTROSTATIC DISCHARGE PROTECTION COATING is a coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy.

(19) EPOXY BASED FUEL-TANK COATING is a coating which contains epoxy resin that is applied to a fuel tank of an aircraft to protect it from corrosion and/or bacterial growth.

(20) EXEMPT COMPOUNDS: As defined in Rule 102.

(21) FACILITY is all the buildings, equipment and materials on one contiguous piece of property.

(22) FASTENER MANUFACTURER is a facility that coats aircraft fasteners, such as pins, collars, bolts, nuts, and rivets, with solid-film lubricants for distribution to other facilities.

(23) FIRE-RESISTANT COATING is a cabin interior coating that meets for civilian aircraft the Federal Aviation Administration-required Ohio State University Heat Release, Fire and Burn Tests; for military aircraft, Aircraft Structural Integrity Program in MIL-STD-1530A and MIL-A-87221 (Northrop's MS-445-3.3.2.1 and MS-445-3.3.2.2).

(24) FLIGHT-TEST COATING is a coating applied to an aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

(25) FUEL-TANK ADHESIVE is an adhesive used to bond components exposed to fuel and must be compatible with fuel-tank coatings.

(26) FUEL-TANK COATING is a coating applied to a fuel tank of an aircraft to protect it from corrosion and/or bacterial growth.

(27) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:
- Ws = weight of volatile compounds in grams
- Ww = weight of water in grams
- Wes = weight of exempt compounds in grams
- Vm = volume of material in liters
- Vw = volume of water in liters
- Ves = volume of exempt compounds in liters

For aerospace materials that contain reactive diluents the grams of VOC per Liter of Coating Less Water and Less Exempt Compounds shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:
- Ws = weight of volatile compounds evolved during curing and analysis, in grams
- Ww = weight of water evolved during curing and analysis, in grams
- Wes = weight of exempt compounds evolved during curing and analysis, in grams
- Vm = volume of the material prior to reaction, in liters
- Vw = volume of water evolved during curing and analysis, in liters
- Ves = volume of exempt compounds evolved during curing and analysis, in liters

(28) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where:
- Ws = weight of volatile compounds in grams
- Ww = weight of water in grams
- Wes = weight of exempt compounds in grams
- Vm = volume of material in liters

(29) HAND APPLICATION METHOD is the application of materials by manually held, non-mechanically operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

(30) HIGH-TEMPERATURE COATING is a coating that must withstand temperatures of more than 350oF.

(31) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is a material application system which is operated at air pressure of between 0.1 and 10 pounds per square inch gauge (psig).

(32) IMPACT-RESISTANT COATING is a flexible coating that protects aerospace components, such as aircraft landing gear, and landing gear compartments, and other surfaces subject to impact and abrasion from runway debris.

(33) LINE-SEALER MASKANT is a maskant used to cover scribe lines in maskant in order to protect against etchant in multi-step etching processing.

(34) LONG TERM PRIMER (METAL TO STRUCTURAL CORE BONDING) is an adhesive bonding primer that has met the aircraft manufacturers' required performance characteristics following 6000 hours testing, used for metal to structural core bonding, and with an adhesive that is specified to be cured at 350oF ± 10°F.

(35) LOW-SOLIDS ADHESIVE, COATING, PRIMER OR SEALANT is an adhesive, coating, primer or sealant which has less than one pound of solids per gallon of material. Such solids are the non-volatiles remaining after a sample is heated at 110oC for one hour.

(36) LOW-SOLIDS CORROSION RESISTANT PRIMER is a corrosion resistant polyurethane compatible primer with enhanced adhesion and rain erosion resistance which contains no more than 45 percent solids, by weight, as applied.

(37) MASKANT FOR CHEMICAL MILLING is a coating applied directly to an aerospace component to protect surface areas when chemical milling the component.

(38) MASKANT FOR CHEMICAL PROCESSING is a coating applied directly to an aerospace component to protect surface areas when anodizing, aging,

bonding, plating, etching, and/or performing other chemical surface operations on the component.

(39) METALLIZED EPOXY COATING is a coating that contains relatively large quantities of flake pigmentation for appearance and/or added protection.

(40) MOLD RELEASE COATING is a coating applied to the surface of a mold to prevent the molded component from sticking to the mold as it is removed.

(41) NON-STRUCTURAL ADHESIVE is an adhesive that bonds non-load-carrying aircraft components in non-critical applications and is not covered in any other specialty adhesive categories.

(42) OPTICAL ANTI-REFLECTION COATING is a coating with a low reflectance in the infrared and visible wavelength range and is used for anti-reflection on or near optical and laser hardware.

(43) PHOTOLITHOGRAPHIC MASKANT is a coating applied by photoresist operation(s) directly to printed circuit boards, and ceramic and similar substrates to protect surface areas from chemical milling or chemical processing.

(44) PHOTORESIST OPERATION is a process for the application or development of photoresist masking solution on a substrate, including preparation, soft bake, develop, hard bake, and stripping, and can be generally subdivided as follows:

(A) Negative Photoresist Operation is a process where the maskant hardens when exposed to light and the unhardened maskant is stripped, exposing the substrate surface for chemical milling or chemical processing.

(B) Positive Photoresist Operation is a process where the maskant softens when exposed to light and the softened maskant is stripped, exposing the substrate surface for chemical milling or chemical processing.

(45) PRETREATMENT PRIMER is a primer which contains no more than 12 percent solids by weight, and at least ½-percent acid by weight, to provide surface etching and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

(46) PRIMER is a coating applied directly to an aerospace component for purposes of corrosion prevention, protection from the environment, functional fluid resistance and/or adhesion of subsequent coatings, adhesives, or sealants.

(47) PRIMER COMPATIBLE WITH RAIN EROSION RESISTANT COATING is a primer to which rain erosion resistant topcoat is applied.

(48) RAIN EROSION-RESISTANT COATING is a coating that protects leading edges, flaps, stabilizers, and engine inlet lips against erosion caused by rain impact during flight.

(49) REPAIR COATING is a coating used to recoat portions of a product which has sustained mechanical damage to the coating following normal painting operations.

(50) REMANUFACTURED AIRCRAFT PARTS are aerospace components that are built as spare parts or replacement parts subject to an existing commercial aircraft specification.

(51) REPAIR MASKANT is a maskant used to cover imperfections in the maskant coat.

(52) REWORK is the inspection, repair, and reconditioning of aerospace components subject to this rule.

(53) RUBBER SOLUTION FUEL-TANK COATING is a fuel-tank coating which performs as a sealant and protects the tank from corrosion and/or bacterial growth and is formulated with a butadiene acrylonitrile copolymer.

(54) SCALE INHIBITOR is a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of tenacious scale.

(55) SEALANTS are viscous semisolid materials that fill voids in order to seal out water, fuel, and other liquids and solids, and in some cases, air movement.

(56) SHORT TERM PRIMER (METAL TO STRUCTURAL CORE BONDING) is an adhesive bonding primer that has met the manufacturers' required performance characteristics following 1000 hours testing, used for metal to metal and metal to structural core bonding, and with an adhesive which is specified to be cured at a temperature of 350°F ± 10°F.

(57) SOLID-FILM LUBRICANT is a very thin coating consisting of a binder system containing as its chief pigment material one or more of the

following: molybdenum disulfide, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying surfaces.

(58) SONIC AND ACOUSTIC APPLICATIONS are the use of aerospace materials on aerospace components that are subject to mechanical vibration and/or sound wave cavitation.

(59) SPACE-VEHICLE is a vehicle designed to travel beyond the earth's atmosphere.

(60) STENCIL COATING is an ink or a coating that is rolled, sprayed with an airbrush or a touch-up gun, or brushed, while using a template to add identifying letters and/or numbers to aerospace components.

(61) STRIPPER is a volatile liquid applied to remove cured aerospace materials or their residues.

(62) STRUCTURAL ADHESIVE - AUTOCLAVABLE is an adhesive used to bond load-carrying aircraft components and is cured by heat and pressure in an autoclave.

(63) STRUCTURAL ADHESIVE - NON-AUTOCLAVABLE is an adhesive cured under ambient conditions and is used to bond load-carrying aircraft components or other critical functions, such as nonstructural bonding in the proximity of engines.

(64) TEMPORARY MARKING COATING is an ink or a coating used to make identifying markings, and is removed prior to delivery of the aerospace component and/or assembly.

(65) TEMPORARY PROTECTIVE COATING is a coating applied to an aerospace component to protect it from mechanical and environmental damage during manufacturing.

(66) TOPCOAT is a coating applied over a primer for purposes such as appearance, identification, or protection.

(67) TOUCH-UP COATING is a coating used to cover minor coating imperfections appearing after the main coating operation.

(68) TOXICITY-WEIGHTED EMISSION REDUCTION EFFICIENCY is the difference between the uncontrolled and the controlled toxicity-weighted total emissions divided by the uncontrolled toxicity-weighted total emissions and multiplied by 100. Toxic organic solvent and toxic particulate matter toxicity-weighted emission reduction efficiencies are calculated separately and are represented by the following equation:

$$h = \frac{T_u - T_c}{T_u} \times 100$$

Where: η = The toxicity-weighted emission reduction efficiency

T_u = The uncontrolled toxicity-weighted total emissions

T_c = The controlled toxicity-weighted total emissions

(69) TOXICITY-WEIGHTED TOTAL EMISSIONS is the sum of the product of the mass emissions and the unit risk factor for each toxic component of aerospace material used per year. There are two toxicity-weighted total emission values, one for uncontrolled emissions and the other for controlled emissions. Toxicity-weighted total emissions for toxic organic solvents and toxic particulate matter are calculated separately and are represented by the following equations:

$$T_u = \sum_{i=1}^{n} m_i U_i$$

$$T_c = \sum_{i=1}^{n} (1 - E_i)(m_i U_i) + \sum_{j=1}^{m} (1 - E_j)(m_j U_j)$$

Where: T_u = The uncontrolled toxicity-weighted total emissions

T_c = The controlled toxicity-weighted total emissions

m_i = Baseline mass emissions of each toxic organic solvent or toxic particulate matter as established in a District approved Health Risk Assessment in pounds per year

U_i Unit risk factor for each toxic organic solvent or toxic particulate matter in inverse micrograms per cubic meter $(\mu g/m^3)^{-1}$

E_i Overall control efficiency of the add-on control equipment for which aerospace materials containing toxic organic solvent or toxic particulate matter are vented to

m_j Additional mass emissions of each toxic organic solvent or toxic particulate matter to the baseline mass emissions that established a District approved Health Risk Assessment in pounds per year

U_j Unit risk factor for each toxic organic solvent or toxic particulate matter in inverse micrograms per cubic meter $(\mu g/m^3)^{-1}$

E_j Overall control efficiency of the add-on control equipment for which additional aerospace materials containing toxic organic solvent or toxic particulate matter will be vented to

(70) TOXIC ORGANIC SOLVENT is any volatile compound that has a finalized unit risk factor assigned by the Office of Environmental Health Hazard Assessment.

(71) TOXIC PARTICULATE MATTER is any non-volatile compound that has a finalized unit risk factor assigned by the Office of Environmental Health Hazard Assessment.

(72) TRANSFER EFFICIENCY is the ratio of the weight or volume of coating solids adhering to an object to the total weight or volume, respectively, of coating solids used in the application process, expressed as a percentage.

(73) TYPE I ETCHANT is a chemical milling etchant that contains varying amounts of dissolved sulfur and does not contain amines.

(74) TYPE II ETCHANT is a chemical milling etchant that is a strong sodium hydroxide solution containing amines.

(75) UNICOAT is a coating which is applied directly to an aerospace component for purposes of corrosion protection, environmental protection, and functional fluid resistance that is not subsequently topcoated.

(76) VOC COMPOSITE PARTIAL PRESSURE is the sum of the partial pressures of the compounds defined as VOCs.

VOC Composite Partial Pressure is calculated as follows:

$$PP_c = \sum_{i=1}^{n} \frac{\frac{W_i}{MW_i} \times VP_i}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

Where: W_i = Weight of the "i"th VOC compound, in grams

W_W = Weight of water, in grams

W_e = Weight of exempt compound, in grams

MW_i	=	Molecular weight of the "i"th VOC compound, in grams per gram-mole
MW_w	=	Molecular weight of water, in grams per gram-mole
MW_e	=	Molecular weight of exempt compound, in grams per gram-mole
Pp_c	=	VOC composite partial pressure at 20^{o}C, in mm Hg
Vp_i	=	Vapor pressure of the "i"th VOC compound at 20^{o}C, in mm Hg

(77) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(78) WING COATING is a corrosion-resistant coating that is resilient enough to withstand the flexing of the wings.

(79) WIRE INK is the surface identification stripe and mark on aerospace wire or cable that serves as an electrical insulator in the presence of high humidity.

(80) WIRE PREBONDING ETCHANT is a non-additive surface treatment process to provide bondability of aerospace wire coatings to the underlying insulation layer.

(c) Requirements

(1) VOC Content of Aerospace Materials

(A) A person shall not apply to aerospace components any materials, including any VOC-containing materials added to the original material supplied by the manufacturer, which contain VOC in excess of the limits specified below:

VOC Limit Grams of VOC per Liter, Less Water and Less Exempt Compounds			
Primers	**Current VOC Limit**	**VOC Limit Effective 1-1-03**	**VOC Limit Effective 1-1-05**
General Primer	350	350	350
Low-Solids Corrosion Resistant Primer	350	350	350
Pretreatment Primer	780	780	780
Rain Erosion-Resistant Coating Compatible Primer	850	850	850
Adhesion Promoter	850	850	250
Adhesive Bonding Primer			
New Commercial Aircraft	805	250	250
All Military Aircraft	805	805	805
Remanufactured Commercial Aircraft Parts	805	805	805
Sonic and Acoustic Applications	805	805	805
Adhesive Bonding Primer			
Long Term	250	250	250
Short Term	250	250	250

Coatings	**Current VOC Limit**	**VOC Limit Effective 3-01-02**
Topcoat	420	420
Clear Topcoat	520	520
Unicoat	420	420
Wing Coating	750	750
Impact Resistant Coating	420	420
High-Temperature Coating	850	850
Antichafe Coating	600	420
Rain Erosion-Resistant Coating	800	800
Conformal Coating	750	750
Optical Anti-Reflective Coating	700	700
Scale Inhibitor	880	880
Metallized Epoxy Coating	700	700

Coatings (cont'd)	Current VOC Limit	VOC Limit Effective 3-01-02
Electric or Radiation Effect Coating	800	800
Temporary Protective Coating	250	250
Fuel Tank Coatings	420	420
Mold Release Coatings	780	780
Flight Test Coatings		
Used on Missiles or Single Use Target Craft	420	420
All Other	840	840
Fire Resistant Coatings		
Commercial	650	650
Military	970	800
Wire Coatings		
Phosphate Ester Resistant Ink	925	925
Other	420	420
Space Vehicle Coatings		
Electrostatic Discharge Protection Coating	800	800
Other	1000	1000

Adhesives	Current VOC Limit
Non-Structural Adhesive	250
Structural Adhesive	
Autoclavable	50
Non-Autoclavable	850
Space Vehicle Adhesive	800
Fuel Tank Adhesive	620

Sealants	Current VOC Limit	VOC Limit Effective 3-01-02
Fastener Sealant	675	675
Extrudable,Rollable or Brushable Sealant	600	280
Other	600	600

Maskants	Current VOC Limit
For Chemical Processing	250
For Chemical Milling	
Type I	250
Type II	160
Photolithographic	850
Touch-up, Line Sealer Maskants	750

Lubricants	Current VOC Limit
Fastener Installation	
Solid-Film Lubricant	880
Dry Lubricative Materials	675
Fastener-Lubricative Coatings, Fastener Manufacturing	
Solid Film Lubricant	250
Dry Lubricative Materials	120
Barrier Coating	420
Non-Fastener Lubricative Coatings, Fastener Manufacturing	
Solid Film Lubricant	880
Dry Lubricative Materials	675

VOC LIMIT Grams of VOC per Liter of Material	
Cleaning Solvents and Strippers	**Current VOC Limit**
Cleaning Solvents	200 g/L or 45 mm Hg VOC Composite Partial Pressure
Strippers	300 g/L or 9.5 mm Hg VOC Composite Partial Pressure

(B) Documents shall be provided to the Executive Officer or his designee demonstrating that unicoat is being used in lieu of the application of a primer and topcoat, and the applicant must receive written approval for the use of unicoat specifying the conditions of application from the Executive Officer or his designee.

(C) For low-solids adhesives, coatings, primers or sealants, the appropriate limits in subparagraph (c)(1)(A) shall be expressed in grams of VOC per liter of material.

(2) Solvent Cleaning Operations; Storage and Disposal of VOC-Containing Materials

(A) Cleaning of material application equipment and storage of solvent laden cloth and paper shall comply with provisions of Rule 1171.

(B) A person shall not atomize any solvent into open air.

(3) Transfer Efficiency

A person or facility shall not apply aerospace materials unless they are applied with properly operating equipment or controlled, according to operating procedure specified by the equipment manufacturer or the Executive Officer or his designee, and by the use of one of the following methods:

(A) electrostatic application; or

(B) flow coater; or

(C) roll coater; or

(D) dip coater; or

(E) high-volume, low-pressure (HVLP) spray; or

(F) hand application methods; or

(G) such other alternative application methods as are demonstrated to the Executive Officer, using District-approved procedures, to be capable of achieving at least equivalent transfer efficiency to method (c)(3)(E) and for which written approval of the Executive Officer has been obtained; or

(H) Approved air pollution control equipment under paragraph (c)(4).

(4) Control Equipment

Owners and/or operators may comply with provisions of paragraphs (c)(1) and (c)(3) by using approved air pollution control equipment provided that the VOC emissions from such operations and/or materials are reduced in accordance with provisions of (A) and (B).

(A) The control device shall reduce emissions from an emission collection system by at least 95 percent, by weight, or the output of the air pollution control device is less than 50 PPM calculated as carbon with no dilution.

(B) The owner/operator demonstrates that the system collects at least 90 percent, by weight, of the emissions generated by the sources of emissions.

(d) Recordkeeping Requirements

Records shall be maintained pursuant to the requirements of Rule 109.

(e) Determination of VOC Content

The VOC content of materials subject to the provisions of this rule shall be determined by the following methods:

(1) EPA Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A). Analysis done according to EPA Method 24 shall utilize Procedure B of ASTM Method D-2369, referenced in EPA Method 24. The exempt solvent content shall be determined using SCAQMD Test Methods 302 and 303 (SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual) or;

(2) SCAQMD Test Methods 302, 303, and 304 (SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual).

The following classes of compounds: cyclic, branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision (c), only at such time as manufacturers specify which individual compounds are used in the coating formulations and identify the test methods, which, prior to such analysis, have been approved by the USEPA and the SCAQMD, that can be used to quantify the amounts of each exempt compound.

(f) Test Methods

(1) Efficiency of the control device shall be determined according to EPA Method 25, 25A, SCAQMD Test Method 25.1, or SCAQMD Test Method 25.3. Emissions determined to exceed any limits established by

this rule through the use of either of the above-referenced test methods shall constitute a violation of this rule.

(2) The capture efficiency of the emissions collection system shall be determined by the USEPA method cited in 55 FR (Federal Register) 26865, June 29, 1990 or any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD.

(3) The transfer efficiency of alternative application methods shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989".

(4) The identity and quantity of components in solvents shall be determined in accordance with SCAQMD test method 308 (Quantitation of Compounds by Gas Chromatography) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual. The VOC composite partial pressure is calculated using the equation in paragraph (b)(72).

(5) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(6) All test methods shall be those referenced in this section or any other applicable method approved by the USEPA, the California Air Resources Board, and the SCAQMD.

(g) Rule 442 Applicability

Any material, operation, or facility which is exempt from all or a portion of this rule, shall comply with the provisions of Rule 442.

(h) Prohibition of Solicitation of Violations

(1) A person shall not solicit or require any other person to use, in the District, any material or combination of materials to be applied to any aircraft component subject to the provisions of this rule that does not meet the limits and requirements of this rule, or of an Alternative Emission Control Plan (AECP) approved pursuant to the provisions of subdivision (i).

(2) The requirements of this paragraph shall apply to all written or oral agreements executed or entered into after April 3, 1987.

(i) Alternative Emission Control Plans

An owner/operator may comply with the provisions of paragraph (c)(1) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(j) Reporting Requirements

Persons who perform qualification acceptance testing on materials with a future compliance date for use in the District shall, beginning July 1, 1994 and at 6-month intervals thereafter, submit a status report describing the progress toward the development of materials which satisfy future compliance dates. These reports shall contain, at a minimum:

(1) Manufacturer, product number, VOC content, and applicable material category for each of the test candidates;

(2) Test expenditures for the period;

(3) Progress on candidates tested during this period.

(4) Approvals received for materials which comply with future compliance dates.

(5) Volume of materials used in each material category for which there is a future compliance date.

Facilities testing materials in the same material category may submit joint status reports. Once compliance with future compliance dates is achieved and a status report is submitted documenting such, no further status reports need be submitted.

(k) Air Toxics

In lieu of complying with subdivisions (e), (f), (h), and (i) of Rule 1402 - Control of Toxic Air Contaminants from Existing Sources, a facility may submit a compliance plan to the District for the Executive Officer's approval within 180 days from the date of Health Risk Assessment approval that demonstrates how a toxicity-weighted emissions reduction efficiency of at least 90.0 percent for toxic organic solvents and at least 99.0 percent for toxic particulate matter emissions has been achieved and will be maintained in the future.

(l) Exemptions

(1) The provisions of paragraph (c)(1) of this rule shall not apply to materials, exclusive of adhesives, with separate formulations that are used in volumes of less than 20 gallons per year provided that the total of such formulations applied annually by a facility is less than 200 gallons.

(2) The provisions of subdivision (c) of this rule shall not apply to a facility which uses a total of less than three gallons of VOC-containing materials on each and every day of operation.

(3) The provisions of paragraphs (c)(1) and (c)(3) of this rule shall not apply to incidental corrosion maintenance repair coating operations at military facilities, provided that the coating use at any maintenance repair location within the facility does not exceed 1.5 gallons per day, and the total coating usage for such operations at the facility does not exceed five gallons per day.

(4) The VOC limits for solvents and strippers shall not apply to space vehicle manufacturing.

(5) The provisions of paragraph (c)(1) shall not apply to clear or translucent coatings applied on clear or transparent substrates.

(6) The provisions of paragraph (c)(3) shall not apply to touch-up and stencil coatings.

(7) The provisions of paragraph (c)(1) shall not apply to the recoating of assembled aircraft at rework facilities if original coating formulations are used.

(8) The provisions of paragraph (c)(1) shall not apply to adhesives with separate formulations that are used in volumes of less than ten gallons per year.

(9) The provisions of paragraph (c)(3) shall not be applied to the application of materials marking coatings.

(10) The provisions of subdivision (c) shall not apply to laboratories which apply materials to test specimens for purposes of research, development, quality control, and testing for production-related operations.

(11) The provisions of subdivision (c) shall not apply to the application of temporary marking coatings.

(12) The VOC limits for solvents shall not apply to the surface cleaning of solar cells, fluid systems, avionic equipment, and laser optics.

(13) The provisions of subdivision (d) and paragraph (c)(3) shall not apply to the application of materials that contain less than 20 g/L of VOC per liter of material.

(14) The provisions of paragraph (c)(3) shall not apply to the use of materials dispensed from airbrush operations.

(15) The provisions of this rule shall not apply to aerosol coating products.

(16) Until January 1, 2005, the VOC limit for fuel tank coatings shall not apply to non-spray rubber solution fuel-tank coating, containing less than 710 g/L of VOC per liter of coating, used on fuel tanks with maximum capacity of 35 gallons and where the total facilitywide usage of this coating is less than 150 gallons per year. Records shall be maintained pursuant to the requirements of Rule 109 to establish eligibility for this exemption.

(Adopted April 6, 1979)(Amended January 8, 1982)(Amended December 7, 1984)
(Amended January 10, 1986)(Amended May 5, 1989)(Amended December 1, 1989)
(Amended March 2, 1990)(Amended November 2, 1990)(Amended December 7, 1990)
(Amended August 2, 1991)(Amended January 13, 1995)(March 7, 2008)

AMENDED RULE 1125. METAL CONTAINER, CLOSURE, AND COIL COATING OPERATIONS

(a) Applicability

This rule applies to all coating operations in the manufacturing and/or reconditioning of metal cans, drums, pails, lids, and closures. It also includes coating of the surface of flat metal sheets, strips, rolls, or coils during the manufacturing and/or reconditioning of metal containers, closures, and coils.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that are dispensed by means of a propellant, and are packaged in a disposable can for hand-held application.

(2) CLOSURE is any component which is used to close or seal a filled can, jar, or bottle.

(3) COATING APPLICATOR is any apparatus used to apply a surface coating.

(4) COATING LINE is any operation or process for applying, drying, or baking and/or curing surface coatings, together with associated equipment, such as a coating applicator, flash-off area, and oven.

(5) COIL is any flat metal sheet or strip that is rolled or wound in concentric rings.

(6) DRUM is any cylindrical metal shipping container larger than 12 gallons capacity but no larger than 110 gallons capacity.

(7) END SEALING COMPOUND is any compound which is applied to the can ends of a metal container and/or cover, and which functions as a gasket when the end is assembled.

(8) EXEMPT COMPOUNDS: are as defined in Rule 102-Definition of Terms.

(9) EXTERIOR BASE COATING is any coating applied to the exterior of a can body, end, or flat sheet to provide protection to the metal or to provide background for any subsequent printing operation.

(10) EXTERIOR END COATING is a coating applied to the exterior end of a can to provide protection to the metal.

(11) FOOD/BEVERAGE CAN is any metal container intended for packaging food or beverages.

(12) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds =

$$\frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:

W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters

(13) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_S = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters

(14) HAND APPLICATION METHOD is the application of coatings using manually held, non-automatic equipment. Examples of this method include, but are not limited to, application by paint brush, hand roller, trowel, spatula, dauber, rag, and sponge.

(15) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is a coating application system which is designed to be operated at air pressures between 0.1 and 10.0 pounds per square inch gauge (psig) at the air cap of the spray gun.

(16) INK is any coating used in any operation that imparts color, design, alphabet, or numerals on an exterior surface of a metal container, closure, or coil.

(17) INKJET INKS are inks used in conjunction with a printing process where images are formed by the precise placement of small (picoliter-sized) droplets of ink fired at high speeds from the nozzle(s) of computer-controlled printheads. For the purposes of this rule, inks used with modular electric spray ink dot equipment shall also be considered as inkjet inks.

(18) INKJET MAKE-UP SOLVENT is a solvent that is added to an inkjet ink after it has been recirculated in a continuous inkjet printing process.

(19) INTERIOR BASE COATING is any coating applied to the interior of a can body, end, or flat sheet to provide a protective lining between the product and the can.

(20) INTERIOR BODY SPRAY is any coating sprayed on the interior of the can body to provide a protective film between the product and the can.

(21) METAL CONTAINER, CLOSURE, AND COIL COATING is any VOC-containing coating applied to the surfaces of metal cans, drums, pails, lids, closures, or to the surface of flat metal sheets, strips, rolls, or coils during the manufacturing and/or reconditioning process.

(22) NECKER LUBRICANT is any fluid or solid lubricant applied to a can forming tool to reduce friction while reducing the can diameter to form a neck.

(23) OVERVARNISH is any coating applied directly over a design coating to reduce the coefficient of friction, to provide gloss, and to protect the finish against abrasion and corrosion.

(24) PAIL is any cylindrical metal shipping container of from 1-gallon to 12-gallon capacity and constructed of 29 gauge or heavier material.

(25) SOLVENT CLEANING OPERATION is the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants from parts, products, tools, machinery, equipment, and general work areas. Contaminants include, but are not limited to, dirt, soil, and grease. In a cleaning process which consists of a series of cleaning methods, each distinct method shall constitute a separate solvent cleaning operation.

(26) THERMOCHROMIC INK is an ink that changes color when subject to a temperature change.

(27) THREE-PIECE CAN SIDE SEAM SPRAY is any coating sprayed on a welded, cemented, or soldered seam to protect the exposed metal.

(28) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102-Definition of Terms.

(c) Requirements

(1) Any person shall not use or apply any coating on any coating line of the type designated below which contains any volatile organic compound in excess of the following limits, expressed as grams of VOC per liter of coating or pounds per gallon of coating, less water and less exempt compounds, except for inkjet inks and inkjet make-up solvents, where the referenced VOC limit is expressed as grams of VOC per liter of material or pounds per gallon of material:

COATING CATEGORY	**VOC LIMITS**	
	g/L	Lb/gal
Can Coatings		
Three-Piece Can Sheet Basecoat (Exterior and Interior Overvarnish)	225	1.9
Two-Piece Can Exterior Basecoat and Overvarnish	250	2.1
Can Interior Body Spray		
Two-Piece Can	440	3.7
Three-Piece Can	510	4.2
Three-Piece Can Side Seam Spray	660	5.5
Drums, Pails, and Lids Coatings		
New		
Exterior	340	2.8
Interior	420	3.5
Reconditioned		
Exterior	420	3.5
Interior	510	4.2
Coil Coatings		
Coatings	200	1.7

All Operations		
Necker Lubricants	100	0.8
End Sealing Compounds		
Food/Beverage Cans	440	3.7
Effective 7-1-08	20	0.17
Non-Food Containers	0	0
Inks		
Other than Inkjet	300	2.5
Inkjet	250*	2.1*
Thermochromic Inkjet	700*	5.8*
Inkjet Make-Up Solvents		
General Inkjet	250*	2.1*
Thermochromic Inkjet	800*	5.8*

* Different VOC determination method

(2) Any person may comply with the provisions of paragraph (c)(1), and/or (c)(5) by using an emission control system, for reducing VOC emissions which has been approved in writing by the Executive Officer.

(A) The emission control system shall collect at least 90 percent by weight of the emissions generated using USEPA, ARB, and District methods specified in subparagraph (e)(2)(A) and have a destruction efficiency of at least 95 percent by weight, or

(B) The approved system shall reduce the VOC emissions when using non-compliant coatings to an equivalent or greater level that would be achieved by the provisions in paragraph (c)(1). The required efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by the following equation:

$$C.E. = \left[\left| 1 - \left\{ \left| \frac{(VOC_{LWc})}{(VOC_{LWn\ Max})} \right| \times \frac{1 - \left(\left| \frac{VOC_{LWn\ Max}}{D_{n\ Max}} \right| \right)}{1 - \left(\left| \frac{VOC_{LWc}}{D_c} \right| \right)} \right\} \right| \right] \times 100$$

Where:

C.E.	=	Control Efficiency, percent
VOC_{LWc}	=	VOC Limit of Rule 1125, less water and less exempt compounds, pursuant to subdivision (c)
$VOC_{LWn\ Max}$	=	Maximum VOC content of non-compliant coating used in conjunction with a control device, less water and less exempt compounds
$D_{n\ Max}$	=	Density of solvent, reducer, or thinner contained in the non-compliant coating, containing the maximum VOC content of the multicomponent coating
D_c	=	Density of corresponding solvent, reducer, or thinner used in the compliant coating system = 880g/L

(3) Alternative Emission Control Plan

Owners and/or operators may comply with the provisions of paragraph (c)(1) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(4) Transfer Efficiency

A person or facility shall not apply any coating subject to the provisions of this rule unless the coating is applied with properly operating equipment according to operating procedures specified by the equipment manufacturer or the Executive Officer or his designee, and by the use of one of the following methods:

(A) electrostatic application; or

(B) flow coat; or

(C) roll coat; or

(D) dip coat; or

(E) high-volume, low-pressure (HVLP) spray; or

(F) hand application methods; or

(G) printing techniques, such as inkjet printing; or

(H) such other coating application methods as are demonstrated to the Executive Officer to be capable of achieving a transfer efficiency equivalent or better to the method listed in subparagraph (c)(4)(E) and for which written approval of the Executive Officer has been obtained.

(5) Solvent Cleaning Operations; Storage and Disposal of VOC-containing Materials

All solvent cleaning operations and the storage and disposal of VOC-containing materials used in solvent cleaning operations shall be carried out pursuant to Rule 1171 - Solvent Cleaning Operations.

(6) Recordkeeping

Notwithstanding provisions of subdivision (g), records shall be maintained pursuant to Rule 109, except that usage records for complying inks may be grouped by ink categories and each category constitutes a different VOC content.

(d) Prohibition of Specification and Sale

(1) A person shall not solicit or require any other person to use, in the District, any coating or combination of coatings to be applied to any metal container, closure, or coil subject to the provisions of this rule that does not meet the limits and requirements of this rule, or of an Alternative Emission Control Plan (AECP) approved pursuant to the provisions of paragraph (c)(3) of this rule.

(2) The requirements of paragraph (d)(1) shall apply to all written or oral agreements executed, entered into, or renewed including options after December 1, 1989.

(3) A person shall not sell, offer for sale, use, or apply any coating within the district, applied to any metal container, closure, or coil subject to the provisions of this rule, containing the following exempt compounds:

methylene chloride,
trifluoromethane (FC-23),
trichlorotrifluoroethane (CFC-113),
dichlorodifluoromethane (CFC-12),
trichlorofluoromethane (CFC-11),
dichlorotetrafluoroethane (CFC-114), and
chloropentafluoroethane (CFC-115).

(4) A person shall not sell or offer for sale for use within the District any coating which contains volatile organic compounds in excess of the limits specified in this rule for any application governed by this rule unless the label on the product or the data sheets for the product clearly bear the warning that the coating shall not be used unless compliance with the rule can be achieved.

(e) Methods of Analysis

All applicable methods of analysis shall be as cited in paragraphs (e)(1) through (e)(5) below, or any other applicable method approved in writing by the Executive Officer, United States Environmental Protection Agency (U.S. EPA), and the

California Air Resources Board (CARB), provided the approved alternative method is equivalent to those listed below.

(1) The VOC content of coatings subject to the provisions of this rule shall be determined by the following methods:

(A) United States Environmental Protection Agency (U.S. EPA) Reference Method 24 (Code of Federal Regulations Title 40 Part 60, Appendix A,). The exempt compound content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOC) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with subdivision (c), only when manufacturers specify which individual compounds are used in the coating formulation. In addition, the manufacturers must identify the U.S. EPA, California Air Resources Board, and the SCAQMD approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Efficiency of Emission Control System

(A) The efficiency of the collection device of the emission control system as specified in paragraph (c)(2) shall be determined by the procedures presented in the U.S. EPA technical guidance document, "Guidelines for Determining Capture Efficiency, January 9, 1995." Notwithstanding the test methods specified by the Guidelines, any other method may be substituted if approved by the Executive Officer, U.S. EPA, and CARB.

(B) The efficiency of the control device of the emission control system as specified in paragraph (c)(2) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by U.S. EPA Test Methods 25, 25A, or SCAQMD Test Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) or SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources) as applicable. U.S. EPA Test Method 18, or CARB Method 422 shall be used to determine emissions of exempt compounds.

(3) The transfer efficiency of alternative coating application methods shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989".

(4) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

(5) All test methods referenced in this section shall be the most recently approved version.

(f) Rule 442 Applicability

Any metal container, closure, or coil coating operation or facility which is exempt from all or a portion of this rule shall comply with the provisions of Rule 442.

(g) Exemptions

(1) The provisions of this rule shall not apply to the spray coating of one gallon per day or less of coatings at a single facility.

(2) The provisions of this rule shall not apply to aerosol coating products.

SOUTH COAST

2/2/95

(Adopted February 2, 1979)(Amended January 8, 1982)(Amended May 5, 1989)
(Amended Nov. 2, 1990)(Amended Dec. 7, 1990)(Amended August 2, 1991)
(Amended March 6, 1992)(Amended January 13, 1995)

RULE 1126. MAGNET WIRE COATING OPERATIONS

(a) Applicability

This rule applies to all coating operations on magnet wire, where the wire is continuously drawn through a coating applicator.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that is dispensed by means of a propellant, and is packaged in a disposable can for hand-held application.

(2) EXEMPT COMPOUNDS are any of the following compounds:

(A) Group I

trifluoromethane (HFC-23)
pentafluoroethane (HFC-125)
1,1,2,2-tetrafluoroethane (HFC-134)
tetrafluoroethane (HFC-134a)
1,1,1-trifluoroethane (HFC-143a)
1,1-difluoroethane (HFC-152a)
chlorodifluoromethane (HCFC-22)
dichlorotrifluoroethane (HCFC-123)
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)
dichlorofluoroethane (HCFC-141b)
chlorodifluoroethane (HCFC-142b)
cyclic, branched, or linear, completely fluorinated alkanes
cyclic, branched, or linear, completely fluorinated ethers with no unsaturations
cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations
sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

(B) Group II

methylene chloride
1,1,1-trichloroethane (methyl chloroform)
trichlorotrifluoroethane (CFC-113)

SOUTH COAST

dichlorodifluoromethane (CFC-12)
trichlorofluoromethane (CFC-11)
dichlorotetrafluoroethane (CFC-114)
chloropentafluoroethane (CFC-115)

The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, production of chlorofluorocarbons (CFC), 1,1,1-trichloroethane (methyl chloroform), and carbon tetrachloride will be phased out in accordance with the Code of Federal Regulations Title 40, Part 82 (December 10, 1993).

(3) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters

(4) MAGNET WIRE is wire used in electro-magnetic field application in electrical equipment, such as transformers, motors, generators, and magnetic tape recorders.

(5) MAGNET WIRE COATING OPERATIONS is the application of any coating on magnet wire, where the wire is continuously drawn through a coating applicator.

(6) SOLVENT CLEANING OPERATION is the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants. Contaminants include, but are not limited to, dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas. In a cleaning process which consists of a series of cleaning methods, each distinct method shall constitute a separate solvent cleaning operation.

(7) VOLATILE ORGANIC COMPOUND (VOC) is defined as any volatile compound containing the element carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(c) Requirements

(1) Any person shall not use or apply any magnet wire coating which contains more than 200 grams VOC per liter (1.67 lb/gal) of coating less water and less exempt compounds, or

(2) Any person applying magnet wire coating may comply with the provisions of paragraph (c)(1) by using an emission control system, for reducing emissions of VOC, which has been approved in writing by the Executive Officer.

(A) The emission control system shall achieve at least 90 percent overall efficiency by direct incineration at 1499°F or higher, or

(B) The approved system shall reduce the VOC emissions when using non-compliant coatings to an equivalent or greater level that would be achieved by the provisions in paragraph (c)(1). The required efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by the following equation:

$$C.E. = \left[1 - \left\{ \frac{(VOC_{LWc})}{(VOC_{LWn,Max})} \times \frac{1 - (VOC_{LWn,Max}/D_{n,Max})}{1 - (VOC_{LWc}/D_c)} \right\} \right] \times 100$$

Where:

C.E.	=	Control Efficiency, percent
VOC_{LWc}	=	VOC Limit of Rule 1126, less water and less exempt compounds, pursuant to subdivision (c).
$VOC_{LWn,Max}$	=	Maximum VOC content of non-compliant coating used in conjunction with a control device, less water and less exempt compounds.
$D_{n,Max}$	=	Density of solvent, reducer, or thinner contained in the non-compliant coating, containing the maximum VOC content of the multicomponent coating.
D_c	=	Density of corresponding solvent, reducer, or thinner used in the compliant coating system = 880g/L.

(3) Solvent Cleaning Operations; Storage and Disposal of VOC-Containing Materials

All solvent cleaning operations and the storage and disposal of VOC-containing materials used in solvent cleaning operations shall be carried out pursuant to Rule 1171 - Solvent Cleaning Operations.

(4) Recordkeeping

Records shall be maintained pursuant to Rule 109.

(d) Test Methods

(1) Determination of VOC Content

The VOC content of coatings subject to the provisions of this rule shall be determined by using:

(A) United States Environmental Protection Agency (USEPA) Reference Method 24, (Code of Federal Regulations Title 40, Part 60, Appendix A). The exempt compound content shall be determined by SCAQMD Test Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Test Method 304 [Determination of Volatile Organic Compounds (VOC) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with paragraph (c)(1) only when manufacturers specify which individual compounds are used in the coating formulation. In addition, the manufacturers shall identify the USEPA, California Air Resources Board, and the

SCAQMD approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Efficiency of Emission Control System

(A) The efficiency of the collection device of the emission control system as specified in paragraph (c)(2) shall be determined by the USEPA method cited in 55 Federal Register 26865 (June 29, 1990), or any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD.

(B) The efficiency of the control device of the emission control system as specified in paragraph (c)(2) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. USEPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(3) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(4) All test methods referenced in this section shall be the most recently approved version.

(e) Exemptions

(1) The provisions of paragraphs (c)(1), (c)(2), and (c)(3) shall not apply to:

(A) Magnet wire coating operations which emit into the atmosphere less than 1 kg (2.2 lbs) per hour, and not more than 5 kg (11 lbs) per day of volatile organic compounds.

(B) Coating of electrical machinery and equipment sub-assemblies, such as motor housings.

(2) The provisions of this rule shall not apply to aerosol coating products.

RULE 1127. EMISSION REDUCTIONS FROM LIVESTOCK WASTE

(a) Purpose

The purpose of this rule is to reduce ammonia, VOC, and PM10 emissions from livestock waste.

(b) Applicability

This rule applies to dairy farms and related operations such as heifer and calf farms and the manure produced on them. It also applies to manure processing operations, such as composting operations and anaerobic digesters.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) ALTERNATIVE MANURE COMPOSTING OPERATION means an in-vessel composting operation that does not meet the requirements of subdivision (d) of Rule 1133.2 and that composts either livestock manure only, or manure and green material amendments only. Biosolids and food waste cannot be used as feedstocks.

(2) ANAEROBIC DIGESTER is a tank or vessel system that excludes oxygen and in which a sludge or liquid effluent is modified by the action of anaerobic bacteria. The remaining solids from the process can be used as a soil amendment or further composted or otherwise processed.

(3) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, which is directly related to raising cows or producing milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are included in this definition of dairy farms.

(4) ENGINEERED WASTE MANAGEMENT PLAN is a plan for a wastewater management system that is designed, constructed, operated and maintained to comply with the wastewater containment requirements of the Santa Ana Regional Water Quality Control Board.

(5) EXISTING DAIRY OPERATION is a dairy farm being operated as of (the date of rule adoption).

(6) GREEN MATERIAL means any plant material that is separated at the point of generation and contains no greater than 1.0 percent of physical

contaminants by weight, and meets the requirements of the California Code of Regulations – Title 14, section 17868.5. Green materials includes, but is not limited to, yard trimmings, untreated wood wastes, natural fiber products, and construction and demolition wood waste. Green material does not include food material, biosolids, mixed solid waste, material processes from commingled collection, wood containing lead-based paint or wood preservative, mixed construction or mixed demolition debris.

(6) MANURE PROCESSING OPERATION is an operation that receives manure from livestock operations and processes it for use. Such processing includes, but is not limited to, composting operations producing fertilizer and/or soil amendments, and anaerobic digesters.

(7) OPERATOR is any person, people, or entity that owns or operates a dairy farm or manure processing operation subject to the requirements of this rule.

(d) Best Management Practices

On or after December 1, 2004, a dairy operator shall:

(1) Use one of the following procedures when removing manure from a corral:

(A) Scrape or harrow before 9 am only unless the moisture content of the manure is greater than 20% throughout the corral, as determined by an moisture meter in accordance with paragraph (h)(1); OR

(B) Clear corrals such that an even surface of compacted manure remains on top of the soil and do not scrape down to soil level; OR

(C) Water corral before manure removal to reduce dust through increased surface moisture. This measure is not required for lactating cows.

(2) Minimize excess water in corrals by:

(A) identifying and eliminating water leaks from trough and trough piping; and

(B) complying with corral drainage standards specified in the dairy's Engineered Waste Management Plan.

(3) Pave feedlanes, where present, at least 8 feet on the corral side of the feedlane fence.

(4) Effective January 1, 2005, a dairy operator shall clear any accumulated manure in excess of 3 inches in height in each corral at least 4 times per year with at least 60 days between clearings. The operator of a dairy farm shall keep a record of each clearing.

(5) Effective January 1, 2005, a dairy operator shall remove all on-dairy stockpiles within three months of the last corral clearing day and no more than three months after date that the previous stockpiles were last completely cleared. The operator of the dairy farm shall keep a record of each removal, including date(s) of removal, hauler (if applicable), and manure destination.

(e) Manure Disposal Requirements

(1) Effective January 1, 2006, a dairy operator disposing of manure within jurisdiction of the South Coast Air Quality Management District shall only remove or contract to remove manure from their dairy to:

(A) A manure processing operation that has been approved in accordance with the requirements of subdivision (f); OR

(B) Agricultural land within the South Coast Air Quality Management District approved by local ordinance and/or regional water quality board for the spreading of manure; OR

(C) A combination of destinations in paragraphs (A) and (B).

(f) Rule 1127 Manure Processing Operation (1127 MPO) Approval Requirements

(1) A manure processing operator shall only process manure by one or a combination of the following methods:

(A) An anaerobic digester permitted by the District.

(B) A composting operation registered according to the requirements of Rule 1133 and operating in compliance with Rule 1133.2 subdivision (d).

(C) Alternative manure composting operations registered according to the requirements of Rule 1133 and operating in compliance with the requirements of paragraphs (f)(3) and (f)(4).

(2) Application Submittal and Approval Process

(A) Any person who operates a manure processing operation shall submit an application including the following information:

(i) The name and location address of the operation;

(ii) The name(s), mailing address(es), and phone number(s) of the person(s) responsible for process operations and submittal of the application;

(iii) Registration status, if applicable, in accordance with Rule 1133 requirements;

(iv) A list of AQMD permits and permit status, if applicable;

(v) For alternative manure composting operations, a manure composting compliance plan prepared in accordance with paragraph (f)(3).

(B) After the receipt of a complete application submitted pursuant to subparagraph (f)(2)(A), the Executive Officer will either approve or disapprove the application, in writing, in accordance with paragraph (f)(1).

(C) If the application submitted pursuant to subparagraph (f)(2)(A) is disapproved by the Executive officer:

(i) The reasons for disapproval shall be given to the applicant in writing.

(ii) The applicant may resubmit a compliant application at any time after receiving a disapproval notification.

(D) An approved application shall be valid for a period of three years from the date of approval and may be renewed.

(i) Applications for renewal must be submitted at least 60 days prior to the expiration date.

(ii) If all elements in the currently approved application are the same, the re-submittal may contain the information in clauses (f)(2)(A)(i) and (f)(2)(A)(ii) and a statement of no-change to the previous approved application information concerning clauses (f)(2)(A)(iii), (f)(2)(A)(iv), and (f)(2)(A)(v). Otherwise, the re-submittal must contain all the items specified in subparagraph (f)(2)(A).

(E) An approved application may be modified prior to its expiration provided an amendment request is received and approved by the Executive Officer prior to its implementation.

(3) Alternative Manure Composting Operation Plan Requirements

The operator of an alternative manure composting operation shall submit an alternative manure composting operation plan (plan), as required

pursuant to clause (f)(2)(A)(v). The plan must contain the following required elements:

(A) Compost technology specifications in accordance with following:

(i) Identify the compost technology and manufacturer. Only in-vessel systems are allowed for the purposes of subparagraph (f)(1)(C).

(ii) Describe the aeration system, including blower specifications and aeration cycle.

(iii) Describe any openings in the in-vessel system, including doors, vent holes, gas permeable membranes, etc. Describe expected frequency and duration of venting through doors, vents, or other openings.

(iv) The operator shall operate in-vessel systems in compliance with conditions specified in the approved plan.

(B) Feedstock specifications and preparation in accordance with the following:

(i) Identify feedstock and projected annual throughput. Only livestock manure and green material amendments are allowed for the purposes of subparagraph (f)(1)(C). No other amendments or feedstocks are allowed.

(ii) Composting of incoming manure feedstock must begin within 2 working days of arrival on-site.

(C) Compost cycle specifications in accordance with the following:

(i) Describe length of time for in-vessel composting. Composting within the in-vessel system must occur at least 60 days from the last introduction of feedstock into the system.

(ii) Describe length of time for final curing and storage of compost. Open final curing and storage more than 2 months after removal of compost from the in-vessel system is not allowed.

(4) Alternative Manure Composting Operation Testing Requirements

(A) The operator of an alternative manure composting operation shall perform a source test in accordance with the guidelines and source test methods in Rule 1133.2, Attachment A, no later than 2 months after the beginning of operations and each year thereafter.

(B) The operator of an alternative manure composting operation that has performed a source test as required pursuant to subparagraph (f)(4)(A) shall submit the results of the source test to the Executive Officer within 60 days of the completion of testing.

(5) A manure processing operator who fails to comply with an approved Rule 1127 MPO application, including an alternative manure composting plan, if applicable, shall be in violation of this rule.

(6) A manure processing operator who accepts manure for processing without an approved 1127 MPO application or renewal shall be in violation of this rule.

(g) Reporting and Recordkeeping Requirements

(1) No later than January 1, 2005, the operator of an existing dairy farm shall submit a Rule 1127 notification to the Executive Officer in writing. The Rule 1127 notification shall include:

(A) Dairy farm operator's name;

(B) Name of contact person, if different from operator's name;

(C) Farm name, if applicable;

(D) Farm street address;

(E) Farm mailing address, if different from the street address;

(F) Telephone number for the contact person.

(2) No later than 30 days after operations begin at a new dairy farm or at an existing farm under a new operator, the operator shall submit to the Executive Officer the information required in paragraph (g)(1).

(3) An operator shall submit an annual report to the Executive Officer in writing by January 15th of each year after January 1, 2007. The report shall include:

(A) Information required in paragraph (g)(1); and

(B) Animal population for the previous calendar year, broken out by number of adult cows, heifers, and calves;

(C) Amount of manure removed from the dairy in the preceding calendar year, broken out by the following destinations:

(i) agricultural lands within the jurisdiction of the South Coast Air Quality Management District;

(ii) manure processing operation(s) within the jurisdiction of the South Coast Air Quality Management District, reporting amount to each manure processing operation;

(iii) a location out of the jurisdiction of the South Coast Air Quality Management District.

(4) The dairy operator shall maintain copies of all manure manifests, tipping fee invoices, manure moisture test records, corral clearing records, and stockpile removal records, at the dairy farm for three years or for five years if the dairy farm is a Title V facility. These records shall be supplied to the Executive Officer upon request.

(5) The operator of an alternative manure composting operation shall maintain for three years, or five years if a Title V facility, all of the following records:

(A) Logs of feedstock arrival, including date and amount;

(B) Starting and ending date of each in-vessel compost cycle, and removal date of final compost; and

(C) Logs of aeration and venting events for each compost cycle.

(h) Test Methods

(1) The moisture content of manure shall be determined with an electrical conductivity or microwave moisture meter, or other method approved by South Coast Air Quality Management District, California Air Resources Board and U. S. Environmental Protection Agency. Moisture readings shall be taken by introducing the probe three inches into the manure. All readings shall be recorded. Moisture content samples shall be taken in such a manner as to be representative of the corral or stockpile, with a minimum of 5 readings per corral or stockpile.

(i) Fees

(1) Operators of dairies or manure processing operation shall accompany the submittals required by subdivisions (f) or (g) with applicable filing and evaluation fees pursuant to District Rule 306.

(j) Exemptions

(1) This rule shall not apply to a dairy farm with less than 50 cows, heifers, and/or calves.

(2) An approved alternative manure composting operation is exempt from Rule 1133.2 if the operation is in compliance with subdivision (f).

(3) An operator can be exempted from one of the corral clearings required by paragraph (d)(4) per calendar year, if the operator meets all of the following requirements:

(A) At 60 days after the previous corral clearing, notifies the Executive Officer that the moisture content of the corral manure is above 50%, as determined by an electrical conductivity moisture meter in accordance with paragraph (h)(1).

(B) Upon notification, tests the moisture content of the corral manure at least weekly.

(i) If the moisture content of the corral manure is less than 50%, the corral must be cleared as specified in paragraph (d)(4).

(ii) If the moisture content is greater than 50%, the operator shall record the test results and keep the records required by paragraph (g)(4).

(C) If the moisture content remains greater than 50% after 90 days since the previous corral clearing, the operator shall notify the Executive Officer that the operator is claiming an exemption from a clearing required by paragraph (d)(4).

(4) Dairies that are removing all feedlane manure to a digester, no fewer than 6 days per week, are exempt from the requirements in paragraphs (d)(4) and (d)(5).

(k) Alternative Control Options

(1) In lieu of complying with the provisions of subdivision (e), a person may comply with a plan for achieving equivalent emissions reductions through alternative control measures. To be effective, such a plan shall be approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.

7/23/96

(Adopted May 4, 1979)(Amended February 5, 1982)
(Amended December 7, 1984)(Amended May 5, 1989)(Amended March 2, 1990)
(Amended December 7, 1990)(Amended August 2, 1991)
(Amended February 7, 1992)(Amended March 8, 1996)

RULE 1128. PAPER, FABRIC, AND FILM COATING OPERATIONS

(a) Applicability

This rule applies to all persons applying coatings or wash primers to paper, fabric, or film substrates. The drying and curing processes covered under this rule include, but are not limited to, heated, forced-air dried, and non-heated processes.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic/marking applications.

(2) APPLICATION PROCESS is any process where surface coatings are applied and/or cured to paper, fabric, and/or film on a coating line. Such coating line shall include coating applicators, heating or drying ovens, any dryers, and any other equipment where VOC emissions occur.

(3) COATING means a layer of material applied on a substrate that forms a film.

(4) DIE COATER (OR SLIT COATER) is a type of application equipment that coats an object by flowing coatings through a slit directly onto the object moving past the slit.

(5) DIP COATER is a type of application equipment that coats an object by submerging the object in a vat of coating, and subsequently withdrawing the object and draining off the excess coating.

(6) ELECTROSTATIC APPLICATION is a method of applying coating whereby atomized paint droplets are charged and subsequently deposited on the substrate by electrostatic attraction.

(7) EXEMPT COMPOUNDS (See Rule 102-Definition of Terms).

(8) FABRIC COATING is any decorative or protective coating or reinforcing material applied on or impregnated into textile fabric, vinyl coated textile fabric, or vinyl sheets.

(9) FILM COATING is any coating applied in a web coating process on any film substrate other than paper or fabric, including, but not limited to typewriter ribbons, photographic film, magnetic tape, and metal foil gift wrap, but excluding coatings applied to packaging used exclusively for food and health-care products for human or animal consumption.

(10) FLOW COATER is a type of application equipment that coats an object by flowing a stream of coating over the object and draining off any excess coating.

(11) FOAM COATER is a type of application equipment that coats an object by flowing foam through holes or a slit directly onto the object moving underneath it.

(12) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS, is the weight of VOC per combined volume of VOC and coating solids, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds, in grams
W_w = weight of water, in grams
W_{es} = weight of exempt compounds, in grams
V_m = volume of material, in liters
V_w = volume of water, in liters
V_{es} = volume of exempt compounds, in liters

(13) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds, in grams
W_w = weight of water, in grams

W_{es} = weight of exempt compounds, in grams

V_m = volume of material in liters

(14) HAND APPLICATION METHOD is a method of applying a coating to a substrate using manually held, non-mechanically operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

(15) HEATING OVEN is a device into which paper, fabric or film is put in order to dry or cure the applied coating by applying heat.

(16) HIGH VOLUME LOW PRESSURE (HVLP) SPRAY is an atomized coating application system which is operated between 0.1 and 10 psig air pressure at the air cap/tip of the spray gun.

(17) PAPER COATING is any coating applied on or impregnated into paper, including, but not limited to, adhesive tapes and labels, book covers, post cards, office copier paper, drafting paper, and pressure sensitive tapes.

(18) PLASTISOL is a coating that is a liquid dispersion of small particles of resins and plastisizers that are fused to become a plastic.

(19) PLASTISIZER is a material used to keep plastic material soft and viscous.

(20) ROLL COATER is a type of application equipment in which a series of mechanical rollers form a thin coating film on the surface of a roller, which is subsequently applied to a substrate by moving the substrate underneath the roller.

(21) TRANSFER EFFICIENCY is the ratio of the weight or volume of coating solids adhering to an object to the total weight or volume, respectively, of coating solids used in the application process expressed as a percentage.

(22) VOLATILE ORGANIC COMPOUND (VOC) is any volatile chemical compound which contains the element carbon excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(23) WASH PRIMER is a material used to clean and/or to activate surfaces of paper, fabric, or film and may contain no more than five percent, by weight, solid materials.

(c) Requirements

(1) Until January 1, 1994, a person shall not use or apply any coating in any paper, fabric, or film coating application process involving the use of heating ovens unless:

(A) the coating contains less than 265 grams of VOC per liter of coating, less water, and less exempt compounds, as applied, and is applied with a minimum transfer efficiency of 95 percent; or

(B) the VOC emissions are collected and reduced to less than 120 grams per liter of coating applied.

(2) On or after January 1, 1994, a person shall not use or apply any coating in any paper, fabric or film coating application process, with or without heating ovens, unless:

(A) The coating contains less than 265 grams of VOC per liter of coating less water, and less exempt compounds, as applied; or

(B) VOC emissions are collected and reduced by an approved emission control system pursuant to subdivisions (d) and (j).

(3) A person shall not use or apply any plastisol to any paper, fabric, or film substrate unless the coating contains less than 20 grams of VOC per liter of coating, less water, and less exempt compounds, as applied.

(4) Until January 1, 1994, a person shall not use wash primer on any paper, fabric, and/or film used in any paper, fabric, and/or film coating application process involving the use of heating ovens, unless:

(A) the wash primer contains less than 265 grams of VOC per liter of material used, or

(B) the VOC emissions from the washing operations are collected and reduced to less than 120 grams per liter of washing material used.

(5) On or after January 1, 1994, a person shall not use wash primer on any paper, fabric, and/or film used in any paper, fabric, and/or film coating application process, with or without heating ovens, unless:

(A) The wash primer contains less than 265 grams of VOC per liter of material used, or

(B) VOC emissions are collected and reduced by an approved emission control system, pursuant to subdivisions (d) and (j).

(6) Application Methods

On or after January 1, 1994, no person shall apply coatings, unless these materials are applied with equipment operated according to manufacturer's specifications, and by the use of one of the following methods:

(A) Flow Coater;

(B) Roll Coater;

(C) Dip Coater;

(D) Foam Coater;

(E) Die Coater;

(F) Hand Application Methods;

(G) High-Volume Low-Pressure (HVLP) spray, only for air-dried coatings; or

(H) Such other alternative spray application methods as are demonstrated in accordance with the provisions of paragraph (f)(4), to be capable of achieving equivalent or better transfer efficiency than the application method listed in subparagraph (c)(6)(G), and for which written approval of the Executive Officer has been obtained;

(7) Containers for organic solvents and mixing tanks for coatings containing organic solvents shall be free from leaks and shall be covered except when adding or removing materials, cleaning, or when the container is empty.

(8) A person shall not:

(A) use VOC-containing materials for the cleaning of application equipment used in paper, fabric, and/or film coating operations, excluding hand wiping, unless:

(i) 85 percent of the VOCs are collected and properly disposed of in such a way that they are not emitted into the atmosphere; or

(ii) the clean-up materials contain 15 percent or less, by weight, VOC.

(B) use other than closed containers for disposal of cloth or paper used for surface preparation, clean-up, and the removal of uncured coatings, which are impregnated with solvent containing VOC.

(C) use other than closed containers for disposal of cloth or paper used in stripping cured coatings, which are impregnated with solvent containing VOC.

(9) Solvent Cleaning Operations: Storage and Disposal of VOC Containing Materials

Subparagraphs (c)(8)(A), (c)(8)(B) and hand wipe cleaning of application equipment used in paper, fabric, and/or film coating operations shall be superseded by paragraphs (c)(1), (c)(2), (c)(4), and (c)(6) of Rule 1171 - Solvent Cleaning Operations, on and after July 1, 1992.

(d) Approved Emission Control System

A person may comply with the provisions of paragraph (c)(2), (c)(5) or (c)(6) by using an emission control system for reducing VOC emissions consisting of collection and control devices, which are approved, in writing, by the Executive Officer and installed in accordance with the Compliance Schedule of subdivision (j) and operated subject to the following provisions:

(1) The emission collection system shall collect at least 90 percent, by weight, of the emissions generated by the source of emissions.

(2) The control device shall reduce emissions from an emission collection system by at least 95 percent, by weight, or the output of the control device is 50 ppm, by volume, calculated as carbon, with no dilution.

(e) Recordkeeping Requirements

Records shall be maintained pursuant to Rule 109.

(f) Compliance Test Methods

For the purpose of this rule, the following test methods shall be used.

(1) The VOC content of materials subject to the provisions of this rule shall be determined by:

(A) The United States Environmental Protection Agency (USEPA) Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A). The exempt compound's content shall be determined by the South Coast Air Quality Management District's (SCAQMD) Laboratory Methods of Analysis for Enforcement Samples - Section III, Methods 19 and 22; or

(B) SCAQMD's Laboratory Methods of Analysis for Enforcement Samples - Section III, Methods 16, 17, 19, 22, and 24.

VOC emissions determined to exceed any limits established by this rule through the use of the above-referenced sets of test methods shall consititute a violation of the rule.

(2) The capture efficiency of the emissions collection system shall be determined by the USEPA method cited in 55 FR (Federal Register) 26865, June 29, 1990.

(3) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by USEPA's Test Method 18, or Air Resources Board (ARB) Method 422 for the determination of emissions of Exempt Compounds and USEPA's Test Methods 25, 25A, or SCAQMD's Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) for the determination of total organic compound emissions. Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of the rule.

(4) The transfer efficiency of alternative coating application methods shall be determined in accordance with SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989."

The following classes of compounds: cyclic branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-contained perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision (c), only at such time as manufacturers specify which individual compounds are used in the coating formulations and identify the test methods, which, prior to such analysis, have been approved by the USEPA and the SCAQMD, that can be used to quantify the amounts of each exempt compound.

(g) Rule 442 Applicability

Any coating, coating operation, or facility which is exempt from all or a portion of this rule, shall comply with the provisions of Rule 442.

(h) Alternative Emission Control Plan

An owner/operator may comply with subparagraph (c)(1)(A) or (c)(2)(A) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(i) Exemptions

(1) Until January 1, 1994, the provisions of subdivision (c) shall not apply to any coating application facility which applies less than two gallons of coatings per day.

(2) The provisions of this rule shall not apply to aerosol coating products.

(3) The provisions of subparagraph (c)(6) shall not apply to the application of materials that contain less than 20 g/L of VOC per liter of material.

(4) The provisions of subdivision (c) shall not apply to laboratories which apply less than two (2) gallons per day of coatings to test specimens for purposes of testing for production-related operations, research, development, and quality control.

(5) The provisions of this rule shall not apply to the application of coatings to fine arts paintings, or to scenic or theatrical backgrounds for motion pictures, television, and theater.

(6) The provisions of subdivision (c) shall not apply to laboratories located at facilities that manufacture reinforced plastic, structural materials, which apply no more than three (3) gallons per day of coatings to test specimens for either testing production-related operations, research, development, or quality control.

(j) Compliance Schedule

Persons complying with the provisions of subdivision (d) shall comply with the following increments of progress to achieve compliance:

(1) By July 1, 1992, submit required applications for permits to construct and operate, to achieve compliance with paragraphs (c)(2), (c)(5), or (c)(6).

(2) By January 1, 1994, demonstrate compliance with paragraphs (c)(2), (c)(5), or (c)(6).

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted October 3, 1980)(Amended February 1, 1985)(Amended May 5, 1989)
(Amended February 2, 1990)(Amended March 2, 1990)(Amended April 6, 1990)
(Amended June 1, 1990)(Amended November 2, 1990)(Amended December 7, 1990)
(Amended August 2, 1991)(Amended March 6, 1992)(Amended July 9, 1993)
(Amended September 8, 1995)(Amended March 8, 1996)(Amended October 8, 1999)
(Amended May 2, 2014)

RULE 1130. GRAPHIC ARTS

(a) Purpose and Applicability

The purpose of this rule is to reduce Volatile Organic Compound (VOC) emissions from graphic arts operations. This rule applies to any person performing graphic arts operations or who supplies, sells, offers for sale, markets, manufactures, blends, repackages, stores at a worksite, distributes, applies or solicits the application of graphic arts materials for use in the District.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground marking and traffic marking applications.

(2) ALCOHOL is an organic compound that contains a hydroxyl (OH) group and is used in the fountain solution to reduce the surface tension and increase the viscosity of water to prevent piling (ink build-up). For purposes of this rule, alcohol includes, but is not limited to, isopropyl alcohol (isopropanol), n-propanol and ethanol.

(3) ALCOHOL SUBSTITUTE is an additive that contains VOCs but no alcohol and is used in the fountain solution to reduce the surface tension and increase the viscosity of water to prevent piling (ink build-up).

(4) COATING is a material which is applied to a surface in order to beautify, protect or provide a barrier to such surface in a relatively unbroken film.

(5) CAPTURE EFFICIENCY, in percent, is the ratio of the weight of the VOC in the effluent stream entering the control device to the weight of VOC emitted from graphic arts operations, both measured simultaneously, and can be calculated by the following equation:

$$\text{Capture Efficiency} = [W_c/W_e] \times 100$$

Where: W_c = weight of VOC entering control device

W_e = weight of VOC emitted

(6) CONTROL DEVICE EFFICIENCY, in percent, is the ratio of the weight of the VOC removed by the control device from the effluent stream entering the control device to the weight of the VOC in the effluent stream entering the control device, both measured simultaneously, and can be calculated by the following equation:

Control Device Efficiency = $[(W_c - W_a)/W_c] \times 100$

Where: W_c = Weight of VOC entering control device

W_a = Weight of VOC discharged from the control device

(7) END-USER is a person who performs graphic arts operations.

(8) ENERGY CURABLE COATINGS, INKS AND ADHESIVES are single-component reactive products that cure upon exposure to visible-light, ultra-violet light or to an electron beam. The VOC content of thin film Energy Curable Coatings, Inks And Adhesives may be determined by manufacturers using ASTM Test Method 7767-11 "Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them."

(9) EXEMPT COMPOUNDS (See Rule 102-Definition of Terms).

(10) FACILITY is any permit unit or grouping of permit units or other air-contaminant-emitting activities which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control). Such above-described groupings, if non-contiguous, but connected only by land carrying a pipeline, shall not be considered one facility.

(11) FLEXOGRAPHIC PRINTING is a printing method utilizing a flexible rubber or other elastomeric plate in which the image area is raised relative to the non-image area.

(12) FLUORESCENT INK is a printing ink that emits electromagnetic radiation as a result of the absorption of energy from radiation.

(13) FOUNTAIN SOLUTION is the solution used in offset lithographic printing which is applied to the image plate to maintain the hydrophilic properties of the non-image areas. It is primarily water and contains at least one of the following materials: etchants such as mineral salts; hydrophilic gums; or VOC additives to reduce the surface tension of the solution.

(14) GRAMS OF VOC PER LITER OF COATING (OR INK OR ADHESIVE), LESS WATER AND LESS EXEMPT COMPOUNDS, is the weight of VOC per combined volume of VOC and coating (or ink or adhesive) solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating (or Ink or Adhesive), Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds in grams

W_w = weight of water in grams

W_{es} = weight of exempt compounds in grams

V_m = volume of material in liters

V_w = volume of water in liters

V_{es} = volume of exempt compounds in liters

For coatings that contain reactive diluents, the grams of VOC per Liter of Coating (or ink or adhesive), Less Water and Less Exempt Compounds, shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating (or Ink or Adhesive), Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds evolved during curing and analysis in grams

W_w = weight of water evolved during curing and analysis in grams

W_{es} = weight of exempt compounds evolved during curing and analysis in grams

V_m = volume of material prior to reaction in liters

V_w = volume of water evolved during curing and analysis in liters

V_{es} = volume of exempt compounds evolved during curing and analysis in liters

(15) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds in grams

W_w = weight of water in grams

W_{es} = weight of exempt compounds in grams

V_m = volume of material in liters

(16) GRAPHIC ARTS OPERATIONS are gravure, letterpress, flexographic, and offset lithographic printing processes or related coating or laminating processes.

(17) GRAPHIC ARTS MATERIALS are any inks, coatings, or adhesives, including added thinners or retarders, used in printing or related coating or laminating processes.

(18) GRAVURE PRINTING is an intaglio printing process in which the ink is carried in minute etched or engraved wells on a roll or cylinder, excess ink being removed from the surface by a doctor blade.

(19) HEATSET INK is an offset lithographic printing ink used on continuous web-fed printing presses that are equipped with hot air high velocity dryers. The ink dries or sets by heat induced evaporation of the ink oils and subsequent chilling of the ink by chill rolls.

(20) LAMINATION is a process of composing two or more layers of material to form a single, multiple-layer sheet by using an adhesive.

(21) LETTERPRESS PRINTING is a printing process in which the image area is raised relative to the non-image area and the ink is transferred to the substrate directly from the image surface.

(22) MATTE FINISH INK is a flexographic printing ink which is used on non-porous substrates in flexographic printing operations and contains at least five (5) percent by weight silicon dioxide flattening agent.

(23) METALLIC INK is a flexographic printing ink which is used on non-porous substrates in flexographic printing operations and contains at least 28 percent by weight elemental metal particles.

(24) NON-HEATSET INK is an offset lithographic printing ink that sets and dries by absorption into the substrate, and hardens by ambient air oxidation that may be accelerated by the use of infrared light sources. For the purposes of this definition energy curable inks are examples of non-heatset inks.

(25) NON-POROUS SUBSTRATE is a substrate whose surface prevents penetration by water, including but not limited to foil, polyethylene, polypropylene, cellophane, paper or paperboard coated with a non-porous material, metalized polyester, nylon, and mylar.

(26) OFFSET LITHOGRAPHIC PRINTING is a planographic printing process in which the image and non-image areas are on the same plane of a thin lithographic plate and are chemically differentiated. The ink film is transferred from the lithographic plate to an intermediary surface, a rubber covered cylinder called a blanket, which, in turn, transfers the ink to the substrate. This printing process differs from other printing processes where the image is typically printed from a raised or recessed surface.

(27) OVERALL CONTROL EFFICIENCY (C.E.), in percent, is the ratio of the weight of the VOC removed by the emission control system from the effluent stream entering the control device to the total VOC emitted from graphic arts operations, both measured simultaneously, and can be calculated by the following equations:

$$C.E. = [(W_c - W_a)/W_e] \times 100$$

$$C.E. = [(\text{Capture Efficiency}) \times (\text{Control Device Efficiency})/100]$$

Where: W_c = Weight of VOC entering control device

W_a = Weight of VOC discharged from the control device

W_e = Weight of VOC emitted

(28) PACKAGING GRAVURE is gravure printing on paper, paperboard, foil, film or other substrates used to produce containers or packages.

(29) POROUS SUBSTRATE is a substrate whose surface does not prevent the penetration by water, including but not limited to paper, paperboard, and any paper product that is coated with a porous material.

(30) POTENTIAL TO EMIT is the maximum capacity of a stationary source to emit a regulated air pollutant based on its physical or operational design. Any physical or operational limitation on the capacity of the stationary

source to emit a pollutant, including air pollution control equipment and restrictions on hours of operations or on the type of material combusted, stored, or processed, shall be treated as part of the design only if the limitation is federally enforceable.

(31) PRINTING in the graphic arts is any operation that imparts color, design, alphabet, or numerals on a substrate.

(32) PRINTING INK is a pigmented fluid or viscous material used in printing.

(33) PROOF PRESS is a press used only to check the quality of print, color reproduction, and editorial content.

(34) PUBLICATION GRAVURE is gravure printing on paper subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements or other types of printed materials not classified as packaging gravure.

(35) REACTIVE DILUENT is a liquid which is a VOC during application and one in which, through chemical reaction or physical actions, such as adsorption or retention in the substrate, 20 percent or more of the VOC becomes an integral part of a finished product.

(36) REFRIGERATED CHILLER is a device that continuously maintains and supplies fountain solution to a holding tray at a temperature of 55 degrees Fahrenheit or less measured at the supply tank, thereby reducing evaporative emissions of VOCs in fountain solutions.

(37) SOLVENT CLEANING is as defined in Rule 1171 – Solvent Cleaning Operations.

(38) STERILIZATION INDICATING INKS are inks that change color to indicate that sterilization has occurred. Such inks are used to monitor the sterilization of medical instruments, autoclave efficiency, and the thermal processing of foods for prevention of spoilage.

(39) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102 – Definition of Terms.

(40) WEB-FED is an automatic system which supplies substrate from a continuous roll, or from an extrusion process.

(c) Requirements

(1) VOC Content of Graphic Arts Materials

No person shall supply, sell, offer for sale, market, manufacture, blend, package, repackage, distribute, apply or solicit the application of any

graphic arts material, including any VOC-containing materials added to the original graphic arts materials, for use in the District, which contains VOC in excess of the VOC content limits set-forth in the Table of Standards I below:

TABLE OF STANDARDS I

VOC CONTENT LIMITS Grams of VOC Per Liter of Coating, Ink, and Adhesive, Less Water And Less Exempt Compounds	
GRAPHIC ART MATERIAL	Current Limit (g/L)
Adhesive	150
Coating	300
Flexographic Fluorescent Ink	300
Flexographic Ink: Non-Porous Substrate	300
Flexographic Ink: Porous Substrate	225
Gravure Ink	300
Letterpress Ink	300
Offset Lithographic Ink	300

(2) VOC Content of Fountain Solution

(A) No person shall apply any fountain solution, including any VOC-containing materials added to the original fountain solution for use in a graphic arts operation within the District unless the VOC content in the fountain solution, as applied, complies with the applicable VOC limits set-forth in the Table of Standards II below.

TABLE OF STANDARDS II

VOC CONTENT LIMITS Grams of VOC Per Liter of Material		
FOUNTAIN SOLUTION	1/1/2000 g/L	7/1/2014 g/L
Heatset Web-Fed		
Using Alcohol without Refrigerated Chiller	80	16
Using Alcohol with Refrigerated Chiller	100	30
Using Alcohol Substitute	80	50
Sheet-Fed		
Using Alcohol without Refrigerated Chiller	80	50
Using Alcohol with Refrigerated Chiller	100	85
Using Alcohol Substitute	80	50
Non-Heatset Web-Fed		
Using Alcohol Substitute without Refrigerated Chiller	80	50
Using Alcohol Substitute with Refrigerated Chiller		

(B) The use of alcohol containing fountain solutions is prohibited for use in non-heatset web-fed operations.

(3) Solvent Cleaning Operations; Storage and Disposal of VOC-containing Materials

Solvent cleaning operations and the storage and disposal of VOC-containing materials used in cleaning operations are subject to the provisions of Rule 1171 - Solvent Cleaning Operations.

(4) Prohibition of Storage

Effective July 1, 2014, a person shall not store any graphic arts material at a worksite for use in the District which contains VOC in the excess of the VOC-content limits specified in paragraph (c)(1).

(5) Approved Emission Control System

A person may comply with the provisions of paragraph (c)(1) or (c)(2) by using an emission control system to reduce VOC emissions provided such system is first approved in writing by the Executive Officer and meets the following requirements:

(A) The control device reduces VOC emissions from an emissions collection system by at least 95 percent, by weight, or the output of the air pollution control device is no more than 50 PPM by volume calculated as carbon with no dilution; and

(B) The owner/operator demonstrates that the emission collection system collects at least 90 percent, by weight, of the VOC emissions generated by the sources of emissions.

(6) Alternative Emission Control Plan

A person may comply with the provisions of paragraphs (c)(1) or (c)(2) by means of an approved Alternative Emission Control Plan pursuant to Rule 108 - Alternative Emission Control Plans.

(d) Prohibition of Specification and Sale

(1) No person shall solicit from, or require any other person to use in the District any graphic arts material which, when applied as supplied or thinned or reduced according to the manufacturer's recommendation for application, does not meet the applicable VOC limits in paragraph (c)(1) or subparagraph (i)(4)(C) for the specific application.

(2) No person shall supply, offer for sale, sell, market, blend, package, repackage, manufacture or distribute, to an end-user any graphic arts material for use in the District which, when applied as supplied or thinned or reduced according to the manufacturer's recommendation for application, does not meet the applicable VOC limits in paragraph (c)(1) or subparagraph (i)(4)(C) for the specific application.

(3) The prohibition of sales and use as specified in paragraphs (d)(1) and (d)(2) shall not apply to any manufacturer of graphic arts materials, provided that the manufacturer has complied with the labeling requirements of Rule 443.1 – Labeling of Materials Containing Organic Solvents, and the product is not sold directly to a user located in the District, or the product was sold to an independent distributor or a sales outlet located in the District that is not a subsidiary of, or under the control of the manufacturer, and was informed in writing by the manufacturer about the compliance status of the product with Rule 1130.

(e) Recordkeeping and Reporting Requirements

Records shall be maintained pursuant to Rule 109. For emissions reporting purposes, the following substrate retention factors shall be applied to the lithographic oil content of the inks: 20 percent retention for heatset inks and 95 percent retention for non-heatset inks.

(f) Rule 442 Applicability

Any graphic arts operations exempted from all or a portion of the VOC limits of this rule shall comply with the provisions of Rule 442 – Usage of Solvents.

(g) Emission Reduction Credits

Facilities that use matte finish and metallic inks shall not receive emission reduction credit(s) pursuant to SCAQMD Rule 1309 above those emission reduction credit(s) that the facility would have received if it was operated with coatings having a VOC content of no more than 300 grams per liter, less water and less exempt compounds irrespective of the VOC limits specified in paragraph (i)(4)(C).

(h) Test Methods

(1) VOC Content of Graphic Arts Materials

The VOC content of graphic arts materials except publication rotogravure inks shall be determined by:

(A) United States Environmental Protection Agency (U.S. EPA) Reference Test Method 24, (Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations, Title 40, Part 60, Appendix A). The exempt compounds' content shall be determined by South Coast Air Quality Management's (SCAQMD) Laboratory Test Method 302 (Distillation of Solvents from Paints, Coatings and Inks) and 303 (Determination of Exempt Compounds) contained in SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual; or

(B) SCAQMD Test Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(2) VOC Content and Density of Publication Rotogravure Ink:

The VOC content and density of publication rotogravure inks shall be determined by:

(A) U.S. EPA Reference Test Method 24A, (Determination of Volatile Matter Content and Density of Publication Rotogravure Inks and Related Publication Rotogravure Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A). The exempt compounds' content shall be determined by SCAQMD's Laboratory Test Method 303 (Determination of Exempt Compounds) contained in SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual; or

(B) SCAQMD Test Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(3) Exempt Perfluorocarbon Compounds

The following classes of compounds:

Cyclic, branched, or linear, completely fluorinated alkanes;

Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

Sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with subdivision (c) and subparagraph (i)(4)(C), only when manufacturers specify which individual compounds are used in the ink and coating formulations. In addition, the manufacturers must identify U.S. EPA, CARB, and SCAQMD approved test methods, which can be used to quantify the amount of each exempt compound.

(4) Determination of Efficiency of Emission Control Systems

(A) The capture efficiency of an emission control system as specified in paragraph (b)(5) shall be determined by the procedures presented in U.S. EPA technical guideline document, "Guidelines for Determining Capture Efficiency, January 9, 1995". Notwithstanding the test methods specified by the Guidelines, any

other method approved by the U.S. EPA, CARB and the SCAQMD Executive Officer may be substituted.

(B) The efficiency of the control device of the emission control system as specified in paragraph (b)(6) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by U.S. EPA Test Methods 25, 25A, SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) or SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources) as applicable. U.S. EPA Test Method 18, or CARB Method 422 shall be used to determine emissions of exempt compounds.

(5) Equivalent Test Methods

Other test methods determined to be equivalent by the Executive Officer, CARB, and the U.S. EPA, and approved in writing by the District Executive Officer may also be used.

(6) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(7) Test Methods Dates

All test methods referenced in this subdivision shall be the most recently approved version by the appropriate governmental entities.

(i) Exemptions

(1) The provisions of this rule shall not apply to:

(A) Fountain solutions used on proof presses.

(B) Coating operations subject to other rules of Regulation XI.

(C) Solar-control window film.

(D) Heat-applied transfer decals.

(E) Graphic arts on ceramic materials.

(F) Circuitry printing.

(G) Blanket repair material used in containers of four ounces or less.

(H) Sterilization indicating inks.

(I) Aerosol coating products.

(J) Graphic arts materials that have a VOC content of no more than 10 g/L or its equivalent, less water and less exempt compounds, as applied.

(2) The prohibition specified in paragraphs (d)(1) or (d)(2) shall not apply to persons offering graphic arts materials for sale to, selling graphic arts materials to, distributing graphic arts materials to, or requiring the use of graphic arts materials from, persons who are operating an approved emission control system under paragraph (c)(5), or complying under paragraph (c)(6), or operating pursuant to paragraphs (i)(1), (i)(4), (i)(5) or (i)(6).

(3) The prohibition specified in subdivision (d) shall not apply to graphic arts materials which will be used solely outside of the District.

(4) The provisions of paragraph (c)(1) shall not apply to metallic and matte finish inks provided that:

(A) The usage of matte finish or metallic inks each as supplied shall not exceed two (2) gallons on any one day and 125 gallons per calendar year at a facility; and

(B) The potential to emit and the actual VOC emissions from a facility which applies matte finish or metallic inks does not exceed ten (10) tons per calendar year from all VOC emission sources; and

(C) The VOC content of matte finish and metallic inks do not exceed 535 and 460 grams per liter (less water and less exempt compounds) respectively, including any VOC containing materials added to the original ink, as applied; and

(D) The owner or operator of the facility certifies in writing to the Executive Officer that they shall not emit VOCs in excess of ten (10) tons per calendar year. Such a certification shall be considered an agreement by the facility to limit the facility's potential to emit.

(5) Facilities operating under the provisions of paragraph (i)(4) whose actual emissions exceed ten (10) tons in any calendar year shall:

(A) henceforth be subject to the requirements of paragraph (c)(1).

(B) In addition to the requirements of subdivision (e), facilities shall retain records of purchase orders and invoices of VOC-containing materials for a minimum of five (5) years.

(6) The provision of paragraph (c)(4) shall not apply to a worksite that stores graphic arts materials provided such graphic arts materials are vented exclusively to printing systems equipped with an approved emission control system pursuant to the requirements of paragraph (c)(5).

(7) The provisions of paragraph (c)(1) shall not apply to postal cancellation inks provided the VOC emissions from these inks, at a facility, do not exceed 60 pounds per calendar month.

(8) The provisions of paragraph (c)(2) shall not apply to sheet-fed offset presses that have a sheet size no larger than 11 inches by 17 inches, or any offset press if the total solution reservoir capacity is one gallon or less, provided the VOC content of the fountain solution used contains no more than 80 grams per liter of material, as applied, or if using a refrigerated chiller, no more than 100 grams per liter of material, as applied.

3/3/97

(Adopted August 2, 1991)(Amended July 9, 1993)
(Amended December 13, 1996)

RULE 1130.1. SCREEN PRINTING OPERATIONS

(a) Purpose and Applicability

The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) from screen printing operations. This rule applies to persons performing screen printing operations or who sell, distribute, or require the use of screen printing materials in the District.

(b) Definitions

For purposes of this rule, the following definitions shall apply:

(1) ADDITIVES are compounds added to screen printing materials to improve flow or workability or to obtain a desired characteristic or property. The term "additives" excludes thinners.

(2) ADHESIVE is any substance that is used to bond one surface to another surface.

(3) CAPTURE EFFICIENCY, in percent, is the ratio of the weight of the VOC in the screen printing operation effluent stream entering the control device to the weight of VOC emitted from screen printing operations, both measured simultaneously, and shall be calculated by the following equation:

$$\text{Capture Efficiency} = \left(\frac{W_c}{W_e}\right) \times 100$$

Where: W_c = weight of VOC in screen printing operation effluent stream entering control device

W_e = weight of VOC emitted

(4) CERAMIC DECALS are water-slide decals which are used to transfer images onto ceramic materials by firing above 800°F.

(5) CERAMIC DECAL INK is any ink which is screen printed onto treated paper stock and is used in the production of ceramic decals.

(6) CHLORINE INDICATOR is a product which is screen printed with an ink that changes color to indicate chlorine concentrations in the range of 0 - 11 parts per million (ppm).

(7) CLEAR INK is a colorless ink that is screen printed on decal paper and either serves as the base film on which opaque inks are screen printed, or as a protective film over opaque inks, and is used in the production of water-slide decals.

(8) COATING is a layer of material applied to a substrate in a substantially unbroken film.

(9) COLD BENDING is a process which subjects the printed color, design, alphabet, symbol, or numeral on a printed object to permanent bending through the application of force.

(10) CONDUCTIVE INKS are screen printing inks which transmit electricity and are used in the production of electronic circuits.

(11) CONTAINERS are plastic products manufactured for storing materials. Containers include, but are not limited to, bottles, buckets, and jars.

(12) CONTROL DEVICE EFFICIENCY, in percent, is the ratio of the weight of the VOC removed by the control device from the screen printing operation effluent stream entering the control device to the weight of the VOC in the screen printing operation effluent stream entering the control device, both measured simultaneously, and shall be calculated by the following equation:

$$\text{Control Device Efficiency} = \left(\frac{W_c - W_a}{W_c}\right) \times 100$$

Where: W_c = weight of VOC in screen printing operation effluent stream entering control device

W_a = weight of VOC discharged from the control device

(13) DEGREE is a unit for measuring temperature or an angle.

(14) ELECTRONIC CIRCUIT is a product which consists of a substrate and a circuitry created by screen printing a conductive ink on the substrate.

(15) EMBOSSING is a process which subjects the printed color, design, alphabet, symbol, or numeral on a printed object to a mechanical force which results in permanently raising the level of the impacted area.

(16) EXEMPT COMPOUNDS (See Rule 102-Definition of Terms).

(17) EXTREME PERFORMANCE SCREEN PRINTING MATERIALS are screen printing inks and coatings which qualify for extreme performance classification under the provisions of subdivision (e).

(18) FINE DETAIL LOOSELEAF BINDER INK is a printing ink used in the manufacturing of loose-leaf binders to print graphics which are lighter in color than the background on which they are printed and which have a width of 1/24th of an inch or smaller.

(19) FLUORESCENT INK is a printing ink which glows brighter than conventional ink when exposed to light due to pigments which have the property of emitting radiation in the visible range as a result of absorption of radiation in the ultraviolet range from some other source.

(20) GRAMS OF VOC PER LITER OF COATING (OR INK OR ADHESIVE), LESS WATER AND LESS EXEMPT COMPOUNDS, is the weight of VOC per combined volume of VOC and coating (or ink or adhesive) solids, and which is calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating (or Ink or Adhesive), Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds, in grams
W_w = weight of water, in grams
W_{es} = weight of exempt compounds, in grams
V_m = volume of material, in liters
V_w = volume of water, in liters
V_{es} = volume of exempt compounds, in liters

(21) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material (ink, coating or adhesive) which is calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds, in grams
W_w = weight of water, in grams
W_{es} = weight of exempt compounds, in grams
V_m = volume of material, in liters

(22) HEAT-BENDING is a process which subjects the printed color, design, alphabet, symbol, or numeral on a printed object to permanent bending through the application of heat and force.

(23) HIGH-VOC SERIGRAPH INKS are screen printing materials used in making serigraphs and which contain, on an as applied basis, VOC in excess of 400 grams per liter (3.3 pounds per gallon), less water and exempt compounds.

(24) INFLATING is a process of filling a printed object with air or gas which results in the swelling of the printed area of the object.

(25) LOOSE-LEAF BINDER METALLIC INK is a metallic ink as defined in paragraph (b)(29) which is used on loose-leaf binders and is not silver or golden in color.

(26) MAN-MADE FIBERS are threadlike materials produced from the spinning of synthetic organic polymers or cellulose-based organic polymers and which are used in the manufacture of man-made textiles. Man-made fibers include, but are not limited to, rayon, acetate, triacetate, nylon, and polyester and exclude fiberglass.

(27) MAN-MADE TEXTILES are woven or knitted fabrics made of one hundred percent (100%) man-made fibers, or natural fibers which are coated with plastic materials.

(28) MECHANICALLY-FORMED PRODUCTS are screen-printed products made of plastic substrates which are subjected to vacuum-forming, embossing, inflating, heat-bending, or cold bending processes after the screen printing operation.

(29) METALLIC INK is ink containing at least 50 grams of elemental metal particles per liter of ink (0.4 lb/gal) as applied and which is not used in the manufacture of an electronic circuit.

(30) NATURAL FIBERS are naturally-occurring materials, such as wool, silk, cotton, and flax.

(31) NON-POROUS SUBSTRATE is a substrate that has no tiny pores or openings in its physical structure in which to absorb fluids. Non-porous substrates include, but are not limited to, glass, metals and plastics.

(32) OPAQUE INK is an ink containing colored pigments which is screen printed over a clear base ink to form the colored images in the production of water slide decals.

(33) OVERALL CONTROL EFFICIENCY (C.E.), in percent, is the ratio of the weight of the VOC removed by the emission control system from the screen printing operation effluent stream entering the control device to the total VOC emitted from the screen printing operations, both measured simultaneously, and shall be calculated by the following equation:

$$C.E. = \frac{(W_c - W_a)}{W_e} \times 100$$

$$C.E. = \frac{(\text{Capture Efficiency}) \times (\text{Control Device Efficiency})}{100}$$

Where: W_c = weight of VOC in screen printing operation effluent stream entering control device

W_a = weight of VOC discharged from the control device

W_e = weight of VOC emitted

(34) OVERLAY is a screen-printed product made of polycarbonate, polyester, or clear vinyl plastic substrate which activates the circuitry on an electronic circuit, as defined in paragraph (b)(14), underneath it when pressed against the electronic circuit. Overlays and electronic circuits are used in membrane switches of products such as computer keyboards, calculators, control panels, and home appliances.

(35) PLASTICS are man-made materials, excluding rubber, produced from high molecular weight synthetic or natural organic polymers which are capable of being shaped or flowing under heat and pressure into desired forms at some stage of their manufacture. Plastics include, but are not limited to, acrylonitrile butadiene styrene (ABS), acrylic, butylate, epoxy, vinyl, polyvinyl chloride (PVC), polyethylene, polypropylene, polystyrene, polycarbonate, polyamide, polyester, and polyurethane.

(36) POLYETHYLENE PRODUCTS are screen-printed flags, banners, signs, or displays made of polyethylene plastic substrate.

(37) PRINTING is any operation that imparts a color, design, alphabet, symbol, or numeral on a substrate.

(38) PRINTING INK is any viscous fluid used in printing, impressing, or transferring an image onto a substrate.

(39) RESISTS are inks that are screen printed to (A) form the required alphabets, numerals, designs, or symbols on the surface of the substrate;

and (B) protect the screen printed or covered surface from the subsequent application of etching or plating solution, and (C) are inks that may be later removed from the substrate by a resist stripper. Resists applications include, but are not limited to, etched electronic circuits, display screens, chemical milling of parts, nameplates and signage.

(40) SCRATCH-OFF INK is an opaque printing ink formulated to be applied on a substrate to hide the information already printed on the substrate and to be scratched-off to reveal the printed information. Scratch-off inks are used to make products, which include but are not limited to, lottery tickets and contest games.

(41) SCREEN PRINTING is a printing process in which printing ink, coating, or adhesive material is passed through a taut web or fabric to which a refined form of stencil has been applied. The stencil openings determine the form and dimensions of the imprint.

(42) SCREEN PRINTING EQUIPMENT is equipment used for applying screen printing materials, including the flash-off area, ovens or dryers, conveyors, or other equipment operating as part of screen printing operations.

(43) SCREEN PRINTING MATERIALS are any inks, coatings, or adhesives, including added thinners or additives, used in screen printing.

(44) SCREEN PRINTING OPERATIONS are operations which include screen printing and any subsequent drying, curing, or conveying of the screen-printed substrate.

(45) SERIGRAPHS are color paintings made by screen printing operations

(46) STAINED GLASS OVERLAY is untreated polyester film, screen printed with polyester-based screen printing ink, to simulate the appearance of stained glass.

(47) STERILIZATION INDICATOR is a product which is screen printed with an ink that changes color to indicate that sterilization has occurred. Sterilization indicators are used to monitor the sterilization of medical instruments, autoclave efficiency, and the thermal processing of foods for prevention of spoilage.

(48) SUB-PRINTED PRODUCTS are screen-printed products, which include, but are not limited to, overlays or nameplates, made of a polycarbonate, polyester, or clear vinyl plastic substrate on which the screen printing material is applied on the unexposed side followed by an adhesive coat.

(49) UNSEALED ALUMINUM is chemically anodized aluminum used to make products which are screen printed with a dye and subsequently immersed in a sealing bath to seal the printed dye in the pores of the aluminum.

(50) VACUUM-FORMING is a process which imparts a desired shape to a printed object by subjecting the screen printed area of the object to a vacuum.

(51) VOLATILE ORGANIC COMPOUND (VOC) is any chemical compound that contains the element carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate and exempt compounds.

(52) WATER SLIDE DECALS are decals which are screen printed onto treated paper stock, and are removable from the stock by the dissolution of an underlying, water-soluble adhesive or a similar carrier.

(53) WATER SLIDE DECAL ADHESIVE is any adhesive which is screen printed onto treated paper stock, in the production of water slide decals.

(c) Requirements

(1) VOC Content of Screen Printing Materials

A person shall not apply to any substrate any screen printing material, excluding extreme performance screen printing materials, which contains, as applied, a total amount of VOC in excess of the limits specified in subparagraphs (c)(1)(A), (c)(1)(B), or (c)(1)(C). The applicable VOC limit for a screen printing operation shall be determined by first looking for the product in subparagraph (c)(1)(A). If the product is not listed in subparagraph (c)(1)A), look for the product's substrate in subparagraph (c)(1)(B). If the substrate is not listed in subparagraph (c)(1)(B), look for the applicable limit in subparagraph (c)(1)(C).

In lieu of meeting the requirements in subparagraph (c)(1)(C), a person may comply with the requirements in paragraph (c)(2) if the screen printing material qualifies for an extreme performance classification under subdivision (e).

(A) For screen printing coatings and inks used in the production of the following products:

PRODUCT	VOC LIMIT grams per Liter of Coating (or Ink), Less water and Less Exempt Compounds On and After December 13, 1996	
	g/L	lbs/gal
Chlorine Indicator	500	4.2
Containers	800	6.7
Electronic Circuit	850	7.1
Mechanically-Formed Products	800	6.7
Overlays	800	6.7
Polyethylene Products	800	6.7
Stained Glass Overlay	800	6.7
Sterilization Indicator	600	5.0
Sub-Printed Products	800	6.7
Water Slide Decals:		
Opaque Inks	800	6.7
Clear Inks	800	6.7
Ceramic Decal Inks	800	6.7

(B) For screen printing coatings and inks not regulated by subparagraph (c)(1)(A) and which are applied to the following specified substrates:

SUBSTRATE	VOC LIMIT grams per Liter of Coating (or Ink), Less water and Less Exempt Compounds On and After December 13, 1996	
	g/L	lbs/gal
Ceramic	800	6.7
Fiberglass	600	5.0
Glass or Metal	600	5.0
Man-Made Textile	800	6.7
Unsealed Aluminum	800	6.7

If a substrate is regulated under more than one substrate category listed in subparagraph (c)(1)(B), the category with the highest VOC limit shall apply.

(C) For screen printing materials not regulated by the provisions in subparagraph (c)(1)(A) or (c)(1)(B), which have the following material classifications:

SCREEN PRINTING MATERIAL	VOC LIMIT grams per Liter of Coating (or Ink or Adhesive), Less water and Less Exempt Compounds On and After December 13, 1996	
	g/L	lbs/gal
Adhesive	400	3.3
Coating	400	3.3
Fine Detail Loose-leaf Binder Ink	745	6.2
Fluorescent Ink	540	4.5
High-VOC Serigraph Ink	800	6.7
Loose-leaf Binder Metallic Ink	745	6.2
Metallic Ink	400	3.3
Printing Ink	400	3.3
Resists	600	5.0
Scratch-Off Ink	800	6.7
Water-Slide Decal Adhesive	800	6.7

If a screen printing material is regulated under more than one screen printing material category listed in subparagraph (c)(1)(C), the category with the highest VOC limit shall apply.

(2) VOC Content of Extreme Performance Screen Printing Materials

A person shall not apply any extreme performance screen printing material in excess of the limits specified below:

	VOC LIMIT Grams of VOC per Liter of ExtremePerformance Screen Printing Material, Less Water and Less Exempt Compounds	
	g/L	lbs/gal
On and after July 9, 1993	800	6.7
On and after January 1, 2003	400	3.3

(3) Usage of High-VOC Serigraph Inks

The total usage of high-VOC serigraph inks, as defined in paragraph (b)(23), shall not exceed 10 percent, (by volume), of the total usage of

screen printing materials applied on all serigraphs at a facility, on a monthly basis, unless an approved emission control system is used to reduce emissions from high-VOC serigraph inks by an equivalent or greater level to that which would have been achieved by the use of an ink containing 3.3 pounds per gallon VOC (less water and exempt compounds). The required overall control efficiency of the emission control system shall be determined by the equation in paragraph (d)(1).

(4) Solvent Cleaning Operations; Storage and Disposal of VOC-Containing Materials

Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in cleaning operations shall be carried out pursuant to Rule 1171 - Solvent Cleaning Operations.

(5) Recordkeeping

Any person who owns or operates a facility at which screen printing operations are conducted shall maintain records in accordance with District Rule 109.

(6) Prohibition of Specification and Sale

No person shall sell, distribute, or require any other person to use in the District any VOC-containing material subject to the provisions of this rule which, when thinned or reduced according to the manufacturer's recommendation for application, does not meet the applicable VOC limits required by this rule for the specific application.

(7) Labeling

Labels of screen printing materials shall comply with the provisions of Rules 443 and 443.1.

(d) Approved Emission Control System

(1) Any person who owns or operates a facility at which screen printing operations are conducted may comply with the provisions of subparagraph (c)(1)(A), (c)(1)(B), or (c)(1)(C), or paragraph (c)(2) by using an approved emission control system for reducing emissions of VOC, consisting of collection and control devices which have been approved in writing by the Executive Officer. The approved emission control system shall reduce the VOC emissions resulting from the use of non-compliant inks, adhesives and coatings by an equivalent or greater level to that which

would have been achieved by the provisions of subparagraph (c)(1)(A), (c)(1)(B), (c)(1)(C), or paragraph (c)(2).

The required efficiency of an emission control system at which an equivalent or greater level of VOC emission reduction will be achieved shall be calculated by the following equation:

$$C.E. = \left\{1-\left[\frac{VOC_{LWc}}{VOC_{LWn,\,Max}} \times \frac{1-\left(VOC_{LWn,\,Max}/D_{n,\,Max}\right)}{1-\left(VOC_{LWc}/Dc\right)}\right]\right\} \times 100$$

Where:

C.E.	=	Overall Control Efficiency, percent
VOC_{LWc}	=	VOC Limit of Rule 1130.1, less water and less exempt compounds, g/L, pursuant to subdivision (c).
VOC_{LWc}	=	400 g/L for high-VOC serigraph inks if compliance with the 10% requirement in paragraph (c)(3) is not achieved.
VOC_{LWc}	=	800 g/L for high-VOC serigraph inks if compliance with the 10% requirement in paragraph (c)(3) is achieved.
$VOC_{LWn,Max}$	=	Maximum VOC content of non-compliant ink (or coating or adhesive) used in conjunction with a control device, less water and exempt compounds, g/L.
$D_{n,Max}$	=	Density of solvent, reducer, or thinner contained in the non-compliant ink (or coating, or adhesive) which has the maximum VOC content of all non-compliant inks (or coatings, or adhesives) used on a printing line, g/L.
D_c	=	Density of corresponding solvent, reducer, or thinner used in the compliant ink (or coating, or adhesive) system = 880 g/L

(2) The control device efficiency, as defined in paragraph (b)(12), of a control device shall not be less than 95 percent.

(e) Qualification for Classification as an Extreme Performance Screen Printing Material

A screen printing ink or coating may be classified as an extreme performance screen printing material, provided that the applicator receives written approval of such classification from the Executive Officer prior to the application of such ink or coating, and it is shown that the ink or the coating, in its intended use, is screen printed on a non-porous substrate and exposed to any of the following:

(1) Petroleum-based fuels, or hydraulic fluids containing phosphate esters, or industrial-grade acid or alkaline solutions;

(2) Industrial-grade detergents, cleaners, or abrasive scouring agents;

(3) Other chemicals having similar degrading properties as in paragraphs (e)(1) or (e)(2), as determined by the Executive Officer;

(4) Continuous outdoor conditions for more than five (5) years; or

(5) Other harsh environmental conditions as determined by the Executive Officer.

Screen printing materials subject to subparagraph (c)(1)(A) or (c)(1)(B) shall not be eligible for extreme performance classification. If a screen printing material complies with the requirements of subparagraph (c)(1)(C), an extreme performance classification is not required.

(f) Rule 442 Applicability

Any screen printing operation which is exempt from all or a portion of the VOC limits of this rule shall comply with the provisions of Rule 442.

(g) Test Methods

(1) Methods of Analysis

For purposes of this rule, the following test methods shall be used:

(A) VOC Content of Adhesives, Coatings, and Inks

The VOC content shall be determined by the methods specified in clauses (g)(1)(A)(i) or (g)(1)(A)(ii).

(i) United States Environmental Protection Agency (USEPA) Reference Method 24, (40 Code of Federal Regulations, Part 60, Appendix A). The exempt compounds content shall be determined by District Method 303 (Determination of Exempt Compounds) contained in the District

Laboratory Methods of Analysis for Enforcement Samples manual; or

(ii) District Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the District Laboratory Methods of Analysis for Enforcement Samples manual.

(iii) Exempt Perfluorocarbon Compounds

The following classes of compounds: cyclic, branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluoro-carbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision (c), only at such time as manufacturers specify which individual compounds are used in the formulation of the screen printing material and identify the test methods, which have been approved by the USEPA and the District prior to such analysis, that can be used to quantify the amount of each exempt compound.

(B) Metal Content in Inks

The metal content of metallic inks shall be determined by District Method 318 (Determination of Elemental Metal in Coatings by X-Ray Diffraction) contained in the District Laboratory Methods of Analysis for Enforcement Samples manual.

(C) Determination of Fibers

The presence of natural fibers in textiles shall be determined by District Method 317 (Determination of Natural Fibers) contained in the District Laboratory Methods of Analysis for Enforcement Samples manual.

(2) Determination of Efficiency of Emission Control Systems

(A) The capture efficiency of an emission control system as defined in paragraph (b)(3) shall be determined by a minimum of three sampling runs subject to the data quality objective (DQO)

presented in the USEPA technical guideline document, "Guidelines for Determining Capture Efficiency, January 9, 1995". Individual capture efficiency test runs subject to the USEPA technical guidelines shall be determined by:

(i) Applicable USEPA Methods 204, 204A, 204B, 204C, 204E, and/or 204F; or

(ii) District's Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency; or

(iii) any other method approved by the USEPA, the California Air Resources Board (ARB), and the District Executive Officer.

(iv) The capture efficiency of a collection device which meets the requirements of a totally enclosed chamber as specified in USEPA methods 204, 204A, 204B, 204C, 204E, and/or 204F shall be deemed 100 percent.

(B) The control device efficiency of an emission control system as defined in paragraph (b)(12) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, or District Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. USEPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(3) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(4) Equivalent Test Methods

Other test methods determined to be equivalent after review by the staffs of the District, ARB, and the USEPA, and approved in writing by the District Executive Officer may also be used for methods of analysis.

(5) Test Method Dates

All test methods referenced in this section shall be the most recent versions approved by the District, ARB, and USEPA. The Executive Officer may update test methods as necessary to reflect the most accurate

method available, provided the method does not affect the stringency of the rule. These updates are subject to approval by ARB and USEPA.

(h) Exemptions

(1) The requirements of subparagraphs (c)(1)(A), (c)(1)(B), or (c)(1)(C) shall not apply to a facility which emits two (2) pounds or less of VOC each and every day from the use of screen printing materials.

(2) The requirements of subparagraphs (c)(1)(A), (c)(1)(B), or (c)(1)(C) shall not apply to screen printing operations performed by manufacturers of screen printing materials for purposes of conducting performance laboratory tests or doing research and development, provided that the VOC emissions from such screen printing operations are two (2) pounds or less per day.

(3) The prohibition specified in paragraph (c)(6) shall not apply to VOC-containing materials subject to the provisions of this rule which will be used solely outside of the District if records are maintained to the satisfaction of the Executive Officer.

(4) The prohibition specified in paragraph (c)(6) shall not apply to persons selling to, distributing to, or requiring the use of non-compliant materials by, other persons who are operating an approved emission control system under subdivision (d), or operating pursuant to paragraph (h)(1).

(Adopted September 15, 2000)(Amended June 6, 2003)

RULE 1131. FOOD PRODUCT MANUFACTURING AND PROCESSING OPERATIONS

(a) Purpose and Applicability

The purpose of this rule is to reduce emissions of Volatile Organic Compounds (VOCs) from solvents used in food product manufacturing and processing operations. This rule applies to any person using solvents in any food product manufacturing and processing operation except food supplements in tablet or capsule form.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) BREWERY is a facility that manufactures malt liquors, including but not limited to beers and ales, using a steeping, boiling and fermentation process or an infusion and fermentation process.

(2) DEEP-FAT FRYING is the cooking of any food product by immersion in hot fat or oil.

(3) DISTILLERY is a facility that manufactures alcoholic beverages, including but not limited to whiskey, rum, tequila, vodka, gin, brandy, and liqueurs, using a distillation process.

(4) EXEMPT COMPOUND is as defined in Rule 102.

(5) FACILITY means a business or businesses engaged in food product manufacturing and processing operations which are owned or operated by the same person or persons and are located on the same or contiguous parcels.

(6) FOOD PRODUCT is any material consisting of any combination of proteins, carbohydrates, and fats, and is intended for human consumption. Colorings, flavorings, spices, and extracts or any other additive contained in such a material is considered to be a food product.

(7) FOOD PRODUCT MANUFACTURING AND PROCESSING OPERATION is any activity or equipment used in the production, formulation, or configuration of any food product. Such manufacturing and processing operations include, but are not limited to distillation,

extraction, reacting, blending, drying, crystallizing, granulating, separation, sterilization, and filtering.

(8) FOOD SUPPLEMENT is any vitamin or herb in tablet or capsule form, and is ingested into the human body to provide additional nutritional benefits than those provided by food products alone. Food bars and powdered drink mixes shall not be considered to be food supplements.

(9) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = Weight of volatile compounds in grams
W_w = Weight of water in grams
W_{es} = Weight of exempt compounds in grams
V_m = Volume of material in liters

(10) LIQUID LEAK is the dripping of liquid volatile organic compounds at the rate of more than three drops per minute or any visible liquid mist.

(11) PERSON is any firm, business establishment, association, partnership, corporation or individual, whether acting as principal, agent, employee, or other capacity including any governmental entity or charitable organization.

(12) SOLVENT is any liquid VOC-containing material.

(13) SOLVENT CLEANING is the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants which include but is not limited to dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas.

(14) STERILIZATION is a process or operation that removes or prevents the growth of bacteria and other living microorganisms.

(15) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(16) WINERY is a facility that manufactures wine or champagne using a fermentation process.

(c) Requirements

(1) Effective October 1, 2002, a person shall not use solvents in any food product manufacturing or processing operation, except sterilization processes, unless one of the following is met:

(A) the VOC content of each solvent used in such operations does not exceed 120 grams of VOC per liter of material; or

(B) a VOC emission control system, consisting of a collection device that collects 90 percent, by weight, of the emissions generated from the food product manufacturing equipment or operation, and a control device that removes 95 percent, by weight, of the collected emissions.

(2) A person shall not use solvents for the sterilization of food manufacturing and processing equipment unless:

(A) the solvent contains no more than 400 grams of VOC per liter of material, effective October 1, 2002.

(B) the solvent contains no more than 200 grams of VOC per liter of material, effective October 1, 2005.

In lieu of meeting the VOC limits specified in these subparagraphs, a person may comply by using a VOC emission control system that meets the requirements of subparagraph (c)(1)(B).

(3) Effective upon adoption of this rule, a person shall not operate equipment used in food product manufacturing and processing operations unless the equipment is free of liquid leaks, visible tears, or cracks that result in VOC emissions to the atmosphere. In addition, the person shall repair any liquid leak, visible tear, or crack detected pursuant to the provisions of this subparagraph within 48 hours, or the person shall drain the equipment of all solvent and shut down until replaced or repaired.

(4) Effective upon adoption of this rule, a person shall carry out solvent cleaning, excluding sterilization, of equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in cleaning operations, pursuant to Rule 1171 – Solvent Cleaning Operations.

(d) Recordkeeping Requirements

(1) A person shall maintain records pursuant to Rule 109 for all solvents used in food product manufacturing and processing operations.

(2) A person shall maintain records for the detection of any liquid leak, visible tear, or crack referenced in paragraph (c)(2). The records shall include, at a minimum, the following:

(A) the date and time the leak, tear, or crack was detected;

(B) specific identification of the equipment associated with the leak, tear, or crack;

(C) the date and time the leak, tear, or crack was repaired.

Such records shall be retained for two years and shall be made available at the request of the Executive Officer or his representative.

(e) Test Methods

For the purpose of this rule, the following test methods shall be used. Other test methods determined to be equivalent after review by the staffs of the District, the Air Resources Board, and the United States Environmental Protection Agency, and approved in writing by the District Executive Officer may also be used.

(1) Determination of VOC Content

The VOC content of materials subject to the provisions of this rule shall be determined by the following methods:

(A) United States Environmental Protection Agency (U.S. EPA) Reference Method 24 (Code of Federal Regulations, Title 40, Part 60, Appendix A). The exempt compounds' content shall be determined by the South Coast Air Quality Management District's (SCAQMD) Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOC) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with subdivision (c), only when manufacturers specify which individual compounds are used in the solvent formulation and identify the United States Environmental Protection Agency, California Air Resources Board, and the District approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Presence of VOC in Solvents

The presence of VOC in the headspace over the cleaning material shall be determined by SCAQMD Method 313 [Determination of Presence of Volatile Organic Compounds (VOC) in a Headspace] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

The presence of VOC in liquid cleaning materials shall be determined by SCAQMD Method 308 (Quantitation of Compounds by Gas Chromatography) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(3) Determination of Efficiency of Emission Control System

(A) The efficiency of the collection device of the emission control system as specified in subparagraph (c)(1)(B) shall be determined by the U.S. EPA method cited in 55 Federal Register 26865, June 29, 1990, or any other alternative method approved by the United States Environmental Protection Agency, the California Air Resources Board, and the District.

(B) The efficiency of the control device of the emission control system as specified in subparagraph (c)(1)(B) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by U.S. EPA Test Methods 25, 25A or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. U.S. EPA Test Method 18 or ARB Method 422 shall be used to determine emissions of exempt compounds.

(4) Multiple Test Methods

When more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one

of the specified test methods or set of test methods shall constitute a violation of this rule.

(5) All test methods referenced in this section shall be the most recently approved version.

(f) Rule 442 Applicability

Any solvent which is exempt from all or a portion of this rule shall be subject to the applicable requirements of the applicable Regulation XI source specific rule. If there is no applicable Regulation XI source specific rule, the solvent shall be subject to Rule 442 - Usage of Solvent.

(g) Exemptions

(1) The provisions of this rule, except paragraphs (c)(2) and (d)(1), shall not apply to:

(A) any person or facility with total aggregate VOC emissions less than 440 pounds in any calendar month from all food product manufacturing and processing operations subject to this rule.

(B) Operations exclusively using solvents containing no more than 50 grams of VOC per liter of material.

(2) The provisions of this rule shall not apply to the following:

(A) Deep-fat frying operations.

(B) Operations conducted at breweries, wineries, or distilleries.

(C) Equipment subject to Rule 472 – Reduction of Animal Matter.

(D) The production of food supplements as defined in paragraph (b)(8) of the rule. Such food supplements shall be subject to Rule 1103 – Pharmaceuticals and Cosmetics Manufacturing Operations. The manufacturing and production of all other food supplement products are subject to the requirements of this rule.

(E) Operations subject to Rule 1138 – Control of Emissions from Restaurant Operations.

(F) Operations subject to Rule 1153 – Commercial Bakery Ovens.

Records shall be maintained pursuant to paragraph (d)(1) for solvents used for the sterilization of equipment exempted in this paragraph.

(3) Operations exclusively using solvents containing no more than 50 grams of VOC per liter of material are not subject to any provision of this rule.

(Adopted January 19, 2001)(Amended March 5, 2004)(Amended May 7, 2004)
(Amended May 5, 2006)

RULE 1132. FURTHER CONTROL OF VOC EMISSIONS FROM HIGH-EMITTING SPRAY BOOTH FACILITIES

(a) Purpose and Applicability

The purpose of this rule is to further reduce volatile organic compound (VOC) emissions from spray coating or laminating operations in high VOC-emitting facilities. This rule applies to any spray booth facility, except petroleum industry facilities, that uses VOC-containing materials that amount to more than 40,000 pounds (20 tons) per year of VOC emissions in any emission inventory year beginning in 1999. Except when a specific exemption applies, the facilities subject to this rule shall continue to comply with other rules that are applicable to the same operation.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) APPROVED EMISSION FACTORS are those emission factors identified in the Unified Emission Factors (UEFs) table for Open Molding of Composites which was published in July 23, 2001, included as Attachment A of this rule excluding the "Gelcoat Non-Atomized Application" emission factors, or any subsequent emission factors developed for open molding of composites that have been approved by the Executive Officer, the Executive Officer of the California Air Resources Board or designee, and the administrator of the United States Environmental Protection Agency or designee.

Deleted:

(2) CAPTURE SYSTEM is an arrangement of devices such as enclosures, plenums, fans and ductworks used to collect VOC-laden air from the process area and direct it to the control equipment.

(3) COMPOSITE MATERIAL is comprised of a gel coat, resin and reinforcement element combined in a thermosetting polymer matrix which is chemically or mechanically bonded.

(4) COMPOSITE MANUFACTURING FACILITY is any facility engaged in the manufacturing of products using composite material.

Deleted: .

(5) EMISSION CONTROL SYSTEM is a combination of capture system(s) and control equipment used to reduce, eliminate or control the release of VOC to the atmosphere.

(6) EMISSION INVENTORY YEAR is the annual emission reporting period beginning from July 1 of the previous year through June 30 of a given year. For example, emission inventory year 1999 covers the period from July 1, 1998 through June 30, 1999.

(7) EXCESS EMISSION REDUCTIONS are VOC emission reductions that are not required by any other District requirement as of January 19, 2001. Excess emission reductions also include any reductions achieved on or after January 19, 2001 in excess of the requirements of subdivision (c) resulting from a process change subject to best available control technology (BACT) as specified in Regulation XIII and implemented solely for the purpose of complying with this rule.

(8) FACILITY is any equipment or group of equipment or other VOC-emitting activities, which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility.

(9) GEL COAT is a thermosetting resin surface coating, either pigmented or clear, that provides a cosmetic enhancement and improves resistance to degradation from exposure to the elements.

(10) NONATOMIZED APPLICATION is any resin application technology in which the resin is not broken into droplets or an aerosol as it travels from the application equipment to the surface of an object. Nonatomized application technology includes, but is not limited to, flowcoaters, flow choppers, pressure-fed rollers, resin impregnators, and hand applications using a brush or roller.

(11) PETROLEUM INDUSTRY FACILITY is any facility primarily engaged in the production, refining, storage, transfer or distribution of crude petroleum or petroleum products as defined in the Standard Industrial Classification for crude petroleum and natural gas (SIC code 1311),

petroleum refining (SIC code 2911), petroleum bulk stations and terminals (SIC code 5171), or other related industries (e.g., SIC codes 4226, 4612, 4613, 4923 and 5541).

(12) RESIN is any thermosetting polymer used to encapsulate and bind together reinforcement fibers in the manufacturing of composites.

(13) SPRAY BOOTH is any equipment or enclosure used to capture or reduce overspray from the application of any coating, lamination, or other VOC-containing materials, that requires a permit from the District. A spray booth includes standard bench type, floor type, and automotive type spray booths, as well as prep stations, spray stations (i.e., a bank of filters with a plenum and exhaust fan), and spray rooms.

(14) SPRAY BOOTH FACILITY is any facility that has installed one or more spray booths. A facility subject to a District rule or regulation that requires installation of any spray booth is also considered as a spray booth facility.

(15) VOC-CONTAINING MATERIAL is any material that contains VOC including, but not limited to, resins, polymers, gel coats, coatings, paints, varnishes, stains, sealers, thinners, cleanup solvents, thinning solvents, inks, fountain solutions, adhesives, and sealants. VOC-containing materials do not include fuels or combustion products.

(16) VOLATILE ORGANIC COMPOUNDS (VOC) are as defined in Rule 102.

(c) Requirements

On or after the effective date specified in paragraph (e)(1), a person shall not operate any spray booth facility subject to this rule, unless the VOC emissions from any equipment, activity or operation that applies, or is required by any District rule, regulation or permit to apply, VOC-containing materials in a spray booth are reduced through the use of the following:

(1) An emission control system that has an overall efficiency of at least 65 percent by weight; or

(2) VOC-containing materials that have a VOC content at least 65 percent lower than any applicable rule limit in effect as of January 19, 2001; or

(3) A combination of methods specified in paragraphs (c)(1) and (c)(2), which when individually applied do not meet the specified reduction

requirement, but when combined reduce the VOC emissions by at least 65 percent by weight.

The Executive Officer shall impose conditions necessary to ensure continuous compliance. In no event shall the compliance determination period exceed a monthly basis.

(d) Alternative Compliance Plan

The operator of a spray booth facility that reported more than 20 tons per year of VOC emissions in any emission inventory year of 1999 or thereafter, may, in lieu of complying with the requirements of subdivision (c) and the effective dates specified in paragraph (e)(1), comply with an alternative compliance plan that is submitted to and approved by the Executive Officer. The Executive Officer shall not approve an alternative compliance plan, unless the plan has demonstrated real, quantifiable and verifiable excess emission reductions through one of the following:

(1) Any combination of facility-wide measures at a composite manufacturing facility that reduces VOC emissions by at least 65 percent effective July 1, 2004, from what would be emitted based on Rule 1162 requirements in effect as of January 19, 2001, usage factors and approved emission factors, demonstrated by use of the following equation:

$$\text{Percent VOC Reduction} = \frac{\left[\sum_{i=1}^{a} f_i U_i + \sum_{j=1}^{b} f_j U_j\right] - \left[\sum_{k=1}^{c} f_k U_k + \sum_{l=1}^{d} f_l U_l\right]}{\sum_{i=1}^{a} f_i U_i + \sum_{j=1}^{b} f_j U_j} \times 100$$

where,

U_i = the approved emission factor for the i^{th} resin based on the allowable monomer content of Rule 1162 as of January 19, 2001, and the allowable method of resin application and associated vapor suppressants and roll-out and covered-cure used as of January 19, 2001.

U_j = the approved emission factor for the j^{th} gel coat based on the allowable monomer content of Rule 1162 as of January 19, 2001, and the allowable method of gel coat application used as of January 19, 2001.

U_k = the approved emission factor for the k^{th} resin based on the actual monomer content and the actual method of resin application and any associated vapor suppressants and roll-out and covered-cure currently used.

U_l = the approved emission factor for the l^{th} gel coat based on the actual monomer content and the actual gel coat application for each gel coat currently used, excluding the gel coat nonatomizing emission factor.

f_i = usage factor, based on the fraction of the i^{th} resin used to the total facility usage of all resins and gel coats during the twelve-month period prior to January 19, 2001, as a monthly average.

f_j = usage factor, based on the fraction of the j^{th} gel coat used to the total facility usage of all resins and gel coats during the twelve-month period prior to January 19, 2001, as a monthly average.

f_k = usage factor, based on the fraction of the k^{th} resin used to the total facility usage of all resins and gel coats during the latest twelve-month period, calculated as a monthly average.

f_l = usage factor, based on the fraction of the l^{th} gel coat used to the total facility usage of all resins and gel coats during the latest twelve-month period, calculated as a monthly average.

Effective January 1, 2002, the composite manufacturing facility shall comply with all of the following:

(A) Nonatomized application shall be used for all resin applications;

(B) Clear gel coat shall contain no more than 44 percent by weight of monomers, as applied;

(C) White and off-white pigmented gel coat shall contain no more than 30 percent by weight of monomers, as applied; and

(D) Non-white pigmented gel coat shall contain no more than 37 percent by weight of monomers, as applied.

(2) Effective December 31, 2004, use of VOC-containing materials that have a VOC content at least 85 percent lower than any applicable rule limit in effect as of January 19, 2001, emission control systems that have an overall efficiency at least 85 percent by weight, or a combination thereof that achieves an overall reduction of 85 percent by weight, for each spray

booth except those qualified for exemption as specified in paragraphs (h)(2) and (h)(3); or

(3) Any combination of facility wide measures that reduces VOC emissions equivalent to that required under subdivision (c) on or before the effective date specified in paragraph (e)(1) provided the measures are approved in writing by the Executive Officer, CARB and USEPA. The spray booth facility shall comply with the USEPA Economic Incentive Programs (EIP) guidelines, if applicable.

The Executive Officer shall impose conditions necessary to ensure continuous compliance. In no event shall the compliance determination period exceed a monthly basis.

(e) Compliance Schedule

(1) The effective dates of the requirements in subdivision (c) shall be as follows:

(A) July 1, 2003, for spray booth facilities emitting more than 100,000 pounds (50 tons) of VOC in emission inventory year 1999 or 2000.

(B) July 1, 2004, for spray booth facilities emitting up to and including 100,000 pounds (50 tons) of VOC in emission inventory year 1999 or 2000.

(C) For all other spray booth facilities, July 1, 2004, or 30 months after the applicable VOC emissions from the facility have exceed 40,000 pounds (20 tons) for an emission inventory year after 2000, whichever is later.

(2) Except as indicated in subparagraph (C) below, no later than 18 months prior to the applicable compliance date pursuant to paragraph (e)(1), the operator of a facility subject to this rule shall submit to the Executive Officer:

(A) Complete application(s) for permit(s) to construct and operate for any modifications or new installations required to comply with this rule and for which the permit(s) is (are) required pursuant to Rules 201 and 203;

(B) A change of condition application for each spray booth employing the compliance method pursuant to paragraph (c)(2) or (c)(3) by switching to lower VOC content materials; and

(C) If the operator elects to comply with the alternative compliance plan pursuant to subdivision (d), a complete plan application in accordance with Rule 306 – Plan Fees, including a description of how compliance is to be achieved shall be filed no later than May 1, 2004, for spray booth facilities with a compliance schedule of July 1, 2004, pursuant to subparagraph (e)(1)(C), or no later than 12 months after the applicable VOC emissions exceeded 40,000 pounds (20 tons) at a spray booth facility for an emission inventory year after 2000.

(f) Test Methods and Procedures

The following test methods and procedures shall be used to determine compliance with this rule. All test methods referenced below shall be the most recent version issued by the respective organization. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.

(1) Determination of VOC Content of VOC-Containing Materials:

(A) US EPA Method 24 - Determination of volatile matter content, water content, density, volume solids and weight solids of surface coatings

(B) US EPA Method 24A - Determination of volatile matter content and density of printing inks and related coatings

(C) District Method 303 - Determination of Exempt Compounds

(D) District Method 304 - Determination of Volatile Organic Compounds (VOCs) in Various Materials

(E) District Method 313 – Determination of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry

(2) Determination of Efficiency of Emission Control Systems:

(A) The capture efficiency of an emission control system shall be determined by verifying the use of a Permanent Total Enclosure (PTE) and 100% capture efficiency as defined by US EPA Method 204, "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if a US EPA Method 204 defined PTE is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria

presented in the US EPA technical guidance document "Guidelines for Determining Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the US EPA technical guidelines shall be determined by:

(i) The Temporary Total Enclosure (TTE) approach of US EPA Methods 204 through 204F; or

(ii) The District "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency."

(B) The control equipment efficiency of an emission control system, on a mass emissions basis, and the VOC concentrations in the exhaust gases, measured and calculated as carbon, shall be determined by US EPA Test Methods 25, 25A, District Method 25.1 - Determination of Total Gaseous Non-Methane Organic Emissions as Carbon, or District Method 25.3 – Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources, as applicable. US EPA Test Method 18 or ARB Method 422 shall be used to determine emissions of exempt compounds.

(C) The overall efficiency of an emission control system shall be determined using the following equation (all efficiencies expressed in percent):

Overall Efficiency =

(Capture Efficiency) x (Control Equipment Efficiency)/100

(3) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, the application of these methods to a specific set of test conditions is subject to approval by the Executive Officer. In addition, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(4) Laboratory Approval

The sampling, analysis, and reporting shall be conducted by a laboratory that has been approved under the District Laboratory Approval Program (LAP) for the cited District reference test methods, where LAP approval is

available. For District reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one year after the date that the LAP program becomes available for that District reference test method.

(g) Monitoring, Recordkeeping and Reporting Requirements

(1) No later than 180 days after the effective date of the requirements, the operator of a facility who elects to install an emission control system to comply with all or part of the rule requirements shall conduct performance testing to determine the overall efficiency of the emission control system and submit a complete test report to the Executive Officer. The performance testing of the emission control system shall be repeated when the system is modified or an operating parameter is changed in a manner that affects the capture or control efficiency. In such case, the affected capture or control efficiency testing shall be conducted and the test report submitted to the Executive Officer within 180 days after the modification. The Executive Officer may require more frequent performance testing, as necessary.

(2) The operator of a facility subject to this rule shall submit an initial compliance certification report to the Executive Officer no later than 180 days after the effective date of the requirements. The operator shall then submit subsequent compliance certification reports annually within 60 days after the end of each emission inventory year. The initial and annual compliance certification reports shall include the performance testing report (if applicable), inventory of materials used, and other procedures and information, as necessary to determine compliance with the applicable requirements or exemptions.

(3) The operator shall, at a minimum, maintain the following records for a period of at least two years, or five years for facilities subject to Title V Permit requirements, and make the records available to the Executive Officer upon request:

(A) Purchase records, or equivalent records as approved by the Executive Officer, for all VOC-containing materials used in the facility;

(B) Records of VOC-containing materials in accordance with Rule 109 – Recordkeeping for Volatile Organic Compound Emissions;

(C) Records on the system operating and maintenance parameters as applicable with any emission control system. At a minimum, the operator shall maintain records of the parameters necessary to demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. These parameters shall include, but are not limited to, temperatures, pressures, and flow rates; and

(D) All measurements, process information, material data, test data, and other related information used in or required to support the emission determinations for compliance demonstration.

(h) Exemptions

The requirements of subdivision (c) shall not apply to the following:

(1) A facility that has applied for and been issued by the Executive Officer an enforceable permit condition that limits the facility-wide VOC emissions from the use of VOC-containing materials to no more than 40,000 pounds (20 tons) per emission inventory year. The operator must submit complete application(s) for change of permit conditions no later than 18 months prior to the applicable compliance date pursuant to paragraph (e)(1) and comply with the facility-wide emissions limit beginning on the applicable effective date pursuant to paragraph (e)(1).

(2) A spray booth that meets the following condition:

Exhaust Flow Rate (standard cubic feet per minute)	Allowable VOC Emissions (pounds per day)
Less than 10,000	12
10,000 or greater but less than 30,000	25
30,000 or greater but less than 60,000	50
60,000 or greater but less than 90,000	100
90,000 or greater but less than 275,000	150
275,000 or greater	225

If at any time the exhaust flow rate falls in a lesser category, except during equipment malfunction, maintenance or repairs for a period not to exceed 72 hours per occurrence, the allowable VOC emissions of that lesser category shall apply. The allowable VOC emissions shall be determined based on the monthly average of the past calendar month, calculated by

dividing the total emissions from the spray booth for the month by the number of calendar days in the month. The operator of a spray booth that meets the above conditions shall submit to the Executive Officer a change of condition application for each spray booth employing this exemption by September 5, 2004, or no later than 18 months prior to the applicable compliance date pursuant to subparagraph (e)(1)(C), whichever is later.

(3) A spray booth for which the VOC emissions are reduced through the use of an existing emission control system in operation under a valid District permit as of December 1, 2000, that is not mandatory pursuant to any other District requirement or the requirement of any other governmental agency. This exemption is valid only for facilities that are subject to the alternative compliance plan specified in paragraph (d)(2).

ATTACHMENT A

Unified Emission Factors for Open Molding of Composites

July 23, 2001

Emission Rate in Pounds of Styrene Emitted per Ton of Resin or Gelcoat Processed

Styrene content in resin/gelcoat, % [1]	<33 [2]	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	>50 [2]
Manual	0.126 x %styrene x 2000	83	89	94	100	106	112	117	123	129	134	140	146	152	157	163	169	174	180	((0.286 x %styrene) - 0.0529) x 2000
Manual w/ Vapor Suppressed Resin VSR [3]	**Manual emission factor** [listed above] x (1 - (0.50 x specific VSR reduction factor for each resin/suppressant formulation))																			
Mechanical Atomized	0.169 x %styrene x 2000	111	126	140	154	168	183	197	211	225	240	254	268	283	297	311	325	340	354	((0.714 x %styrene) - 0.18) x 2000
Mechanical Atomized with VSR [3]	**Mechanical Atomized emission factor** [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																			
Mechanical Atomized Controlled Spray [4]	0.130 x %styrene x 2000	86	97	108	119	130	141	152	163	174	185	196	207	218	229	240	251	262	273	0.77 x ((0.714 x %styrene) - 0.18) x 2000
Mechanical Controlled Spray with VSR	**Mechanical Atomized Controlled Spray emission factor** [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																			
Mechanical Non-Atomized	0.107 x %styrene x 2000	71	74	77	80	83	86	89	93	96	99	102	105	108	111	115	118	121	124	((0.157 x %styrene) - 0.0165) x 2000
Mechanical Non-Atomized with VSR [3]	**Mechanical Non-Atomized emission factor** [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																			
Filament application	0.184 x %styrene x 2000	122	127	133	138	144	149	155	160	166	171	177	182	188	193	199	204	210	215	((0.2746 x %styrene) - 0.0298) x 2000
Filament application with VSR [3]	0.120 x %styrene x 2000	79	83	86	90	93	97	100	104	108	111	115	118	122	125	129	133	136	140	0.65 x ((0.2746 x %styrene) - 0.0298) x 2000
Gelcoat Application	0.445 x %styrene x 2000	294	315	336	356	377	398	418	439	460	481	501	522	543	564	584	605	626	646	((1.03646 x %styrene) - 0.195) x 2000
Gelcoat Controlled Spray Application [4]	0.325 x %styrene x 2000	215	230	245	260	275	290	305	321	336	351	366	381	396	411	427	442	457	472	0.73 x ((1.03646 x %styrene) - 0.195) x 2000
Gelcoat Non-Atomized Application [8]	SEE **Note 9** below	196	205	214	223	232	241	250	259	268	278	287	296	305	314	323	332	341	350	((0.4506 x %styrene) - 0.0505) x 2000
Covered-Cure after Roll-Out	**Non-VSR process emission factor** [listed above] x (0.80 for Manual <or> 0.85 for Mechanical)																			
Covered-Cure without Roll-Out	**Non-VSR process emission factor** [listed above] x (0.50 for Manual <or> 0.55 for Mechanical)																			

Emission Rate in Pounds of Methyl Methacrylate Emitted per Ton of Gelcoat Processed

MMA content in gelcoat, % [6]	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	≥20
Gel coat application [7]	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	0.75 x %MMA x 2000

Notes

1 Including styrene monomer content as supplied, plus any extra styrene monomer added by the molder, but before addition of other additives such as powders, fillers, glass,...etc.

2 Formulas for materials with styrene content < 33% are based on the emission rate at 33% (constant emission factor expressed as percent of available styrene), and for styrene content > 50% on the emission rate based on the extrapolated factor equations; these are not based on test data but are believed to be conservative estimates. The value for "% styrene" in the formulas should be input as a fraction. For example, use the input value 0.30 for a resin with 30% styrene content by wt.

3 The VSR reduction factor is determined by testing each resin/suppressant formulation according to the procedures detailed in the ***CFA Vapor Suppressant Effectiveness Test***.

4 SEE the ***CFA Controlled Spray Handbook*** for a detailed description of the controlled spray procedures.

5 The effect of vapor suppressants on emissions from filament winding operations is based on the ***Dow Filament Winding Emissions Study***.

6 Including MMA monomer content as supplied, plus any extra MMA monomer added by the molder, but before addition of other additives such as powders, fillers, glass,...etc.

7 Based on gelcoat data from ***NMMA Emission Study***.

8 SEE the July 17, 2001 EECS report ***Emission Factors for Non-Atomized Application of Gel Coats used in the Open Molding of Composites*** for a detailed description of the non-atomized gelcoat testing.

9 Use the equation **((0.4506 x %styrene) - 0.0505) x 2000** for gelcoats with styrene contents between 19% and 32% by wt.; use the equation **0.185 x %styrene x 2000** for gelcoats with less than 19% styrene content by wt.

UEF unified factors table revised July 23 '01.xls

*Rule 1132 prohibits the use of the Gel Coat Non-Atomized Application emission rates to calculate emissions

(Adopted January 10, 2003**)**

RULE 1133. COMPOSTING AND RELATED OPERATIONS – GENERAL ADMINISTRATIVE REQUIREMENTS

(a) Purpose

This rule sets forth administrative requirements for existing and new chipping and grinding activities and composting operations. The purpose of this rule is to create an emissions-related informational database on composting and related operations through a registration process.

(b) Applicability

This rule applies to owners or operators of chipping and grinding activities and composting operations unless otherwise exempt under subdivision (g).

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) AGRICULTURAL COMPOSTING is composting conducted in agricultural settings where the feedstock consists of wastes generated on-site by the production and processing of farm or agricultural products.

(2) BACKYARD COMPOSTING is composting conducted by a household including, but not limited to, single family residences, duplexes, or apartment buildings.

(3) CHIPPING AND GRINDING is any activity that mechanically reduces the size of greenwaste, woodwaste, and/or foodwaste.

(4) COMMUNITY COMPOSTING is composting conducted by a residential neighborhood association using feedstock generated within the residential neighborhood to produce compost for the neighborhood's use.

(5) COMPOST is a product resulting from the controlled biological decomposition of organic materials.

(6) COMPOSTING is a process in which solid organic waste materials are decomposed in the presence of oxygen under controlled conditions through the action of bacteria and other microorganisms.

(7) COMPOSTING OPERATIONS are facilities involved in composting organic materials including, but not limited to, greenwaste, biosolids, manure and foodwaste.

(8) FOODWASTE is any food scraps collected from the food service industry, grocery stores, or residential food scrap collection. Foodwaste also includes foodwaste that is chipped and ground. Foodwaste mixed with greenwaste is considered foodwaste.

(9) GREENWASTE is any organic waste material generated from gardening, agriculture, or landscaping activities including, but not limited to, grass clippings, leaves, tree and shrub trimmings, and plant remains.

(10) NURSERY COMPOSTING is composting conducted at a nursery to produce compost for on-site use.

(11) PORTABLE CHIPPING AND GRINDING is chipping and grinding utilizing equipment with a manufacturer's rating of 170 brake horsepower or less.

(12) RECREATIONAL FACILITIES COMPOSTING is composting conducted at parks, arboretums and other recreational facilities using feedstock generated on-site to produce compost for on-site use.

(13) WOODWASTE is lumber, and the woody material portion of mixed demolition wastes and mixed construction wastes.

(d) Requirements

Operators of chipping and grinding activities and composting operations shall meet the following requirements:

(1) No later than July 1, 2003, operators of existing chipping and grinding activities and composting operations shall register with the District by submitting the complete and applicable information required in accordance with subdivision (e) of this rule.

(2) Prior to start of operation, operators of new chipping and grinding activities and composting operations, shall register with the District by submitting the complete and applicable information required in accordance with subdivision (e) of this rule.

(3) No later than July 1, 2004, and every year thereafter, operators of chipping and grinding activities and composting operations registered with the District shall update their registration information by providing any changes to the information submitted in accordance with subdivision (e) of this rule.

(e) Registration Process

The registration and annual update required pursuant to subdivision (d) of this rule shall, at a minimum, include the following information:

(1) Facility name;

(2) Facility location address and mailing address;

(3) Facility legal owner(s), contact person, title, telephone number, and mailing address;

(4) Facility operator (s), contact person, title, telephone number, and mailing address;

(5) Number of employees at the facility;

(6) Applicable California Integrated Waste Management Board's permit number, identification number, and facility classification;

(7) Type and amount of materials received and type and amount of products produced for the preceding year;

(8) Facility design capacity (throughput) in tons per year;

(9) Facility actual throughput in tons per month for the preceding calendar year. For new facilities, projected throughput must be provided;

(10) Feedstock description;

(11) Facility process description including, process diagram and a description of chipping and grinding operations and composting methods used (if applicable);

(12) Published tipping fee schedule for the preceding calendar year by feedstock, and;

(13) Number of air quality- and odor-related enforcement actions issued in writing against the facility by any Local Enforcement Agency and the California Integrated Waste Management Board for the preceding calendar year.

(f) Fees

The operator of any activity or facility subject to registration and annual update requirements pursuant to this rule shall be subject to a one-time fee equivalent to the plan submittal fee in accordance with Rule 306 at the time of registration.

(g) Exemptions

The following types of facilities and operations are exempt from the requirements of this rule:

(1) Portable chipping and grinding;
(2) Community composting;
(3) Agricultural composting;
(4) Nursery composting;
(5) Recreational facilities composting;
(6) Backyard Composting; and
(7) Woodwaste chipping and grinding facilities.

(Adopted January 10, 2003)(Amended July 8, 2011)

RULE 1133.1 CHIPPING AND GRINDING ACTIVITIES

(a) Purpose

The purpose of this rule is to prevent inadvertent decomposition occurring during chipping and grinding activities, including stockpile operations.

(b) Applicability

This rule applies to operators of chipping and grinding activities to produce materials other than active or finished compost, unless otherwise exempted under subdivision (f) of this rule. The requirements of Rule 403 – Fugitive Dust, also apply to these activities.

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) ACTIVE COMPOST is material that is in the process of being rapidly decomposed and is biologically unstable. Active compost is generating temperatures of at least 122 degrees Fahrenheit during decomposition. Active compost includes, but is not limited to, pathogen-reduced mulch.

(2) AGRICULTURAL CHIPPING AND GRINDING is any chipping and grinding activity conducted at an agricultural site where organic waste material is generated on-site by the production and/or processing of farm products, and the chipped and ground organic waste material is used on-site.

(3) CHIPPING AND GRINDING is any activity that mechanically reduces the size of greenwaste, woodwaste, and/or foodwaste.

(4) COMPOSTING is a process in which solid organic waste materials are decomposed in the presence of oxygen under controlled conditions through the action of bacteria and other microorganisms.

(5) COMPOST OVERS are the oversized woody materials that do not decompose in a typical composting cycle and are screened out of finished product at the end of composting. Compost overs have been through the pathogen reduction process outlined in Title 14, Section 17868.3 of the California Code of Regulations.

(6) CURBSIDE GREENWASTE is greenwaste that is collected from receptacles designated for residential household greenwaste. Curbside greenwaste also includes screened curbside greenwaste containing only grass clippings, leaves, and/or twigs that is not considered non-curbside greenwaste as defined in paragraph (c)(13).

(7) FINISHED COMPOST is a humus-like material and/or compost overs that result from the controlled biological decomposition of organic waste materials and is biologically stable.

(8) FOODWASTE is any food scraps collected from the food service industry, grocery stores, or residential food scrap collection. Foodwaste also includes food scraps that are chipped and ground.

(9) GREENWASTE is any organic waste material generated from gardening, agriculture, or landscaping activities including, but not limited to, grass clippings, leaves, tree and shrub trimmings, and plant remains. It includes curbside, non-curbside, and mixed greenwaste.

(10) INADVERTENT DECOMPOSITION is decomposition of greenwaste and/or foodwaste associated with stockpiling greenwaste and/or foodwaste for an extended period of time, and is not considered part of normal chipping and grinding operations.

(11) LANDCLEARING is an activity where trees and plants grown at the site are cut, then chipped or ground and removed from the site to clear the site.

(12) MIXED GREENWASTE is curbside greenwaste that is mixed with non-curbside greenwaste.

(13) NON-CURBSIDE GREENWASTE is any greenwaste that is not collected from receptacles designated for residential household greenwaste.

(14) PALM CHIPPING AND GRINDING is any activity that mechanically reduces the size of palm trees waste.

(15) PORTABLE CHIPPING AND GRINDING is chipping and grinding utilizing equipment with a manufacturer's rating of 170 brake horsepower or less.

(16) RAINY DAY is any day with at least 0.05 inches of rain reported by the National Weather Service or a cooperative weather reporting station for the site closest to where the chipping and grinding activity occurs.

(17) STOCKPILE is a supply of raw material tipped and stored prior to being utilized on-site or removed from the site. Raw materials before and after chipping and grinding are also included.

(18) WET WEATHER CONDITIONS are weather conditions following a rainy day not to exceed 10 days.

(19) WOODWASTE is lumber, and the woody material portion of mixed demolition wastes and mixed construction wastes. Woodwaste also includes large wood materials of curbside greenwaste or mixed greenwaste that is screened or unscreened, such as tree trimmings, branches, tree trunks, stumps, and limbs exceeding 2 inches in any dimension.

(d) Requirements

The operator of a chipping and grinding activity shall comply with the following requirements:

(1) Foodwaste shall not be taken at the facility, unless otherwise allowed by the Local Enforcement Agency to handle foodwaste.

(2) Chip or grind and utilize on-site or remove curbside, non-curbside, or mixed greenwaste from the site within 48 hours of receipt, excluding observance of official federal and state holidays, or up to seven days maximum, with approval from the Local Enforcement Agency.

(3) Maintain all the operational records for the prior five years of operation, with the most recent two years retained at the facility, which shall be immediately available upon request by the Executive Officer. The remaining three years of records shall be made available to the Executive Officer within one week of request.

(4) Maintain the following records, as applicable, on-site for two years:

(A) A copy of the facility's AQMD registration and annual updates submitted in compliance with Rule 1133;

(B) Records of date, type, and amount of greenwaste received;

(C) Records of date, type, amount of greenwaste removed from the site, and location where they are transferred to;

(D) Records of dates of rainy days and wet weather conditions and description of specific conditions that limited normal operations;

(E) Records of temperature or moisture content measurements; and

(F) Records of dates and amount of curbside greenwaste chipped and ground.

(5) The time requirements specified in paragraph (d)(2) may be extended by the number of rainy days and wet weather conditions that impede normal chipping and grinding operations provided that records are maintained in accordance with subparagraph (d)(4)(D).

(e) Moisture Content Measurement

Moisture content will be determined by collecting at least 10 samples of chipped and ground greenwaste from various locations of the pile at a depth of at least 12 inches below pile surface. The samples shall then be mixed thoroughly and analyzed for moisture content by ASTM method D4442 (December 2007), ASTM method D4444 (May 2008) or ASTM method E871-82 (December 2006).

(f) Exemptions

(1) Chipping and grinding activities of greenwaste derived from the site and utilized on-site shall be exempt from the requirements of paragraphs (d)(2), (d)(3), and (d)(4), provided less than 1,000 cubic yards of materials are either sold or given away.

(2) Portable chipping and grinding, agricultural chipping and grinding, land clearing chipping and grinding, woodwaste chipping and grinding, and palm chipping and grinding activities shall be exempt from the requirements of paragraphs (d)(2), (d)(3), and (d)(4).

(3) Chipped and ground curbside greenwaste shall be exempt from the requirements of paragraph (d)(2) provided that the moisture content is less than 30%, measured in accordance with subdivision (e) and the temperature or moisture content measurements are maintained on-site in accordance with subparagraph (d)(4)(E).

(4) A biomass power generation facility or a facility processing material as a biomass fuel for a biomass power generation facility shall be exempt from the requirements of paragraph (d)(2) provided that the material temperature is maintained at below 122 degrees Fahrenheit or the moisture content is less than 30%, measured in accordance with subdivision (e) and the temperature or moisture content measurements are maintained on-site

in accordance with subparagraph (d)(4)(E). This exemption shall not apply to material processed for purposes other than biomass fuel.

(5) The operator of a landfill or biomass power generation facility shall be exempt from the requirements of paragraph (d)(4), provided that the operator does not perform chipping and grinding of greenwaste on-site.

(Adopted January 10, 2003)

RULE 1133.2 EMISSION REDUCTIONS FROM CO-COMPOSTING OPERATIONS

(a) Purpose

The purpose of this rule is to reduce volatile organic compounds (VOC) and ammonia (NH_3) emissions from co-composting operations.

(b) Applicability

This rule applies to all new and existing co-composting operations.

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) AERATION SYSTEM is a system where air is forced through organic materials being composted, through the use of fans or blowers.

(2) AGRICULTURAL COMPOSTING is composting conducted in agricultural settings where the feedstock consists of wastes generated on-site by the production and processing of farm or agricultural products.

(3) ACTIVE CO-COMPOSTING is the phase of the composting process that begins when organic materials are mixed together for composting and lasts a minimum of 22 days.

(4) BASELINE EMISSIONS FACTORS are the non-controlled emission factors for co-composting operations for VOC and ammonia.

(5) BIOFILTRATION is a pollution control technology that removes and oxidizes VOC and ammonia through the action of bacteria and other microorganisms.

(6) CO-COMPOSTING is composting where biosolids and/or manure are mixed with bulking agents to produce compost. Co-composting includes both the active and curing phases of the composting process.

(7) COMPOST is a product resulting from the controlled biological decomposition of organic materials.

(8) COMPOSTING is a process in which solid organic waste materials are decomposed in the presence of oxygen under controlled conditions through the action of bacteria and other microorganisms.

(9) CURING is the phase of the co-composting process that begins immediately after the end of the active phase of composting and lasts 40 days or until the compost has a Solvita Maturity Index of 7 or the product respiration rate is below 10 milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry.

(10) ENCLOSURE is a completely walled, floored, and roofed structure or vessel.

(11) EXISTING CO-COMPOSTING OPERATIONS are all co-composting operations that have begun operations on or before the date of adoption of this rule.

(12) GREENWASTE is any organic waste material generated from gardening, agriculture, or landscaping activities including, but not limited to, grass clippings, leaves, tree and shrub trimmings, and plant remains.

(13) GREENWASTE COMPOSTING is composting of greenwaste by itself or greenwaste in combination with up to 20 percent manure, by volume.

(14) NEW CO-COMPOSTING OPERATIONS are co-composting operations that have not started operations as of the date of adoption of this rule.

(15) OPERATOR is the operator of a co-composting operation.

(16) SOLVITA MATURITY INDEX is an index that defines the stage where compost exhibits resistance to further decomposition, as tested by the Solvita Maturity Test®.

(17) START-UP is the first day of active co-composting operations at the facility.

(18) THROUGHPUT is the mass of biosolids, manure, and greenwaste in tons per year as received by the facility and processed through composting excluding recycled materials.

(19) WOODWASTE is lumber, and the woody material portion of mixed demolition wastes and mixed construction wastes.

(20) WOODWASTE COMPOSTING is composting of woodwaste by itself.

(d) Requirements

(1) Operators of new co-composting operations shall:

(A) Conduct all active co-composting within the confines of an enclosure which meets the following conditions:

(i) The inward face velocity of air through each opening in which air can enter the enclosure shall be a minimum of 100

feet per minute, unless the opening is equipped with a closure device that seals the opening in the event that the airflow direction changes.

(ii) The area of all openings in the enclosure through which air can enter the enclosure shall not exceed 2% of the surface area of the enclosure's four walls, floor, and ceiling.

(iii) The enclosure may be opened for brief time periods, not to exceed a total of 30 minutes per day for purposes of access or maintenance. These time periods do not need to be included in the face velocity determination or as an opening for the two percent criteria.

(iv) No measurable increase over background levels of ammonia or hydrocarbons outside the enclosure shall occur at any enclosure opening including any opening that occurs briefly for access or maintenance. A portable ammonia or hydrocarbon analyzer shall be used for these measurements. The portable ammonia analyzer shall be operated per manufacturer's instructions and calibrated with certified zero and 10 parts per million ammonia standards. The portable hydrocarbon analyzer shall be a flame ionization detector operated per manufacturer's instructions and calibrated with certified zero and 10 parts per million methane standards.

(B) Conduct all curing using an aeration system that operates under negative pressure for no less than 90 percent of its blower(s) operating cycle; and,

(C) Vent the exhaust from the enclosure and the aeration system to an emissions control system designed and operated with a control efficiency equal to or greater than 80 percent, by weight, for VOC emissions and 80 percent, by weight, for ammonia emissions.

(2) In lieu of complying with the requirements of paragraph (d)(1), operators of new co-composting operations may submit a compliance plan, for the approval of the Executive Officer, that demonstrates an overall emission reduction of 80 percent, by weight, for VOC emissions and 80 percent, by weight, for ammonia emissions from the baseline emission factors.

(3) Operators of existing co-composting operations shall submit a compliance plan, for the approval of the Executive Officer, that demonstrates an overall emission reduction of 70 percent, by weight, for VOC emissions and 70 percent, by weight, for ammonia emissions from the baseline emission factors.

(4) The baseline emission factors to be used under paragraphs (d)(2) and (d)(3) shall be 1.78 pounds of VOC per ton of throughput and 2.93 pounds of ammonia per ton of throughput. The Executive Officer may approve the use of operation-specific baseline emission factors in lieu of the baseline emission factors, if the operator requests the use of such baseline emission factors as part of the compliance plan submittal and demonstrates that the operation specific baseline emissions factors are representative of noncontrolled operations.

(5) The operator of a co-composting operation shall submit the compliance plan required pursuant to paragraphs (d)(2) or (d)(3) at least one year prior to the start of operations for new co-composting operations and at least one year prior to the effective date of compliance for existing co-composting operations.

(6) The control efficiency required under subparagraphs (d)(1)(C) and (j)(2)(A) for new co-composting operations shall be demonstrated by a source test conducted as part of the permit application process and every two years thereafter.

(7) The control efficiency required under subparagraph (j)(2)(A) for existing co-composting operations shall be demonstrated by a source test conducted on or before January 1, 2007, and every two years thereafter.

(8) Within 180 days after the effective date of compliance and every two years thereafter, the operator of a co-composting operation shall perform all necessary tests and provide a certification of compliance report that includes all source test data and all other applicable information to demonstrate compliance with the emission reduction requirement of paragraphs (d)(2) or (d)(3).

(e) Compliance Plan

(1) Compliance plans required under paragraphs (d)(2) and (d)(3) shall contain all the following elements:

(A) The name(s), address(es), and telephone number(s) of the person(s) responsible for the preparation, submittal and implementation of the compliance plan;

(B) The name, address, and telephone number(s) of the facility for which the compliance plan is being prepared;

(C) A description and process diagram of the co-composting operation;

(D) A complete description of the control method(s) that will be used at the co-composting operation to meet the requirements under paragraphs (d)(2) or (d)(3). The description shall be in sufficient detail to demonstrate compliance with paragraphs (d)(2) or (d)(3). The acceptable control methods include, but are not limited to:

(i) enclosure design or technology;

(ii) aeration system design and operation;

(iii) biofiltration;

(iv) scrubber;

(v) feedstock component optimization;

(vi) biosolids thermal pre-treatment;

(vii) enclosed material mixing and thermal stripping;

(viii) staged active pile construction and aeration;

(ix) feedstock ratio optimization;

(x) process controls;

(xi) best management practices; or,

(xii) any combination of the methods listed above; or,

(xiii) any other method approved by the Executive Officer, California Air Resources Board, and the United States Environmental Protection Agency.

(E) All data, calculations methodology, calculations, records, manufacturer specifications and all other information necessary to determine that the composting methods and control methods proposed in subparagraph (e)(1)(D) will achieve the required emission reductions.

(F) A methodology and calculations establishing the daily and annual VOC and ammonia emissions or projected emissions;

(G) If applicable, a source test protocol developed in accordance with the requirements of subdivision (g), to establish operation-specific baseline emission factors.

(H) A source testing protocol developed in accordance with the requirements of subdivision (g) to demonstrate compliance with the overall emission reductions specified in paragraph (d)(2) or (d)(3).

(I) An identification of all equipment needing permits to construct and operate.

(2) In evaluating the plan, the Executive Officer may require tests and sampling as necessary to determine the adequacy of the plan and the likelihood of compliance with the emission reduction requirements of paragraphs (d)(2) or (d)(3).

(3) The Executive Officer may approve operation-specific baseline emissions factors provided the baseline emissions factors are substantiated with source test data obtained in accordance with subdivision (g) of this rule and the composting method(s) and mixture is representative of normal operations.

(4) The Executive Officer shall provide interim approval of the compliance plan provided the operator submits all of the information required under paragraph (e)(1) and the Executive Officer verifies that, by design, the plan will meet the requirements of paragraph (d)(2) or (d)(3), as applicable.

(5) Following the interim approval of the plan, the Executive Officer shall approve the compliance plan provided the operator submits, no later than 180 days after the effective date of compliance, a certification of compliance report that includes all source test data, and the Executive Officer verifies that the emissions from the co-composting operations comply with the requirements of paragraphs (d)(2) or (d)(3), as applicable.

(6) The Executive Officer may impose conditions necessary to ensure that the co-composting operation complies with the compliance plan and all applicable AQMD rules.

(7) The Executive Officer may require the operator to maintain records consistent with the compliance plan necessary to demonstrate compliance with the plan.

(8) Compliance with the provisions of the approved plan does not exempt an operator from complying with the requirements of the California Health and Safety Code, or any other AQMD rule.

(f) Compliance Schedule

(1) The effective dates of compliance for paragraphs (d)(1), (d)(2), and (d)(3) of this rule shall be as follows:

(A) Upon start-up for new co-composting operations.

(B) January 1, 2007 for existing co-composting operations with a facility design capacity of 100,000 tons of throughput per year or more.

(C) January 1, 2008 for existing co-composting operations with a facility design capacity greater than or equal to 10,000 but less than 100,000 tons of throughput per year.

(D) January 1, 2009 for existing co-composting operations with a facility design capacity less than 10,000 tons of throughput per year.

(2) The Executive Officer shall extend for up to three years the compliance date for an existing co-composting operation which, at the time of rule adoption and at least one year prior to the effective compliance date, has less than 3 years remaining under a non-renewable conditional use permit beyond its effective compliance date. By June 1, 2003, the operator of such an operation must submit to the Executive Officer a copy of the conditional use permit and a letter from the responsible agency verifying that the permit is non-renewable and the date when the permit is expired.

(g) Testing Protocol

(1) The operator of a co-composting operation shall conduct all required source and laboratory tests in accordance with an Executive Officer approved test protocol developed in accordance to the guidelines provided in Attachment A of this rule.

(2) The operator of the co-composting operation shall use a District approved laboratory in accordance with the Attachment A of this rule.

(3) The following methods shall be used to determine compliance with this rule:

(A) SCAQMD Method 207.1 – Determination of Ammonia Emissions from Stationary Sources.

(B) SCAQMD Method 25.3 – Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources.

(C) SCAQMD Method 1.1 Sample and Velocity Traverses for Stationary Sources.

(D) SCAQMD Method 1.2 Sample and Velocity Traverses for Stationary Sources with Small Stacks or Ducts.

(E) SCAQMD Method 2.1 Determination of Stack Gas Velocity and Volumetric Flow Rate (S-Type Pitot Tube).

(F) SCAQMD Method 2.2 Direct Measurement of Gas Volume through Pipes and Small Ducts.

(G) SCAQMD Method 2.3 Determination of Gas Velocity and Volumetric Flow Rate From Small Stacks or Ducts.

(H) SCAQMD Method 4.1 Determination of Moisture Content in Stack Gases.

(h) Recordkeeping

The operator shall, at a minimum, maintain operation's records for a period of at least two years, or five years for facilities subject to Title V Permit Requirements, and make them available to the Executive Officer upon request.

(i) Plan Fees

Operators subject to a compliance plan submittal pursuant to paragraphs (d)(2) and (d)(3) shall be assessed, as applicable, filing and evaluation fees pursuant to Rule 306.

(j) Exemptions

(1) The provisions of subdivisions (d) through (i) of this rule shall not apply to agricultural composting operations, greenwaste composting operations, woodwaste composting operations, co-composting operations with a design capacity of less than 1,000 tons of throughput per year, and existing co-composting operations with a design capacity of less than 35,000 tons of throughput per year containing no more than 20 percent biosolids, by volume.

(2) Except for paragraphs (d)(6) and (d)(7), the provisions of subdivisions (d) through (i) shall not apply to new and existing co-composting operations that:

(A) Conduct co-composting operations using an aeration system that is vented to an emission control device with a control efficiency of

80 percent, by weight, for VOC emissions and 80 percent, by weight, for ammonia emissions; and,

(B) Are owned and operated by a municipality which composts waste generated within the jurisdiction of the municipality; and,

(C) Process less than 5,000 tons of biosolids or manure per year, combined.

ATTACHMENT A

GUIDELINES FOR THE DEVELOPMENT OF SOURCE TEST PROTOCOLS FOR VOC AND AMMONIA EMISSIONS FROM CO-COMPOSTING OPERATIONS

Source test protocols are to consist of testing plans to measure VOC and ammonia emissions due to the composting process. When used for determining the control device efficiency requirement specified for new facilities, the measurements shall consist of lb/hr measurements at the inlet and exhaust of the control device as well as a verification of the enclosure and are subject to the applicable requirements that follow. When used for determining the overall emission reduction requirements as compared to the baseline emissions factors, emissions are to be reported as % reductions for the active co-composting and curing phases in terms of pounds of emissions per ton of throughput (total raw material as received) and are subject to the applicable requirements that follow. The following are general requirements for all testing as well as specific requirements for the rule sections for each facility-specific protocol which must be prepared by the source test contractor and approved by the SCAQMD prior to testing.

1. *Alternative Test Methods*

   The reference test methods for ammonia, VOC, and flow rate cited in this guideline shall be used to determine compliance with this rule. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency. For the source test protocols, as defined as the manner in which the reference test methods are employed to obtain a measurement of the emissions, alternatives to the procedures cited in this guidelines may be used if they are determined to be equivalent and approved in writing by the Executive Officer.

2. *LAP Requirements*

   The sampling, analysis, and reporting shall be conducted by a laboratory/source test firm that has been approved under the SCAQMD Laboratory Approval Program (LAP) for the cited SCAQMD reference test methods, where LAP approval is available. For SCAQMD reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one year after the date that the LAP program becomes available for that SCAQMD reference test method.

3. Operating Conditions

The testing must be conducted under representative operating conditions with respect to seasonal conditions, compost composition, process throughput, processing of the materials, and pile geometries. The following operating parameters shall be recorded during testing and reported with the test results:

a) A thorough description of the composting process and process diagram of each processing area and including residence times in each of the composting process areas.
b) Process throughput as determined by facility's billing scales or other calibrated measuring device that represents the tons of the material as received that is present at the facility during the time of the testing. When using the District Baseline Emission Factors, the process throughput is to include all of the raw organic materials that are composted excluding material that is recycled from previous similar processing. Several throughputs may be necessary if applicable to the different processing areas or pile ages.
c) Compost composition (percent and type of materials i.e. biosolids, manure, greenwaste, etc…).
d) Age of all piles that were tested and all piles present at the facility during testing.
e) Detailed Dimensions of all piles so that a surface area for each pile type can be calculated.

4. Ammonia Sampling

SCAQMD Method 207.1 shall be used to obtain the ammonia samples from each source of emissions to be tested. When sampling from a flux chamber, a sample line of minimal length should be connected to a midget sampling train consisting of; two midget impingers each filled with 15 ml of 0.1N Sulfuric Acid, an empty bubbler, and a bubbler filled with tared silica gel. The samples shall be analyzed for ammonium content as ammonia by ion chromatography or ion selective electrode.

5. VOC Sampling

Duplicate integrated gas samples shall be taken from each source of emissions to be tested using SCAQMD Method 25.3. The Method 25.3 apparatus should be connected to sample directly inside the flux chamber or duct as applicable. Compost emissions are considered as water soluble sources where the 50 ppm applicability limit of Method 25.3 does not apply.

6. *Specific Requirements for Testing Co-Composting Operations Control Equipment Performance*

For surface types of emissions, such as with open faced biofilter exhausts, the exhaust emission rate shall be determined as in the following Section (8).

For a control device inlet or exhaust that is vented through a testable duct, the gas velocity within the duct shall be measured according to SCAQMD Methods 1.1, 2.1, and 3.1. The flow rate shall also be corrected to dry standard conditions using the moisture content as determined by SCAQMD Method 4.1. This flow rate may then be used to determine mass emission rates.

The overall destruction efficiency is calculated as follows:

$$ODE = 100 \times (1 - (E / I)) \quad \text{(Equation 1)}$$

Where:

ODE =	Overall Destruction Efficiency (%)
E =	Total Exhaust Emission Rate (lb/hr)
I =	Total Inlet Emission Rate to Control Device (lb/hr)

7. *Specific Requirements for Existing Co-Composting Operations and New Co-Composting Operations (Overall Emissions Reduction)*

A proposed measurement from the active and curing co-composting process, including but not limited to surface emissions of all piles where the materials are composted, and outlets (vents or surfaces) of control devices must be included in the protocol. If the emissions are vented to atmosphere from a vent stack such as from an otherwise uncontrolled aerated static pile or other vent to atmosphere, then the stack concentration, determined using methods specified in Sections (4) and (5) and flow rate measurements as specified in the previous Section (6) are required. From all surface types of emissions such as from compost piles and biofilter surfaces, the procedure for measuring surface emissions as in Section (8) is required. A measurement for fugitive emissions from aerated static pile surfaces must also be included.

Each type of pile must be tested. If the facility includes several identical piles, then only the largest pile need be tested. If the facility has more than three different age piles that are otherwise identical in processing and composition, then at a minimum three ages can be tested including newer, older, and middle aged piles. In any case, the surface area of all piles at the facility must be included in the determination of pile dimensions as recorded in Section (3).

If the facility elects to use an alternative to the District's baseline emissions factors, then a separate test must be conducted to establish this baseline on the uncontrolled composting operation (e.g., windrow method) with the same compost mix. Following the source test to determine an alternative baseline, facilities would have the option to use the District's baseline emissions factors or the alternative baseline emissions factors.

Reduction of emissions shall be calculated as follows:

$$\% \text{ Reduction} = 100 \times (1 - TE/B) \qquad \text{(Equation 2)}$$

Where:

TE = Total Active and Curing Phase Emissions (lb/ton throughput)
B = District Baseline Emissions or Alternative Baseline Emissions if Tested (lb/ton throughput)

8. Procedure for Measuring Surface Emissions

The procedure for measuring surface emissions such as the compost pile and biofilter surfaces that cannot be tested by conventional methods through a stack or duct, is a modified form of the procedures found in the US Environmental Protection Agency's (EPA) *Measurement of Gaseous Emission Rates from Land Surfaces Using an Emission Isolation Flux Chamber User's Guide* (EPA Guide). The modification to the procedures in the EPA Guide are specified in the following requirements.

The flux chamber encompasses a fixed surface area of 1.4 ft^2 and contains a sweep air system to obtain a homogeneous air sample by employing a mixing fan and sweep gas (10% He in air at 5 liters/min recommended). The sweep gas must contain a non reactive and non-present tracer such as the aforementioned 10% helium so that a correction for the contribution of the surface flow rate can be calculated.

A minimum of ten (10) sample locations or a sufficient number at each pile/surface tested must be obtained in order to achieve a representative sample of the surface emissions. These locations can be composited for each pile/surface to reduce testing costs. For example, for one hour sampling, ten (10) random positions on the pile should be tested for 6 minutes each. Alternatively, a lesser number of sample locations may be sampled provided that an evaluation of spatial variation demonstrates that the number of sample locations are sufficient.

The emissions must be reported in units of lb/hr-ft^2, lb/hr and lb/ton of throughput. The following calculations shall apply to the test results:

$$\text{Surface Flow Correction Factor} = C_t / C_s \qquad \text{(Equation 3)}$$

Where:

C_t = Concentration of Tracer in Sweep Gas
C_s = Concentration of Sweep Gas in Flux Chamber Sample

Corrected Flux Chamber Results (lb/hr-ft^2) = UFC x SFCF (Equation 4)

Where:

UFC = Uncorrected Flux Chamber Results (lb/hr-ft^2)
SFCF = Surface Flow Correction Factor

lb/hr = lb/hr-ft^2 x Total Compost Surface Area in Category (Equation 5)

lb/ton throughput = lb/hr x (24 hr/day) /PT (Equation 6)

Where:

PT = Process Throughput (total ton/day as received)

Total Emissions (lb/ton throughput) = $\sum$ P (Equation 7)

Where:

P = Active and curing sources of the Facility Compost Emissions (lb/ton throughput)

For a facility where not every age of pile was tested, the surface areas from each pile in the facility must be included and sorted into appropriate age and emissions categories from those that were measured.

(Adopted July 8, 2011)

RULE 1133.3 EMISSION REDUCTIONS FROM GREENWASTE COMPOSTING OPERATIONS

(a) Purpose

The purpose of this rule is to reduce fugitive emissions of volatile organic compounds (VOC) and ammonia occurring during greenwaste composting operations.

(b) Applicability

This rule applies to the operator of all new and existing greenwaste composting operations that produce active or finished compost from greenwaste by itself or greenwaste in combination with manure or foodwaste, unless otherwise exempted under subdivision (g) of this rule.

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) ACTIVE COMPOST means material that is in the process of being rapidly decomposed and is biologically unstable. Active compost is generating temperatures of at least 122 degrees Fahrenheit during decomposition. Active compost includes, but is not limited to, pathogen-reduced mulch.

(2) ACTIVE PHASE means the phase of the greenwaste composting process that begins when organic waste materials are mixed together for composting and lasts a minimum of 22 days under controlled conditions or until the compost has a Solvita Maturity Index of five or greater measured pursuant to subparagraph (e)(4)(A).

(3) BACKYARD COMPOSTING means composting conducted by a household including, but not limited to, single family residences, condominiums, duplexes, or apartment buildings.

(4) BASELINE EMISSION FACTORS mean the uncontrolled emission factors for greenwaste composting operations for VOC and ammonia.

(5) COMMUNITY COMPOSTING means composting conducted by a residential neighborhood association using feedstock generated within the residential neighborhood to produce compost for the neighborhood's use.

(6) COMPOSTING means a process in which solid organic waste materials are decomposed in the presence of oxygen through the action of bacteria and other microorganisms.

(7) COMPOST OVERS mean the oversized woody materials that do not decompose in a typical composting cycle and are screened out of finished product at the end of composting. Compost overs have been through the pathogen reduction process outlined in Title 14, Section 17868.3 of the California Code of Regulations.

(8) CURING PHASE means the phase of the greenwaste composting process that begins immediately after the end of the active phase of composting and lasts a minimum of 40 days or until the compost has a Solvita Maturity Index of seven or the product respiration rate is below ten milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry, pursuant to subparagraph (e)(4)(B).

(9) EXISTING GREENWASTE COMPOSTING OPERATIONS mean all greenwaste composting operations that have begun operations on or before July 8, 2011.

(10) FINISHED COMPOST means a humus-like material and/or compost overs that result from the controlled biological decomposition of organic waste materials and is biologically stable. Both the active and curing phases of the greenwaste composting are required to achieve this product.

(11) FOODWASTE means any pre- or post-consumer food scraps collected from the food service industry, grocery stores, or residential food scrap collection. Foodwaste also includes food scraps that are chipped and ground.

(12) GREENWASTE means any organic waste material generated from gardening, agriculture, or landscaping activities including, but not limited to, grass clippings, leaves, tree and shrub trimmings, and plant remains.

(13) GREENWASTE COMPOSTING means composting of greenwaste by itself or a mixture with foodwaste, or with up to 20 percent manure, per pile volume basis.

(14) NEW GREENWASTE COMPOSTING OPERATIONS mean greenwaste composting operations that have not started operations as of July 8, 2011.

(15) NURSERY COMPOSTING means composting conducted at a nursery to produce compost for on-site use.

(16) ORGANIC WASTE means any organic waste material that includes foodwaste, greenwaste, woodwaste, or manure, or a mixture thereof.

(17) OPERATOR means any person that operates a greenwaste composting operation.

(18) PILE means compostable material that is heaped together.

(19) RECREATIONAL FACILITY COMPOSTING means composting conducted at parks, arboretums and other recreational facilities using feedstock generated on-site to produce compost for on-site use.

(20) SOLVITA MATURITY INDEX means an index that defines the stage where compost exhibits resistance to further decomposition, as tested by the Solvita Maturity Test®.

(21) START-UP means the first day of active greenwaste composting operations at the facility.

(22) THROUGHPUT means the mass of manure, foodwaste, or greenwaste in tons per year as received by the facility and processed through composting, excluding recycled materials.

(23) TMECC means Test Methods for the Examination of Composting and Compost published by the US Composting Council Research and Education Foundation.

(24) WOODWASTE means lumber, and the woody material portion of mixed demolition and construction wastes. Woodwaste also includes large wood materials of curbside greenwaste or mixed greenwaste that is screened or unscreened, such as tree trimmings, branches, tree trunks, stumps, and limbs exceeding two inches in any dimension.

(d) Requirements

(1) Effective July 8, 2011, the operator of greenwaste composting operations shall comply with the following requirements:

(A) Chip or grind, as necessary, and use greenwaste for on-site composting as allowed by the Local Enforcement Agency.

(B) Use foodwaste for on-site composting within 48 hours of receipt or cover foodwaste with screened or unscreened finished compost until used, unless otherwise required by the Local Enforcement Agency.

(2) Effective upon start-up for new greenwaste composting operations and effective November 8, 2011 for existing greenwaste composting

operations, the operator of greenwaste composting operations processing greenwaste only or up to 20 percent manure, by volume, or up to 5,000 tons per year of foodwaste throughput shall comply with the following requirements:

(A) Cover each active phase pile with screened or unscreened finished compost within twenty-four hours of initial pile formation such that the top is at least six inches thick and the pile shall not be turned for the first seven days of the active phase of composting, unless subparagraph (d)(2)(D) applies.

(B) For the first fifteen days after initial pile formation for the active phase period of composting, within six hours before turning, apply water as necessary to the surface area of each active phase pile such that the top one half of the pile is wet at a depth of at least three inches. Alternatively, the operator may apply water during turning using a windrow turner which is equipped with water spraying technology during the entire windrow turning process.

(i) For the purpose of this subparagraph, "wet" shall be determined by means of a squeeze ball test or an alternative approved by the Executive Officer, California Air Resources Board, and the United States Environmental Protection Agency. The ball test shall be conducted by taking a sample of the compostable material from the top half of the pile, at least three inches below the outer surface. The material should be squeezed into a ball using hand pressure and wearing a protective glove. There should be at least enough water to form a ball when compressed, but the ball may break when tapped. If the ball crumbles upon release of the hand pressure, apply additional water to the windrow prior to turning until the material passes the ball test.

(C) If a rain event occurs prior to watering the pile within six hours before turning and the pile is wet to a depth of three inches, the operator may turn the pile without adding additional water. If the top half of the pile is dry to the three inch depth, apply additional water to the pile pursuant to subparagraph (d)(2)(B).

(D) If the pile needs to be turned within the first seven days for managing temperature or pathogen reduction pursuant to Title 14 Division 7, Chapter 3.1, Section 17868.3 of the California Code of Regulations, the operator does not need to re-apply the screened or unscreened finished compost cover and shall apply water pursuant to subparagraph (d)(2)(B) for the first fifteen days of the active phase.

(E) The operator may implement an alternate mitigation measure that will be based on a test protocol approved by the Executive Officer, California Air Resources Board, and the United States Environmental Protection Agency and that demonstrates emission reductions by at least 40 percent, by weight, for VOC and emission reductions by at least 20 percent, by weight, for ammonia for combined screened or unscreened finished compost cover and water application.

(3) Effective July 8, 2011, the operator of greenwaste composting operations processing greater than 5,000 tons per year of foodwaste throughput shall comply with the following requirements, for the purpose of regulatory compliance:

(A) Any active phase of composting containing more than 10 percent foodwaste, by weight, shall be conducted using an emission control device designed and operated with an overall system control efficiency of at least 80 percent, by weight, each for VOC and ammonia emissions.

(B) The operator may implement a control alternative if the alternative is approved by the Executive Officer, California Air Resources Board, and the United States Environmental Protection Agency, to achieve VOC and ammonia reductions that are greater than or equal to the reductions required pursuant to subparagraph (d)(3)(A).

(C) For new greenwaste composting operations that intend to compost greater than 5,000 tons per year of foodwaste throughput, a permit shall be obtained for an emission control device, as specified in subparagraph (d)(3)(A) or (d)(3)(B), prior to construction.

The annual throughput calculation may exclude any non-putrescible materials, including, but not limited to paper, woody, other low-water,

high cellulose materials, and non-compostable contaminants and green waste that are separated either before or after composting and shipped off-site for disposal provided they are quantified and appropriate records are maintained for.

(4) No later than October 10, 2011, for existing greenwaste composting operations that, as of July 8, 2011, process or plan to process greater than 5,000 tons per year of foodwaste throughput, the operator shall file a permit application for an emission control device and fully implement the emission control device in accordance with subparagraphs (d)(3)(A) or (d)(3)(B) within six months upon approval of the permit application.

(5) The overall control efficiency required in subparagraph (d)(3)(A) shall be demonstrated by a source test within three months after implementation of the emission control device, or within nine months of permit approval, whichever occurs sooner, and every three years thereafter. For the purpose of this rule, the baseline emission factors to be used shall be 4.25 pounds of VOC per ton of throughput and 0.46 pounds of ammonia per ton of throughput for the active phase of composting only. The Executive Officer may approve the use of alternate baseline emission factors, if the operator demonstrates through the approved source test that alternate baseline emission factors are representative of uncontrolled operations for that facility

(6) All emission control devices shall be installed, operated, and maintained in accordance with the manufacturer's operation and maintenance manual or other similar written materials supplied by the manufacturer or distributor of such equipment to ensure that the system remains in proper operating conditions. Such documentation shall be made available to the Executive Officer upon request.

(7) All records, including application of screened or unscreened finished compost and water, operation and maintenance of an emission control device, and source tests, shall be kept and maintained at the facility pursuant to subdivision (f).

(e) Test Methods and Protocol

(1) For a greenwaste composting operation subject to paragraphs (d)(3) through (d)(5), the operator shall conduct all required source and laboratory tests in accordance with an Executive Officer approved test

protocol developed in accordance with the guidelines provided in Attachment A of this rule.

(2) For a greenwaste composting operation subject to paragraphs (d)(3) through (d)(5), the operator shall use a District approved laboratory in accordance with the Attachment A of this rule.

(3) The following methods shall be used to determine compliance with this rule:

(A) SCAQMD Method 207.1 – Determination of Ammonia Emissions from Stationary Sources.

(B) SCAQMD Method 25.3 – Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources.

(C) SCAQMD Method 1.1 – Sample and Velocity Traverses for Stationary Sources.

(D) SCAQMD Method 1.2 – Sample and Velocity Traverses for Stationary Sources with Small Stacks and Ducts.

(E) SCAQMD Method 2.1 – Determination of Stack Gas Velocity and Volumetric Flow Rate (S-Type Pitot Tube).

(F) SCAQMD Method 2.2 – Direct Measurement of Gas Volume through Pipes and Small Ducts.

(G) SCAQMD Method 2.3 – Determination of Gas Velocity and Volumetric Flow Rate from Small Stacks or Ducts.

(H) SCAQMD Method 4.1 – Determination of Moisture Content in Stack Gases.

(4) Triplicate samples shall be taken for the following test methods:

(A) TMECC 05.08-E – Solvita Maturity Index (April 7, 2002).

(B) TMECC 05.08-A – Specific Oxygen Uptake Rate (April 7, 2002).

(f) Recordkeeping

Records shall be kept in a format approved by the Executive Officer. All operational records and information recorded pursuant to the provisions of this rule shall be maintained for the prior five years of operation, with the most recent two years retained at the facility, which shall be immediately available upon request by the Executive Officer. The remaining three years of records shall be made available to the Executive Officer within one week of request.

(g) Exemptions

(1) Composting facilities subject to Rule 1133.2 – Emission Reductions from Co-Composting Operations, are exempt from the provisions of this rule.

(2) If the operator of any greenwaste composting operation installs an emission control device, in accordance with paragraphs (d)(3) through (d)(6), the provisions of paragraph (d)(2) do not apply.

(3) The following types of facilities and operations are exempt from the requirements of this rule, provided that the operation is not subject to the Local Enforcement Agency Notification or Permit regulations pursuant to Title 14 Division 7, Chapter 3.1, Section 17857.1 of the California Code of Regulations:

(A) Community composting;

(B) Nursery composting;

(C) Backyard composting; and

(D) Recreational facility composting.

ATTACHMENT A

GUIDELINES FOR THE DEVELOPMENT OF SOURCE TEST PROTOCOLS FOR VOC AND AMMONIA EMISSIONS FROM GREENWASTE COMPOSTING OPERATIONS

Source test protocols are to consist of testing plans to measure VOC and ammonia emissions due to the composting process. When used for determining the control device efficiency requirement specified for new and existing facilities, the measurements shall consist of lb/hr measurements at the inlet and exhaust of the control device and are subject to the applicable requirements that follow. When used for determining the overall emission reduction requirements as compared to the baseline emissions factors, emissions are to be reported as % reductions for the active phase composting in terms of pounds of emissions per ton of throughput (total raw material as received) and are subject to the applicable requirements that follow. The following are general requirements for all testing as well as specific requirements for the rule sections for each facility-specific protocol which must be prepared by the source test contractor and approved by the SCAQMD prior to testing.

1. *Alternative Test Methods*

   The reference test methods for ammonia, VOC, and flow rate cited in this guideline shall be used to determine compliance with this rule. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency. For the source test protocols, as defined as the manner in which the reference test methods are employed to obtain a measurement of the emissions, alternatives to the procedures cited in this guidelines may be used if they are determined to be equivalent and approved in writing by the Executive Officer.

2. *LAP Requirements*

   The sampling, analysis, and reporting shall be conducted by a laboratory/source test firm that has been approved under the SCAQMD Laboratory Approval Program (LAP) for the cited SCAQMD reference test methods, where LAP approval is available. For SCAQMD reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one year after the date that the LAP program becomes available for that SCAQMD reference test method.

3. *Operating Conditions*

   The testing must be conducted under representative operating conditions with respect to seasonal conditions, compost composition, process throughput,

processing of the materials, and pile geometries. The following operating parameters shall be recorded during testing and reported with the test results:

a) A thorough description of the composting process and process diagram of each processing area and including residence times in each of the composting process areas.
b) Process throughput as determined by facility's billing scales or other calibrated measuring device that represents the tons of the material as received that is present at the facility during the time of the testing. When using the District Baseline Emission Factors, the process throughput is to include all of the raw organic materials that are composted excluding material that is recycled from previous similar processing. Several throughputs may be necessary if applicable to the different processing areas or pile ages.
c) Compost composition (percent and type of materials i.e. manure, greenwaste, foodwaste, etc…).
d) Age of all piles that were tested and all piles present at the facility during testing.
e) Detailed dimensions of all piles or the biofilter so that a surface area for each pile type can be calculated.
f) A description of the biofilter system, including a process diagram and type of biofilter media.
g) Age of the biofilter media.
h) A thorough description of the humidification and moisture maintenance system for the biofilter.
i) Identification of peripheral monitoring equipment, such as moisture or temperature sensors, and data from them during testing.

4. Ammonia Sampling

SCAQMD Method 207.1 shall be used to obtain the ammonia samples from each source of emissions to be tested. When sampling from a flux chamber, a sample line of minimal length should be connected to a midget sampling train consisting of; two midget impingers each filled with 15 ml of 0.1N Sulfuric Acid, an empty bubbler, and a bubbler filled with tared silica gel. The samples shall be analyzed for ammonium content as ammonia by ion chromatography or ion selective electrode.

5. VOC Sampling

Duplicate integrated gas samples shall be taken from each source of emissions to be tested using SCAQMD Method 25.3. The Method 25.3 apparatus should be connected to sample directly inside the flux chamber or duct as applicable. Compost emissions are considered as water soluble sources where the 50 ppm applicability limit of Method 25.3 does not apply.

6. Specific Requirements for Testing Greenwaste Composting Operations Control Equipment Performance

For surface types of emissions, such as with open faced biofilter exhausts, the exhaust emission rate shall be determined as in the following Section (8).

For a control device inlet or exhaust that is vented through a testable duct, the gas velocity within the duct shall be measured according to SCAQMD Methods 1.1, 2.1, and 3.1. The flow rate shall also be corrected to dry standard conditions using the moisture content as determined by SCAQMD Method 4.1. This flow rate may then be used to determine mass emission rates.

The overall destruction efficiency is calculated as follows:

$$ODE = 100 \times (1 - (E / I)) \quad \text{(Equation 1)}$$

Where:

ODE = Overall Destruction Efficiency (%)
E = Total Exhaust Emission Rate (lb/hr)
I = Total Inlet Emission Rate to Control Device (lb/hr)

7. Specific Requirements for Existing Greenwaste Composting Operations and New Greenwaste Composting Operations (Overall Emissions Reduction)

A proposed measurement from the active greenwaste composting process, including but not limited to surface emissions of all piles where the materials are composted, and outlets (vents or surfaces) of control devices must be included in the protocol. If the emissions are vented to atmosphere from a vent stack such as from an otherwise uncontrolled aerated static pile or other vent to atmosphere, then the stack concentration, determined using methods specified in Sections (4) and (5) and flow rate measurements as specified in the previous Section (6) are required. From all surface types of emissions such as from compost piles and biofilter surfaces, the procedure for measuring surface emissions as in Section (8) is required. A measurement for fugitive emissions from aerated static pile surfaces must also be included.

Each type of pile must be tested. If the facility includes several identical piles, then only the largest pile need be tested. If the facility has more than three different age piles that are otherwise identical in processing and composition, then at a minimum three ages can be tested including newer, older, and middle aged piles. In any case, the surface area of all piles at the facility must be included in the determination of pile dimensions as recorded in Section (3).

If the facility elects to use an alternative to the District's baseline emissions factors, then a separate test must be conducted to establish this baseline on the

uncontrolled composting operation (e.g., windrow method) with the same compost mix. Following the source test to determine an alternative baseline, facilities would have the option to use the District's baseline emissions factors or the alternative baseline emissions factors.

Reduction of emissions shall be calculated as follows:

% Reduction = 100 x (1-TE/B) (Equation 2)

Where:

TE = Total Active and Curing Phase Emissions (lb/ton throughput)
B = District Baseline Emissions or Alternative Baseline Emissions if Tested (lb/ton throughput)

8. Procedure for Measuring Surface Emissions

The procedure for measuring surface emissions such as the compost pile and biofilter surfaces that cannot be tested by conventional methods through a stack or duct, is a modified form of the procedures found in the US Environmental Protection Agency's (EPA) *Measurement of Gaseous Emission Rates from Land Surfaces Using an Emission Isolation Flux Chamber User's Guide* (EPA Guide). The modification to the procedures in the EPA Guide is specified in the following requirements.

The flux chamber encompasses a fixed surface area of 1.4 ft^2 and contains a sweep air system to obtain a homogeneous air sample by employing a mixing fan and sweep gas (10% He in air at 5 liters/min recommended). The sweep gas must contain a non reactive and non-present tracer such as the aforementioned 10% helium so that a correction for the contribution of the surface flow rate can be calculated.

A minimum of ten (10) sample locations or a sufficient number at each pile/surface tested must be obtained in order to achieve a representative sample of the surface emissions. These locations can be composited for each pile/surface to reduce testing costs. For example, for one hour sampling, ten (10) random positions on the pile should be tested for 6 minutes each. Alternatively, a lesser number of sample locations may be sampled provided that an evaluation of spatial variation demonstrates that the number of sample locations is sufficient.

The emissions must be reported in units of lb/hr-ft^2, lb/hr and lb/ton of throughput. The following calculations shall apply to the test results:

Surface Flow Correction Factor = C_t / C_s (Equation 3)

Where:

C_t = Concentration of Tracer in Sweep Gas
C_s = Concentration of Sweep Gas in Flux Chamber Sample

Corrected Flux Chamber Results (lb/hr-ft^2) = UFC x SFCF (Equation 4)

Where:

UFC = Uncorrected Flux Chamber Results (lb/hr-ft^2)
SFCF = Surface Flow Correction Factor

lb/hr = lb/hr-ft^2 x Total Compost Surface Area in Category (Equation 5)

lb/ton throughput = lb/hr x (24 hr/day) /PT (Equation 6)

Where:

PT = Process Throughput (total ton/day as received)

Total Emissions (lb/ton throughput) = $\sum$ P (Equation 7)

Where:

P = Active and curing sources of the Facility Compost Emissions (lb/ton throughput)

For a facility where not every age of pile was tested, the surface areas from each pile in the facility must be included and sorted into appropriate age and emissions categories from those that were measured.

3/10/98

(Adopted August 4, 1989)(Amended December 7, 1995)
(Amended April 11, 1997)(Amended August 8, 1997)

RULE 1134. EMISSIONS OF OXIDES OF NITROGEN FROM STATIONARY GAS TURBINES

(a) Applicability

The provisions of this rule shall apply to all existing stationary gas turbines, 0.3 megawatt (MW) and larger, as of August 4, 1989.

(b) Definitions

(1) CHEMICAL PROCESSING GAS TURBINE UNIT is a gas turbine unit that vents its exhaust gases into the operating stream of a chemical process.

(2) COGENERATION CYCLE GAS TURBINE UNIT is a gas turbine unit that operates both for the simultaneous production of shaft work and for the recovery of useful thermal energy from the exhaust gases or waste steam as defined by Section 25134 of the California Public Resources Code.

(3) COMBINED CYCLE GAS TURBINE UNIT is a gas turbine unit that operates both for the production of electrical energy from shaft work and the useful energy produced from heat recovered from its exhaust gases.

(4) EMERGENCY STANDBY GAS TURBINE UNIT is a gas turbine unit that operates only as a mechanical or electrical power source for a facility when the primary power source has been rendered inoperable, except due to power interruption pursuant to an interruptible power supply agreement. This does not include utility company electrical power plant units.

(5) EMISSION CONTROL PLAN is a plan that shall contain at a minimum District permit or identification number; name of gas turbine manufacturer; model designation; rated brake horsepower; heat rate (BTU/KW-HR), corrected to the HHV for each type of fueling (liquid/gas); type of liquid fuel and/or type of gaseous fuel; hours of operation in the previous one-year period; fuel consumption (cubic feet of gas or gallons of liquid) for the previous one-year period; and a list of all gas turbine units required to be controlled identifying the type of emission

control to be applied to such gas turbine units along with documentation showing existing emissions of NO_x and CO.

(6) EXHAUST AFTER-TREATMENT means a control method for the post-combustion reduction of NOx emissions, such as selective catalytic reduction (SCR).

(7) EXISTING GAS TURBINE UNIT is a stationary gas turbine unit that met the following criteria prior to August 4, 1989:

(A) Had been issued a valid permit to construct or operate by the District, or

(B) Was in operation pursuant to the provisions of District Rule 219(b)(1).

(8) HHV - HIGHER HEATING VALUE OF FUEL.

(9) LHV - LOWER HEATING VALUE OF FUEL.

(10) PEAKING GAS TURBINE UNIT is a gas turbine unit that is used intermittently to produce energy on a demand basis.

(11) PIPELINE GAS TURBINE UNIT is a stationary gas turbine unit used to transport gases or liquids in a pipeline.

(12) POWER AUGMENTATION is the increase in the gas turbine shaft output and/or the decrease in gas turbine fuel consumption by the addition of energy recovered from exhaust heat.

(13) RATING OF A GAS TURBINE UNIT is the continuous MW (megawatt) rating or mechanical equivalent by a manufacturer for gas turbine unit(s) without power augmentation.

(14) SEWAGE DIGESTER GAS is any gas derived from anaerobic decomposition of organic sewage.

(15) SOUTHEAST DESERT AIR BASIN (SEDAB) means the portion of the air basin containing specific desert portions of Los Angeles, Riverside and San Bernardino counties, as defined in Title 17, California Code of Regulations, Section 60109, within the jurisdiction of the District.

(16) STATIONARY GAS TURBINE UNIT is any gas turbine unit that is gas and/or liquid fueled with or without power augmentation. This gas turbine unit is either attached to a foundation at a facility or is portable equipment operated at a specific facility for more than 90 days in any 12-month period. Two or more gas turbines units powering one shaft shall be treated as one gas turbine unit.

(17) THERMAL STABILIZATION PERIOD is the two-hour start up time necessary for NOx control purposes in cogeneration cycle, combined cycle, or any other applicable stationary gas turbine units.

(c) Emissions Limitations

(1) The operator of any stationary gas turbine unit shall not operate such unit under load conditions, excluding the thermal stabilization period or other time period specified in the Permit to Construct or the Permit to Operate issued prior to August 4, 1989, which result in the discharge of oxides of nitrogen (NOx) emissions, directly or indirectly, into the atmosphere at concentrations in excess of the following as measured pursuant to subdivision (e):

$$Compliance\ Limit = Reference\ Limit \times \frac{EFF}{25\%}$$

Where:

Compliance Limit = allowable NOx emissions (ppm by volume).

Reference Limit = the NOx emission limit (ppm by volume) is corrected to 15 percent oxygen on a dry basis, and averaged over 15 consecutive minutes. These limits for various megawatt ratings (continuous rating by the manufacturer without power augmentation) are as follows:

REFERENCE NOx LIMITS, PPM

Unit Size Megawatt (MW) Rating	Effective 12-31-95
0.3 to Less Than 2.9 MW	25
2.9 to Less Than 10.0 MW	9
2.9 to Less Than 10.0 MW No SCR	15
10.0 MW and Over	9
10.0 MW and Over No SCR	12

60 MW and Over Combined Cycle No SCR	15
60 MW and Over Combined Cycle	9
	Effective 4/11/97
2.9 to Less Than 10.0 MW Utilizing Fuel Containing a Minimum of 60% Sewage Digester Gas by Volume on a Daily Average	25

And,

$$EFF = \frac{3413 \times 100\%}{\text{Actual Heat Rate at HHV of Fuel (BTU/KW-HR)}}$$

or,

$$EFF = \textit{(Manufacturer's Rated Efficiency at LHV)} \times \frac{LHV}{HHV}$$

or

EFF = the demonstrated percent efficiency of the gas turbine unit only as calculated without consideration of any downstream energy recovery from the actual heat rate, (BTU/KW HR) or 1.34 BTU/HP; corrected to the HHV (higher heating value) of the fuel, as measured at peak load for that facility; or the manufacturer's continuous rated percent efficiency (manufacturer's rated efficiency) of the gas turbine unit after correction from LHV (lower heating value) to the HHV of the fuel, whichever efficiency is higher. The value of EFF shall not be less than 25 percent. Gas turbine units with lower efficiencies will be assigned a 25 percent efficiency for this calculation.

(2) The operator of any existing gas turbine unit subject to this rule shall also be subject to Regulation XIII if carbon monoxide (CO) emissions increase as a result of the application of NOx controls.

(d) Monitoring and Source Testing

The operator of any stationary gas turbine unit subject to the provisions of this rule shall perform the following actions:

(1) For cogeneration and combined cycle gas turbine units 2.9 MW and larger (continuous rating by the manufacturer without power augmentation), install, operate, and maintain in calibration a continuous in-stack NOx and oxygen monitoring system which meets the requirements of 40 CFR Part 60, Appendix B, Spec. 2, for NOx, Spec. 3 for oxygen (except the alternative RA procedures for Spec. 2 shall not apply), the 2 and 24 -hour calibration spec. of Rule 218, and 40 CFR Part 60, Appendix F to demonstrate compliance with the emission limits of this rule. The continuous emissions monitoring system shall have data gathering and retrieval capability which meets the reporting requirements of 40 CFR part 60.7(c), 60.7(d), and 60.13. This system shall include equipment that measures and records the following:

(A) Flow rate of liquids or gases and the ratio of water or steam to fuel added to the combustion chamber or to the exhaust for the reduction of NOx emissions, as applicable.

(B) Elapsed time of operation.

(2) Source Testing

(A) Provide source test information regarding the gas turbine unit's exhaust gas NOx concentration, and the demonstrated percent efficiency (EFF), or the manufacturer's rated EFF, if the Executive Officer determines that it is representative of the unit's EFF, and the carbon monoxide concentration as specified pursuant to paragraph (e)(1). NOx and carbon monoxide concentrations shall be in ppm by volume, corrected to 15 percent oxygen on a dry basis.

(B) Source Test Frequency

(i) Units emitting 25 tons or more of NOx per calendar year shall be source tested, at least once every 12 months.

(ii) All other existing units shall be source tested within 90 days after every 8,400 hours of operation.

(e) Test Methods

The following may be used by the Executive Officer to verify the concentrations of NOx, CO and oxygen subject to the provisions of this rule. Emissions determined to exceed any limits established by this rule through either of the following shall constitute a violation of this rule.

(1) District Test Methods 3.1, 7.1, 10.1 and 100.1 and EPA Test Method 10 or any method deemed to be equivalent by the Executive Officer and approved by CARB and EPA.

(2) Data obtained from a continuous emissions monitoring system, which is installed and properly operated according to paragraph (d)(1) of this rule and as approved by the Executive Officer.

(f) Recordkeeping

The facility operator shall comply with the following provisions:

(1) All records shall be maintained at the facility for a period of two years and made available to District staff upon request.

(2) Maintain a gas turbine operating log that includes, on a daily basis, the actual Pacific Standard Time start-up and stop time, total hours of operation; type and quantity of fuel used (liquid/gas), cumulative hours of operation to date for the calendar year; and if applicable the cumulative hours of operation since the last source test required by subparagraph (d)(2)(A).

(3) A monthly summary of emissions pursuant to paragraph (d)(1) shall be submitted to the District on or before the last day of the following calendar month.

(4) The results of source tests shall be submitted to the District in a form and manner as specified by the Executive Officer within 30 days after testing is completed.

(5) Any person using an emission control system as a means of complying with this rule shall maintain daily records of system operation and maintenance which will demonstrate continuous operation and compliance of the emission control device during periods of emission producing activities.

(g) Exemptions

Any person seeking to qualify for any one of the following exemptions has the burden of proving its existing gas turbine unit meets the applicable specified criteria.

(1) All provisions of this rule shall not apply to the following:

(A) Laboratory gas turbine units used in research and testing.

(B) Gas turbine units operated exclusively for fire fighting and/or flood control.

(C) Chemical processing gas turbine units.

(D) All existing pipeline gas turbine units located in the Southeast Desert Air Basin (SEDAB).

(2) The provisions of subdivisions (c) and (d), and paragraphs (f)(3), (f)(4) and (f)(5) shall not apply to the following:

(A) Emergency standby and peaking gas turbine units demonstrated to operate less than 200 hours per calendar year, which have installed and maintained in proper operation a non-resettable engine hour meter.

(B) All existing gas turbine units located in the Southeast Desert Air Basin (SEDAB) which are rated below 4 MW and operate less than 877 hours per year.

(C) All existing gas turbine units located on San Clemente Island which are rated below 4 MW and operate less than 877 hours per year.

However, if the hour-per-year limit is exceeded, the exemption shall be automatically and permanently withdrawn. The operator of any stationary gas turbine exempt under this subparagraph must notify the Executive Officer within seven days if the hour-per-year limit is exceeded. Within 30 days after the date the hour-per-year limit is exceeded, the operator must submit a permit application for modification to equipment to meet the applicable compliance limit within 24 months of the date the hour-per-year limit is exceeded. Included with this permit application, the operator must submit an emission control plan including a schedule of increments of progress for the installation of the required control equipment. This plan and schedule shall be subject to the review and approval of the Executive Officer.

1/28/92

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1/28/92

(Adopted August 4, 1989)(Amended December 21, 1990)(Amended July 19, 1991)

RULE 1135. EMISSIONS OF OXIDES OF NITROGEN FROM ELECTRIC POWER GENERATING SYSTEMS

(a) Applicability

This rule applies to electric power generating systems.

(b) Definitions

(1) ADVANCED COMBUSTION RESOURCE means a combustion resource, within or outside the District, irrespective of ownership, capable of generating electricity using cogeneration; combined cycle gas turbines; intercooled, chemically recuperated, or other advanced gas turbines; and other advanced combustion processes.

(2) ALTERNATIVE RESOURCE means a resource, within or outside the District, irrespective of ownership, capable of generating electricity in a non-conventional manner, including, but not limited to: solar; geothermal; wind; fuel cells; electricity conservation; and electricity demand-side management measures.

(3) APPROVED ALTERNATIVE OR ADVANCED COMBUSTION RESOURCE means an alternative resource or advanced combustion resource which is approved by the Executive Officer. The Executive Officer shall disapprove an alternative resource or an advanced combustion resource unless and until it:

(A) Displaces boiler capacity existing in the District on or after July 19, 1991; and

(B) Emits NO_x at no more than 0.10 pound per net megawatt-hours (MWH) on a daily average basis if the resource is located within the District, or no more than 0.05 pound per net MWH on a daily average basis if the resource is located outside the District; for cogeneration facilities, the daily NO_x emission per MWH shall be calculated after deducting 0.013 pound of NO_x for each million BTU of useful thermal energy produced which is not used for electric power generation; and

(C) Commences operation on or after July 19, 1991; and

(D) Is proven to the satisfaction of the Executive Officer that the net megawatt-hours obtained or conserved are real, quantifiable, and enforceable.

(4) ALTERNATIVE RESOURCE OR ADVANCED COMBUSTION RESOURCE BREAKDOWN means an unscheduled condition during which no net electric power is obtained from an approved alternative or advanced combustion resource for 24 continuous hours or more.

(5) BOILER means any combustion equipment in the District fired with liquid and/or gaseous fuel, which is primarily used to produce steam that is expanded in a turbine generator used for electric power generation. This includes only units existing on July 19, 1991, which are owned or operated by any one of the following: Southern California Edison, Los Angeles Department of Water and Power, City of Burbank, City of Glendale, and City of Pasadena, or any of their successors.

(6) COGENERATION FACILITY means equipment used to produce electricity and other forms of useful thermal energy through the sequential use of energy, as specified in Public Resources Code Section 25134.

(7) DAILY means a calendar day starting at 12 midnight and continuing through to the following 12 midnight hour.

(8) DISPLACE means either of the following:

(A) The concurrent and enforceable reduction of equivalent boiler capacity from one or more designated boilers in the District, such that the combined electric power obtained from approved alternative or advanced combustion resources and designated boilers does not exceed the maximum permitted capacity of the designated boilers, on an hourly average basis; or

(B) The reduction of boiler capacity, equivalent to the maximum electric power obtained from the approved alternative or advanced combustion resource, from one or more boilers in the District for not less than six months as specified in the Permit to Operate. The owner or operator of the boilers may apply to the Executive Officer for restoration of the displaced capacity in the Permit to Operate, which shall be approved upon:

(i) Disapproval of the previously approved alternative or advanced combustion resource which was based on such displaced capacity; and

(ii) Evidence of compliance with all provisions of this rule after the restoration of the displaced capacity.

During an alternative or advanced combustion resource breakdown, the associated displaced boiler capacity may be utilized up to a maximum of 120 hours in any calendar month, provided the Executive Officer is notified prior to such utilization.

(9) DISTRICT-WIDE DAILY LIMITS means the daily emissions limits applicable to any electric power generating system, consisting of an emissions cap and/or an emissions rate.

(A) EMISSIONS CAP is expressed in pounds of NO_x and calculated as the total daily NO_x emissions in pounds from all boilers, replacement units, and approved alternative or advanced combustion resources in the District.

(B) EMISSIONS RATE is expressed in pounds of NO_x per Megawatt-Hour and calculated as the total daily NO_x emissions in pounds from all boilers, replacement units, and approved alternative or advanced combustion resources in the District, divided by the total daily net electric power generated and/or obtained in Megawatt-Hours from all boilers and replacement units in the District and approved alternative or advanced combustion resources within or outside the District. For the purposes of this calculation, 70 percent, or higher if proven to the satisfaction of the Executive Officer, of the net Megawatt-Hours obtained from an approved alternative or advanced combustion resource outside the District shall be used. NO_x emissions during start-ups and shutdowns, up to a maximum of 12 hours for each event, shall not be included in the determination of the emissions rate for an electric power generating system if five or fewer boilers are in operation during this period.

NO_x emissions from approved cogeneration facilities shall be calculated after deducting 0.013 pound of NO_x for each million BTU of useful thermal energy produced which is not used for electric power generation.

(10) ELECTRIC POWER GENERATING SYSTEM means all boilers, replacement units and approved alternative or advanced combustion resources owned or operated by, and approved alternative or advanced combustion resources and replacement units under contract to sell power to, any one of the following: Southern California Edison, Los Angeles Department of Water and Power, City of Burbank, City of Glendale, City of Pasadena, or any of their successors.

(11) FORCE MAJEURE NATURAL GAS CURTAILMENT means an interruption in natural gas service due to unforeseeable failure, malfunction, or natural disaster, not resulting from an intentional or negligent act or omission on the part of the owner or operator of a boiler or a replacement unit, or a supply restriction resulting from a California Public Utilities Commission priority allocation system, such that the daily fuel needs of a boiler or a replacement unit cannot be met with the natural gas available.

(12) NO_x EMISSIONS means the sum of nitric oxides and nitrogen dioxides emitted, collectively expressed as nitrogen dioxide emissions.

(13) REPLACEMENT UNIT for the purpose of this rule means equipment within an electric power generating system, irrespective of ownership, which permanently replaces boiler capacity existing on July 19, 1991 in the same system in the District, and meets the requirements of Best Available Control Technology (BACT), as determined by the Executive Officer. If the replacement unit's electric power output in net megawatts exceeds the permitted net megawatt capacity of the boiler(s) replaced, only the electric power generation and NO_x emissions prorated to the permitted net megawatt capacity of the boiler(s) replaced shall be subject to the provisions of this rule.

(14) START-UP OR SHUTDOWN is any one of the following events:

(A) START-UP is the time period during which a boiler is heated to its normal operating temperature range from a cold or ambient

temperature, or from a hot standby condition where no net electric power is produced for at least 8 hours.

(B) SHUTDOWN is the time period during which a boiler is allowed to cool from its normal operating temperature range to a cold or ambient temperature, or to a hot standby condition where no net electric power is produced for at least 8 hours.

(15) USEFUL THERMAL ENERGY means thermal energy used in any industrial or commercial process, or used in any heating or cooling application. This shall not include the thermal energy of any condensate returned from the process or application to the cogeneration facility, or any thermal energy used to produce electric power.

(c) Emissions Limitations

(1) Southern California Edison, or its successor, shall not operate its electric power generating system unless the following District-wide daily limits on emissions rate and emissions cap are met during the applicable time period:

	District-Wide Daily Limits Lb NO_x/Net Megawatt (MW) Hr	Lb-NO_x Per Day
Beginning December 31, 1989	1.10	
Beginning December 31, 1990	1.01	
Beginning December 31, 1991	0.91	
Beginning December 31, 1992	0.82	
Beginning December 31, 1993	0.72	
Beginning December 31, 1994	0.63	
Beginning December 31, 1995	0.53	
Beginning December 31, 1996	0.44	
Beginning December 31, 1997	0.34	
Beginning December 31, 1998	0.25	
Beginning December 31, 1999	0.15	13,400

(2) Los Angeles Department of Water and Power, or its successor, shall not operate its electric power generating system unless the following District-wide daily limits on emissions rate and emissions cap are met during the applicable time period:

	District-Wide Daily Limits Lb NO_x/Net Megawatt (MW) Hr	Lb-NO_x Per Day
Beginning December 31, 1989	1.60	
Beginning December 31, 1990	1.41	
Beginning December 31, 1991	1.21	
Beginning December 31, 1992	1.02	
Beginning December 31, 1993	0.82	
Beginning December 31, 1994	0.73	
Beginning December 31, 1995	0.63	
Beginning December 31, 1996	0.54	
Beginning December 31, 1997	0.43	
Beginning December 31, 1998	0.29	
Beginning December 31, 1999	0.15	5,400
Beginning December 31, 2004	0.15	6,400
Beginning December 31, 2009	0.15	7,400

(3) The City of Burbank, the City of Glendale, and the City of Pasadena, or any of their successors, shall not operate their electric power generating system unless at least one of the following District-wide daily limits on emissions rate or emissions cap is met during the applicable time period:

(A) For the City of Burbank:

Date	District-Wide Daily Limits	
	Lb NO_x/Net Megawatt (MW) Hr	Lb NO_x Per Day
Beginning December 31, 1989	2.47	3,870
Beginning December 31, 1993	1.73	2,763
Beginning December 31, 1996	0.99	1,657
Beginning December 31, 1999	0.20	580

(B) For the City of Glendale:

Date	District-Wide Daily Limits	
	Lb NOx/Net Megawatt (MW) Hr	Lb NOx Per Day
Beginning December 31, 1989	2.52	2,940
Beginning December 31, 1993	1.76	2,050
Beginning December 31, 1996	1.00	1,170
Beginning December 31, 1999	0.20	390

(C) For the City of Pasadena:

Date	District-Wide Daily Limits	
	Lb NOx/Net Megawatt (MW) Hr	Lb NOx Per Day
Beginning December 31, 1989	3.05	5,230
Beginning December 31, 1993	2.12	3,680
Beginning December 31, 1996	1.18	2,130
Beginning December 31, 1999	0.20	900

(4) Electric power generating systems shall not emit NOx from all boilers, replacement units and approved alternative resources or advanced combustion resources in the District, for any calendar year beginning with 2000, in excess of the following limits:

(A) 1,640 tons per year for Southern California Edison Co.;

(B) 960 tons per year for Los Angeles Department of Water and Power;

(C) 56 tons per year for the City of Burbank;

(D) 35 tons per year for the City of Glendale; if Grayson combined cycle gas turbine Unit 8BC cannot produce electricity because of a breakdown for 30 continuous days or more, the annual NO_x emissions limit shall be increased by 65 pounds per day, up to a maximum of 41 tons per year.

(E) 80 tons per year for the City of Pasadena.

(5) A violation of any requirement specified in paragraphs (c)(1), or (c)(2), or (c)(3), or (c)(4) shall constitute a violation of this rule for every

permitted unit operating during the exceedance period in the applicable electric power generating system. This provision shall not be applicable to approved alternative or advanced combustion resources, and compliance shall be determined assuming that NO_x emissions from approved alternative or advanced combustion resources occur at actual or permitted levels, whichever is lower.

(6) All retrofit emission control devices required to meet the provisions of this rule for the year 2000 shall be installed and be operative on each boiler by December 31, 1997, except for the three cities of Glendale, Pasadena and Burbank for whom the deadline shall be December 31, 1999. All replacement units and approved alternative or advanced combustion resources required by the approved compliance plan for all the electric power generating systems shall be installed and be operative by December 31, 1999.

(7) The owner or operator of each boiler and approved alternative or advanced combustion resource in the District shall submit an application for change of permit conditions to include NO_x emission limits for each boiler and approved alternative or advanced combustion resource, as specified in the compliance plan requirements in subparagraph (d)(1)(C). Such applications shall be submitted no later than January 1, 1992, to the Executive Officer for approval.

(8) A violation of any unit-specific NO_x emissions limits established in a District Permit to Operate or approved compliance plan shall constitute a violation of this rule for that unit of the electric power generating system.

(d) Compliance Plans

(1) Compliance Plan (Plan) approval and disapproval:

(A) Each owner or operator of a boiler shall submit a Plan by January 1, 1992 to the Executive Officer for approval. The Plan shall propose actions and alternatives which will be taken to meet or exceed the requirements of this rule.

(B) The Executive Officer shall seek input from the Air Resources Board (ARB), the California Energy Commission (CEC), and the California Public Utilities Commission (CPUC) prior to approval

of the Plan. All written comments received from the ARB, the CEC, and the CPUC for a CPUC-regulated utility, within 30 days of the receipt of the Plan, shall be considered by the Executive Officer for Plan approval.

(C) The Executive Officer shall disapprove the Plan unless the applicant proves to the satisfaction of the Executive Officer that the implementation of the Plan will result in timely compliance with all provisions of this rule. The approved Plan shall specify a NO_x emission limit for each unit of the electric power generating system in Lb NO_x per net Megawatt Hour on an hourly average basis; such emission limit shall not be applicable when the unit is not producing any net electric power, or during a start-up, a shutdown, or 12 hours for each start-up or shutdown, whichever is less.

(D) On and after July 1, 1992, failure to have an approved Plan or failure to implement the provisions of an approved Plan shall constitute a violation of this rule.

(2) The Plan shall contain, at a minimum:

(A) A list of all boilers subject to this rule with the maximum rated net and gross generating capacity for each unit.

(B) A schedule of equipment to be controlled, displaced, or replaced, indicating the type of control to be applied to each existing boiler and the emissions reductions for each compliance increment, and identifying each unit to be displaced with an alternative or advanced combustion resource.

(C) Detailed schedules for submittal of permit applications, construction activities, and planned operation phases.

(D) A detailed list of all assumptions and calculations used to determine compliance with the District-wide daily limits.

(E) A list of the control devices and methods which are being proposed for each boiler specified in subparagraph (d)(2)(A), along with the percent NO_x reduction efficiency assumed for each.

(F) Historical power generating data for each boiler and future resource plans used to support power generation mix assumptions.

(G) For each year, beginning with 1992, a graph of the NO_x emission in Lb NO_x/hour versus net Megawatts generated on an hourly average basis for the full load range of each unit of the electric power generating system burning natural gas that will result in compliance with the District-wide daily limits as specified in subsection (c), Emissions Limitations, for the following cases:

(i) Under a projected peak generation day for each future year of compliance, based on District guidelines, and

(ii) Individually for each unit, under maximum power generation for that unit on a projected peak generation day for each future year of compliance.

(H) Identification of conditions that may require an exemption under subsection (h) and the actions taken or to be taken to minimize or eliminate such conditions.

(3) The Plan shall also include proposed increments of progress for the following:

(A) Southern California Edison shall install and operate by December 31, 1993 a Selective Catalytic Reduction unit (SCR) on an existing 480 MW steam boiler such that NO_x emissions from the facility do not exceed 0.25 pound of NO_x per net MWH; and

(B) Los Angeles Department of Water and Power shall replace at least 240 megawatts of existing steam boiler capacity by December 31, 1993 such that NO_x emissions from the replacement unit do not exceed applicable Best Available Control Technology standards, as determined by the Executive Officer.

(4) Not earlier than July 1 of any year following 1992, amendments to a previously approved Plan may be proposed to the Executive Officer as necessary to reflect energy regulatory agency resource or municipal authority planning determinations, adjustments to unit specific emissions limits required in subparagraph (d)(1)(C) in view of emissions control performance test data, and advancements in emissions control technology. The Executive Officer shall disapprove such amendments unless the applicant proves to the satisfaction of the Executive Officer

that the implementation of the amended Plan will result in timely compliance with all provisions of this rule.

(5) All approved Plans and approved amendments to Plans shall be submitted by the District to the Air Resources Board and the Environmental Protection Agency as source-specific revisions to the State Implementation Plan.

(e) Measurements

(1) The owner or operator of each boiler, replacement unit and approved alternative or advanced combustion resource in the District shall install, operate, and maintain in calibration a continuous emission monitoring system (CEMS) and a Remote Terminal Unit (RTU) to demonstrate compliance with the provisions of this rule.

(2) Each CEMS shall meet all applicable federal, state and District requirements for certification, calibration, performance, measurement, maintenance, notification, recordkeeping and reporting, including, but not limited to, the requirements set forth in the District's "CEMS Requirements Document for Utility Boilers," dated July 19, 1991. Prior to the installation of a CEMS, the owner or operator of each boiler, replacement unit and approved alternative or advanced combustion resource in the District shall submit a revised detailed CEM Plan by October 19, 1991 for the approval of the Executive Officer. The CEM Plan shall contain all information required in the District's "CEMS Requirements Document for Utility Boilers," dated July 19, 1991.

(3) Each RTU shall meet specifications set forth by the Executive Officer to ensure that emissions and other data necessary to determine compliance are reliably and accurately telecommunicated from each unit to the District in a format compatible with District equipment. Each RTU shall be installed with the prior approval of the Executive Officer by January 1, 1993.

(4) Starting December 21, 1990 until January 1, 1993, the owner or operator of each boiler, replacement unit and approved alternative or advanced combustion resource in the District shall submit a monthly compliance report to the Executive Officer, and shall make all data available to the

District staff on a daily basis according to the interim reporting requirements specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991.

(5) The owner or operator of each boiler, replacement unit and approv. alternative or advanced combustion resource in the District shall instal testing facilities as specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991, by January 1, 1993.

(6) The owner or operator of each boiler, replacement unit and approved alternative or advanced combustion resource in the District shall install, maintain and operate a backup data gathering and storage system after each associated RTU is installed, but not later than January 1, 1993, as specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991.

(7) CEMS data shall be gathered and recorded at least once per minute at each boiler, replacement unit and approved alternative or advanced combustion resource in the District, and valid data, as specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991, shall be obtained for at least 90 percent of the data points in any calendar day.

(8) If valid data is not obtained by a CEMS for any boiler, replacement unit or approved alternative or advanced combustion resource in the District, the following alternative means of NO_x emissions data generation may be used for not more than 72 hours in any one calendar month:

(A) Reference test methods as specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991; or

(B) Load curves provided approval is obtained as specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991. New load curves shall be submitted for the approval of the Executive Officer if the basic equipment is modified.

(f) Use of Liquid Petroleum Fuel

(1) The District-wide daily limits on emissions rate and emissions cap specified in paragraphs (c)(1), (c)(2), and (c)(3) shall not apply to an electric power generating system on days of force majeure natural gas

curtailment when the use of liquid petroleum fuel is required, provided that:

(A) Within 15 days of each occurrence, the owner or operator of each boiler submits an affidavit signed by a corporate officer affirming that liquid petroleum fuel was burned due to force majeure natural gas curtailment; and

(B) Each boiler, when it burns natural gas exclusively, meets the applicable unit-specific NO_X emission limit specified in subparagraph (d)(1)(C); and

(C) Each boiler, when it burns liquid petroleum fuel exclusively, emits oxides of nitrogen at no more than 2 times the applicable unit-specific NO_X emission limit specified in subparagraph (d)(1)(C); and

(D) Each boiler, when it burns a combination of liquid petroleum fuel and natural gas, emits oxides of nitrogen at no more than the prorated limit for that unit, obtained from the requirements specified in subparagraphs (f)(1)(B) and (f)(1)(C), and weighted by the flow rate and gross heating value of natural gas and liquid petroleum fuel, respectively. The calculation procedure in the "CEMS Requirement Document for Utility Boilers", dated July 19, 1991 shall be followed.

(2) A boiler may burn liquid petroleum fuel for up to 24 hours in any calendar year for fuel readiness testing provided that the emission limitation specified in subparagraph (f)(1)(C) is met. The unit specific NOx emission limit specified in subparagraph (d)(1)(C) shall not apply during this period.

(g) Municipal Bubble Options

(1) Any electric power generating system may form a municipal bubble by linking with one or more electric power generating system(s), for the purposes of this rule, provided all of the following conditions are met:

(A) The municipal bubble does not include Southern California Edison; and

(B) The municipal bubble is formed for at least one year, or more; and

(C) An application for approval of the municipal bubble is submitted jointly by all affected municipal utilities to the Executive Officer, at least six months in advance; and

(D) Written approval of the application for the municipal bubble is obtained from the Executive Officer prior to utilization of any provision contained in subsection (g), Municipal Bubble Options.

(2) The application for a municipal bubble required in subparagraph (g)(1)(C) shall include, without being limited to:

(A) Proposed amendments to the compliance plans of all affected municipal utilities, as required to meet or exceed the municipal bubble emissions limitations specified in paragraph (g)(3); and

(B) Applications for change of permit conditions to adjust NO_x emissions limits for each boiler, replacement unit and approved alternative or advanced combustion resource in the District, as required by the proposed amendments to the compliance plans; and

(C) Any other information required by the Executive Officer to evaluate compliance with the provisions of this rule.

The Executive Officer shall not approve the application for a municipal bubble unless it is demonstrated to the satisfaction of the Executive Officer that such action(s) will result in compliance with the municipal bubble emissions limitations specified in paragraph (g)(3) in an enforceable manner.

(3) Municipal bubble emissions limitations shall be derived from the District-wide daily limits on emissions rate and emissions cap specified in paragraphs (c)(2) and (c)(3), for each municipal utility, as follows:

(A) The District-wide daily limits on emissions rate in pounds of NO_x per net megawatt-hours shall be the sum of the emissions rates of each participating utility, weighted by the maximum permitted capacity of each utility as a fraction of the total permitted capacity in the municipal bubble, for the applicable time period; and

(B) The District-wide daily limits on emissions cap in pounds of NO_x per day shall be the sum of the emissions cap of all participating utilities, for the applicable time period, and beginning

December 31, 1999, if Los Angeles Department of Water and Power is included in the municipal bubble; and

(4) An electric power generating system subject to a municipal bubble approved by the Executive Officer shall be exempt from the utility-specific requirements of paragraphs (c)(2) and (c)(3); and be subject to the municipal bubble emissions limitations specified in paragraph (g)(3) for the applicable time period.

(5) A violation of any municipal bubble emissions limitations required in paragraph (g)(4) shall constitute a violation for each permitted boiler and replacement unit, operating during the exceedance period, in the municipal bubble. This provision shall not apply to approved alternative or advanced combustion resources.

(h) Exemptions

(1) Notwithstanding the provisions of paragraphs (c)(1) or (c)(2), Southern California Edison or Los Angeles Department of Water and Power may operate its electric power generating system if both the following District-wide daily limits on emissions rate and emissions cap are met:

	District-Wide Daily Limits Lb NO_x/Net Megawatt (MW) Hr	Lb-NO_x Per Day
Southern California Edison	0.25	5,360
Los Angeles Department of Water and Power	0.25	2,960

(2) Notwithstanding the provisions of paragraphs (c)(1), (c)(2), or (c)(3), an electric power generating system may be operated for no more than 10 calendar days in any calendar year if all the following conditions are met:

(A) Both the following District-wide daily limits on emissions rate and emissions cap are met:

	District-Wide Daily Limits Lb NO_x/Net Megawatt (MW) Hr	Lb-NO_x Per Day
Southern California Edison	0.25	20,100
Los Angeles Department of Water and Power	0.25	11,100
Burbank	0.25	870
Glendale	0.25	580
Pasadena	0.25	1,350; and

(B) The electric generating system owner/operator has taken all possible steps to comply with paragraphs (c)(1), (c)(2) and (c)(3), including the interruption of non-firm load.

(C) The exemption is not required as a result of operator error, neglect, or improper operating or maintenance procedures;

(D) Steps are immediately taken to correct the condition;

(E) The electric power generating system owner/operator reports to the District the need for the exemption within one hour of the occurrence or within one hour of the time said operator knew or reasonably should have known of the occurrence;

(F) No later than one week after each event the owner/operator submits a written report to the District including but not limited to:

(i) A statement that the situation has been corrected, together with the date of correction and proof of compliance;

(ii) A specific statement of the reason(s) or cause(s) for the exemption sufficient to enable the Executive Officer to determine whether the occurrence was in accordance with the criteria set forth in subparagraphs (h)(2)(B) and (h)(2)(C) of this rule;

(iii) A description of the corrective measures undertaken and/or to be undertaken to avoid such an occurrence in the future.

FOR REFERENCE PURPOSES ONLY, ADD:

CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) REQUIREMENTS DOCUMENT FOR UTILITY BOILERS

Last amended July 19, 1991

8/28/96

(Adopted September 16, 1983) (Amended August 5, 1988)(Amended May 5, 1989)
(Amended March 2, 1990)(Amended June 28, 1990)(Amended November 2, 1990)
(Amended December 7, 1990)(Amended August 2, 1991)(Amended April 8, 1994)
(Amended August 12, 1994)(Amended September 8, 1995)(Amended June 14, 1996)

RULE 1136. WOOD PRODUCTS COATINGS

(a) Purpose and Applicability

The purpose of Rule 1136 is to reduce volatile organic compounds (VOC) emissions from the application of coatings or strippers to, and surface preparation of, any wood products, including furniture, cabinets, shutters, frames and toys. This rule shall not apply to residential noncommercial operations.

(b) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) AEROSOL COATING PRODUCT means a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application.

(2) BARRIER COAT - PLASTIC COMPONENTS is a coating applied to simulated wood components made from polypropylene, polystyrene, polyester, polyurethane, and other plastics to improve adhesion of waterborne coatings.

(3) BINDERS are non-volatile polymeric organic materials (resins) which form the surface film in coating applications.

(4) CAPTURE EFFICIENCY, in percent, is the ratio of the weight of the VOC in the effluent stream entering the control device to the weight of VOC emitted from wood product coating operations, both measured simultaneously, and can be calculated by the following equation:

Capture Efficiency = [Wc/We] x 100

Where: Wc = weight of VOC entering control device

We = weight of VOC emitted

(5) CLASSIC GUITARS are replicas of guitars that were originally manufactured before 1965 and are manufactured by the same original processes.

(6) CLEAR SEALER is a coating containing binders, but not opaque pigments, which seals the wood product prior to application of the subsequent coatings.

(7) CLEAR TOPCOAT is a final coating which contains binders, but not opaque pigments, and is specifically formulated to form a transparent or translucent solid protective film.

(8) COATING is a material which is applied to a surface and which forms a film in order to beautify and/or protect such surface.

(9) COMPOSITE WOOD is a manufactured material consisting of tightly compressed wood fibers bonded with resins which includes, but is not limited to, particleboard, fiberboard and hardboard.

(10) COMPOSITE WOOD EDGE FILLER is a material which is applied to the edge of a composite wood product, and whose primary function is to build up, or fill the voids and imperfections on the edge of the composite wood product.

(11) CONTROL DEVICE EFFICIENCY, in percent, is the ratio of the weight of the VOC removed by the control device from the effluent stream entering the control device to the weight of VOC in the effluent stream entering the control device, both measured simultaneously, and can be calculated by the following equation:

Control Device Efficiency = [(Wc-Wa)/Wc] x 100

Where: Wc = weight of VOC entering control device

Wa = weight of VOC discharged from the control device

(12) CONVENTIONAL AIR SPRAY means a spray coating method in which the coating is atomized by mixing it with compressed air at an air pressure greater than 10 pounds per square inch (gauge) at the point of atomization. Airless and air assisted airless spray technologies are not conventional air spray because the coating is not atomized by mixing it with compressed air. Electrostatic spray technology is also not considered conventional air spray because an electrostatic charge is employed to attract the coating to the workpiece.

(13) CUSTOM REPLICA FURNITURE is new, made-to-order furniture that looks like antique furniture, rather than new furniture. It features detailed wood carvings and bruising of the wood to simulate antique furniture.

(14) DIP COAT is to dip an object into a vat of coating material and drain off any excess coating.

(15) ELECTROSTATIC APPLICATION is charging of atomized paint droplets for deposition by electrostatic attraction.

(16) EXEMPT COMPOUNDS - See Rule 102.

(17) EXTREME PERFORMANCE COATING is a two-component high-solids epoxy, urethane or polyester coating which requires the mixing of a resin and a catalyst, and is applied to a wood product to achieve a high gloss and/or high film build coat which cannot be achieved with a low-VOC coating, or to protect the wood product from one or more of the following environmental conditions:

(A) Repeated scrubbing with industrial grade detergents, cleaners, or abrasive scouring agents; or

(B) Frequent exposure to water, to outdoor weather, or to ultraviolet radiation.

(18) FILLER is a material which is applied to a wood product, and whose primary function is to build up, or fill the voids and imperfections in the wood product to be coated. This shall not include composite wood edge filler.

(19) FLOW COAT is to coat an object by flowing a stream of coating over an object and draining off any excess coating.

(20) GLAZES are a type of stain used to soften or blend the original color without obscuring it.

(21) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters

For coatings that contain reactive diluents, the VOC content of the coating is determined after curing. The grams of VOC per liter of coating shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds, in grams, emitted into the atmosphere during curing

W_w = weight of water, in grams, emitted into the atmosphere during curing

W_{es} = weight of exempt compounds, in grams, emitted into the atmosphere during curing

V_m = volume of the material, in liters, prior to reaction

V_w = volume of water, in liters, emitted into the atmosphere during curing

V_{es} = volume of exempt compounds, in liters, emitted into the atmosphere during curing

(22) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds in grams

W_w = weight of water in grams

W_{es} = weight of exempt compounds in grams

V_m = volume of material in liters

(23) HIGH FILM BUILD is when the dry-film thickness per application is greater than four thousandths of an inch.

(24) HIGH GLOSS is when a coating surface shows a reflectance of 75 or more on a 60 degree meter.

(25) HIGH-SOLIDS STAINS are stains containing more than 1 pound of solids per gallon of material, and include wiping stains, glazes, and opaque stains.

(26) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is an equipment used to apply coating by means of a spray gun which is designed to be operated and which is operated between 0.1 and 10.0 pounds per square inch gauge (psig) air pressure, measured dynamically at the center of the air cap and at the air horns.

(27) INK is a fluid that contains dyes and/or colorants and is used to make markings, but not to protect surfaces.

(28) JAPANS are saturated, pure pigments ground in a varnish-like vehicle used as a stain or glaze to create artistic effects, including but not limited to, dirt, old age, smoke damage, and simulated marble and wood grain.

(29) LOW-SOLIDS COATING is a coating containing 1 pound, or less, of solids per gallon of material.

(30) MOLD-SEAL COATING is the initial coating applied to a new mold or repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.

(31) MULTI-COLORED COATING is a coating which exhibits more than one color when applied, and which is packaged in a single container and applied in a single coat.

(32) OVERALL CONTROL EFFICIENCY (C.E.), in percent, is the ratio of the weight of the VOC removed by the emission control system, to the total weight of VOC emitted from wood product coating operations, both measured simultaneously, and can be calculated by the following equations:

C.E. = [(Wc-Wa)/We] x 100

C.E. = [(Capture Efficiency) x (Control Device Efficiency)]/100

Where: Wc = weight of VOC entering control device

Wa = Weight of VOC discharged from the control device

We = weight of VOC emitted

(33) PIGMENTED PRIMERS, SEALERS, AND UNDERCOATS are opaque coatings which contain binders and colored pigments formulated to hide the wood surface, that are applied prior to the topcoat to provide a firm bond, level the wood product surface, or seal the wood product surface.

(34) PIGMENTED TOPCOAT is a final opaque coating which contains binders and colored pigments, and is specifically formulated to hide the wood surface and form a solid protective film.

(35) POTENTIAL TO EMIT means the maximum capacity of a facility to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation, emissions, or on the type or amount of material

combusted, stored, or processed, shall be treated as part of its design if the limitation is enforceable by the EPA Administrator.

(36) POUNDS OF VOC PER POUND OF SOLIDS is the weight of VOC per weight of coating solids within any given volume of coating and can be calculated by the following equation:

$$\text{Pounds of VOC per Pound of Solids} = \frac{W_s - W_w - W_{es}}{W_r}$$

Where: W_s = weight of volatile compounds in pounds
W_w = weight of water in pounds
W_{es} = weight of exempt compounds in pounds
W_r = weight of coating solids in pounds

For coatings that contain reactive diluents, the VOC content of the coating is determined after curing. The pounds of VOC per pound of coating solids shall be calculated by the following equation:

$$\text{Pounds of VOC per Pound of Solids} = \frac{W_s - W_w - W_{es}}{W_r}$$

Where: W_s = weight of volatile compounds, in pounds, emitted into the atmosphere during curing
W_w = weight of water, in pounds, emitted into the atmosphere during curing
W_{es} = weight of exempt compounds, in pounds, emitted into the atmosphere during curing
W_r = weight of coating solids, in pounds, prior to reaction

(37) REACTIVE DILUENT is a liquid which is a VOC during application and one in which, through chemical or physical reactions, such as polymerization, becomes an integral part of a finished coating.

(38) RATE PER DAY is the amount applied between 12:00 a.m. and 11:59 p.m. on the same calendar day.

(39) RATE PER CALENDAR YEAR is the amount applied between 12:00 a.m. January 1 and 11:59 p.m. December 31.

(40) REFINISH is the recoating of wood products that have been previously coated.

(41) REPAIR COATING is a coating used to recoat portions of a wood product which has sustained damage to the coating following normal painting operations.

(42) ROLL COATER is a series of mechanical rollers that applies a thin coating on the wood product.

(43) SHUTTER is a movable screen or cover for a window, usually hinged and often fitted with louvers.

(44) SIMULATED WOOD MATERIALS are materials, such as plastic, glass, metal, paper etc., that are made to give a wood-like appearance or are processed like a wood product.

(45) STENCIL COATING is an ink or a pigmented coating which is rolled or brushed onto a template or stamp in order to add identifying letters and/or numbers to wood products.

(46) STRIPPER is a liquid used to remove cured coatings, cured inks and/or cured adhesives.

(47) TONER is a wash coat which contains binders and dyes or pigments to add tint to a coated surface.

(48) TOUCH-UP COATING is a coating used to cover minor coating imperfections appearing after the main coating operation.

(49) TRANSFER EFFICIENCY is the ratio of the weight of coating solids deposited on an object to the total weight of coating solids used in a coating application step, expressed as a percentage.

(50) VOC COMPOSITE PARTIAL PRESSURE is the sum of the partial pressures of the compounds defined as VOCs.

VOC Composite Partial Pressure is calculated as follows:

$$PP_c = \sum_{i=1}^{n} \frac{(W_i)(VP_i)/MW_i}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

Where:

W_i = Weight of the "i"th VOC compound, in grams (g)

W_w = Weight of water, in grams (g)

W_e = Weight of exempt compound, in grams (g)

MW_i = Molecular weight of the "i"th VOC compound, in $\frac{g}{g\text{-mole}}$

MW_w = Molecular weight of water, in $\frac{g}{g\text{-mole}}$

MW_e = Molecular weight of exempt compound, in $\frac{g}{g\text{-mole}}$

PP_c = VOC composite partial pressure at 20°C, in mm Hg

VP_i = Vapor pressure of the "i"th VOC compound at 20°C, in mm Hg

(51) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(52) WASHCOAT is a coating that contains no more than 1.0 pound of solids per gallon of material, and which is used to seal wood product surfaces, for any of the following purposes:

(A) to prevent undesired staining,

(B) to control penetration,

(C) to provide a barrier when paper laminates are applied to the wood product,

(D) to seal glazes,

(E) to improve adhesion of a waterborne topcoat.

(53) WOOD PRODUCTS are those surface-coated room furnishings which include cabinets (kitchen, bath, and vanity), tables, chairs, beds, sofas, shutters, art objects, and any other coated objects made of wood, composite wood, simulated wood material used in combination with wood or composite wood; and/or paper laminated on composite wood.

(54) WOOD PRODUCT COATING APPLICATION OPERATIONS are a combination of coating application steps which may include use of spray guns, flash-off areas, spray booths, ovens, conveyors, and/or other equipment operated for the purpose of applying coating materials.

(c) Requirements

(1) VOC Content of Coatings and Strippers

(A) A person or facility shall not apply any coating to a wood product which has a VOC content, including any VOC-containing material added to the original coating supplied by the manufacturer, which exceeds the applicable limit specified below:

(i)

VOC LIMITS
Grams Per Liter (lb/gal) of Coating, [lbs VOC/lb of solids],
Less Water and Less Exempt Compounds

COATING	Current Limit	On and After 7/1/97 I	or	On and After 7/1/97 II	On and After 7/1/2005
Clear Sealers	680 (5.7) [3.36]	550 (4.6) [1.39]		680 (5.7) [3.36]	275 (2.3) [0.36]
Clear Topcoat	680 (5.7) [2.99]	550 (4.6) [1.37]		275 (2.3) [0.35]	275 (2.3) [0.35]
Pigmented Primers, Sealers & Undercoats	600 (5.0) [1.08]	550 (4.6) [1.06]		600 (5.0) [1.08]	275 (2.3) [0.21]
Pigmented Topcoats	600 (5.0) [1.38]	550 (4.6) [1.10]		275 (2.3) [0.25]	275 (2.3) [0.25]

Effective July 1, 1997, a person or facility shall use coatings on a wood product that comply with either all VOC limits in column I or all VOC limits in column II. A person or facility that applies a primer, sealer or undercoat, but not a topcoat, to a wood product, shall be subject to column I for that wood product.

(ii) Notwithstanding the requirements of clause (c)(1)(A)(i), a person or facility that applies a topcoat and a primer, sealer or undercoat to a shutter may, until July 1, 2005, choose to comply with the VOC limits specified below for that shutter:

VOC LIMITS
Grams Per Liter, (lb/gal) of Coating, [lbs VOC/lb of solids],
Less Water and Less Exempt Compounds

COATING	
Clear Sealers	275 (2.3) [0.36]
Clear Topcoat	680 (5.7) [2.99]
Pigmented Primers, Sealers & Undercoats	275 (2.3) [0.33]
Pigmented Topcoats	600 (5.0) [1.38]

(iii)

VOC LIMITS

Grams Per Liter, (lb/gal) of Coating, [lbs VOC/lb of solids], Less Water and Less Exempt Compounds

COATING	Current Limit	On and After 7/1/97	On and After 7/1/2005
Barrier Coat - Plastic Components	800 (6.7) [6.3]	760 (6.3) [3.9]	275 (2.3) [0.28]
Composite Wood Edge Filler	680 (5.7) [2.34]	550 (4.6) [1.15]	275 (2.3) [0.31]
Extreme Performance Coatings	420 (3.5) [0.51]	420 (3.5) [0.51]	275 (2.3) [0.33]
Fillers	500 (4.2) [0.66]	500 (4.2) [0.66]	275 (2.3) [0.18]
High-Solid Stains	700 (5.8) [2.84]	550 (4.6) [1.23]	350 (2.9) [0.42]
Inks	500 (4.2) [0.96]	500 (4.2) [0.96]	500 (4.2) [0.96]
Mold-Seal Coatings	750 (6.3) [4.2]	750 (6.3) [4.2]	750 (6.3) [4.2]
Multi-Colored Coatings	685 (5.7) [2.6]	685 (5.7) [2.6]	275 (2.3) [0.33]

VOC LIMITS

Grams Per Liter (lb/gal) of Material

COATING	Current Limit	On and After 7/1/97	On and After 7/1/2005
Low-Solids Barrier Coat - Plastic Components	800 (6.7)	760 (6.3)	120 (1.0)
Low-Solid Stains, Toners, and Washcoats	800 (6.7)	480 (4.0)	120 (1.0)

Any coating subject to this rule that meets any of the three VOC limit formats (grams per liter, lb/gal, or lbs VOC/lb of solids) is in compliance with this subparagraph.

(B) A person shall not use a stripper on wood products unless:

(i) it contains less than 350 grams of VOC per liter of material; or

(ii) the VOC composite vapor pressure is 2 mm Hg (0.04 psia) or less at 20°C (68°F).

(C) Owners and/or operators may comply with provisions of paragraph (c)(1)(A) and (B) by using an approved air pollution control system, consisting of collection and control devices, which reduces VOC emissions from the application of wood product coatings or strippers by an equivalent or greater amount than the limits specified in subparagraphs (c)(1)(A) and (B), with the written

approval of the Executive Officer. The minimum required overall control efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by the following equation:

$$C.E. = \left[1 - \left\{ \frac{(VOC_{LWc})}{(VOC_{LWn,Max})} \times \frac{1 - (VOC_{LWn,Max}/ D_{n,Max})}{1 - (VOC_{LWc}/D_c)} \right\} \right] \times 100$$

Where: C.E. = Overall Control Efficiency, percent

VOC_{LWc} = VOC Limit of Rule 1136, less water and less exempt compounds, pursuant to subparagraph (c)(1)(A).

$VOC_{LWn,Max}$ = Maximum VOC content of non-compliant coating used in conjunction with a control device, less water and less exempt compounds.

$D_{n,Max}$ = Density of solvent, reducer, or thinner contained in the non-compliant coating, containing the maximum VOC content of the multicomponent coating.

D_c = Density of corresponding solvent, reducer, or thinner used in the compliant coating system = 880 G/L.

(D) Emissions Averaging Provisions

(i) Owners or operators may comply with the provisions of subparagraph (c)(1)(A) by using an averaging approach for all or a portion of the coatings used at the facility, provided all requirements of this subparagraph are met. The owner or operator shall demonstrate that actual emissions from the coatings being averaged are less than or equal to 90 percent of the allowable emissions, on a daily basis, using the following inequality:

$$0.09 \sum_{i=1}^{n} VOC_i (U_i) \geq \sum_{i=1}^{n} ER_i (U_i)$$

Where:

VOC_i = VOC content limit of coating "i" (pounds (lb) of VOC/gallon of material for low solids coatings; and lb VOC/lb of solids for all other coatings), as required by subparagraph (c)(1)(A);

U_i = Usage of coating "i" (gallons of material for low-solids coatings; and lb of solids for all other coatings); and

ER_i = Actual VOC content of coating "i", as applied (lb of VOC/gallon of material for low-solids materials; and lb VOC/lb of solids for all other coatings).

The 0.9 multiplier above is not applicable after June 30, 2005, or to facilities with a potential to emit less than 10 tons of VOC per year. Any wood product coating not included in the emission averaging shall comply with the VOC limits in subparagraph (c)(1)(A).

(ii) Emissions Averaging Plan (Plan)

Owners or operators shall submit a Plan, pursuant to Rule 221 - Plans, to the Executive Officer to participate in emissions averaging. The plan may not be implemented until it is approved in writing by the Executive Officer. Submittal of the Plan does not provide an exemption from the rule requirements. The Plan shall include, at a minimum:

(I) A description of the wood product coatings to be included in the averaging program; and

(II) A description of the quantification and recordkeeping procedures for coating usage; coating VOC and solids content; VOC emissions; and calculations to show daily compliance with clause (c)(1)(D)(i).

(2) Transfer Efficiency

A person or facility shall not apply coatings to wood products subject to the provisions of this rule unless the coating is applied with properly operating equipment, according to the equipment manufacturer's operating procedures, and by the use of one of the following methods:

(A) electrostatic application; or

(B) flow coat; or

(C) dip coat; or

(D) high-volume, low-pressure (HVLP) spray; or

(E) paint brush; or

(F) hand roller; or

(G) roll coater; or

(H) such other coating application methods as are demonstrated to the Executive Officer to be capable of achieving at least 65 percent transfer efficiency, and for which written approval of the Executive Officer has been obtained.

(3) Solvent Cleaning Operations; Storage and Disposal of VOC-containing Materials

Solvent cleaning operations and the storage and disposal of VOC containing materials are subject to the provisions of Rule 1171 - Solvent Cleaning Operations.

(d) Recordkeeping Requirements

Records shall be maintained pursuant to Rule 109 or pursuant to an approved Emissions Averaging Plan, whichever is applicable. If compliance with the VOC limits in subparagraph (c)(1)(A) is based on the pounds of VOC per pound of solids format, then the operator shall keep a record of the VOC content of the coating in pounds of VOC per pound of solids in addition to complying with the requirements of Rule 109.

(e) Prohibition of Specifications

A person shall not specify the use in the District of any coating to be applied to any wood products subject to the provisions of this rule that does not meet the limits and/or requirements of this rule. The requirements of this paragraph shall apply to all written or oral contracts.

(f) Test Methods

(1) The VOC content of coatings and strippers shall be determined by:

(A) United States Environmental Protection Agency (USEPA) Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coating, Code of Federal Regulations Title 40, Appendix A), or Method 304 (Determination of Volatile Organic Compounds (VOCs) in Various Materials) in the South Coast Air Quality Management District (SCAQMD) "Laboratory Methods of Analysis for Enforcement Samples" manual.

(B) The exempt compounds' content shall be determined by:

(i) Methods 302 (Distillation of Solvents from Paints, Coatings and Inks) and 303 (Determination of Exempt Compounds) in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(ii) The following classes of compounds: cyclic, branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision (c), only at such time as manufacturers specify which individual compounds are used in the coating formulations and identify the test methods, which, prior to such analysis, have been approved by the USEPA and the SCAQMD, that can be used to quantify the amounts of each exempt compound.

(2) Film build thickness shall be determined using American Society of Testing Materials (ASTM) Test Method D5235, as adopted in 1992.

(3) Gloss shall be determined using ASTM Test Method D 523, as adopted in 1989.

(4) For the purpose of calculating the VOC composite vapor pressure of a VOC-containing material, the composition of the material shall be based on the known formulation of the material or determined by Method 308 in

the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples".

(5) For determining the concentration of VOC in a gas stream and the efficiency of a control device, the total organic compound concentrations shall be determined using USEPA Test Method 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable, and the concentration of exempt compounds shall be determined using either USEPA Test Method 18 or California Air Resources Board Method 422.

(6) The capture efficiency of an emission control system as defined in paragraph (b)(3) shall be determined by a minimum of three sampling runs subject to the data quality objective (DQO) presented in the USEPA technical guidance document "Guidelines for Determining Capture Efficiency", January 9, 1995. Individual capture efficiency test runs subject to the USEPA technical guidelines shall be determined by:

(A) Applicable USEPA Methods 204, 204A, 204B, 204C, 204E, and/or 204F; or

(B) The SCAQMD "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency"; or

(C) Any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD Executive Officer.

(7) The transfer efficiency of alternative coating application methods shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989."

(8) When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(9) All test methods referenced in this subdivision shall be the most recently approved version.

(g) Continuous Monitors

(1) Each coating operation subject to subparagraph (c)(1)(C) shall have a continuous monitor, as approved by the Executive Officer, for any add-on control device used to meet the control requirement.

(2) Records of the monitoring devices pursuant to paragraph (g)(1) and other data necessary to demonstrate compliance with the control requirements shall be maintained on the premises and made accessible for a period of two years to the Executive Officer in a form and manner as specified by the Executive Officer.

(3) Compliance with subparagraph (c)(1)(C) shall be determined by source testing and/or evaluating continuous monitor data.

(4) Each monitoring device used pursuant to paragraph (g)(1) shall be calibrated in a manner approved by the Executive Officer and maintained in optimum working order.

(h) Rule 442 Applicability

Any coating, coating operation, or facility which is exempt from all or a portion of the VOC limits of this rule shall comply with the provisions of Rule 442 unless compliance with the limits specified in this rule is achieved.

(i) Alternative Emission Control Plan

An owner or operator may achieve compliance with paragraph (c)(1) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(j) Progress Reports

Owners or operators shall submit a progress report to the Executive Officer by January 1, 2003. The Progress Report shall include at a minimum:

(1) a statement that the facility or facilities are in compliance with the final Rule 1136 VOC limits; or

(2) for each facility, a description of their wood coating process, the wood product types, the wood coatings currently in use and their VOC contents, the low-VOC wood coatings which will be tested, any expected wood coating process or control equipment modifications, and the results of previous low-VOC coating tests. Facilities shall also report if they are planning to use Mobile Source Emission Reduction Credits (MSERCs) pursuant to Regulation XVI or other alternative emission reductions allowed by District rules.

(k) Air Quality Management Plan (AQMP) Technology Assessment Audit

The Executive Officer shall audit Rule 1136 by July 1, 2003 to assess the feasibility of the final VOC limits and whether new technology could provide additional reductions to meet the District's AQMP objectives.

(l) Exemptions

(1) The provisions of paragraphs (c)(1) and (c)(2) of this rule shall not apply to facilities that use less than one gallon per day of coating, as applied, subject to this rule.

(2) The provisions of this rule shall not apply to coating operations subject to, and in compliance with, the provisions of Rule 1104.

(3) The provisions of subparagraphs (c)(1)(A) and (C) shall not apply to the manufacturing of classic guitars until July 1, 2005.

(4) Refinishing, Replacement, and Custom Replica Furniture Operations: Until July 1, 1998, the provisions of subparagraphs (c)(1)(A) and (C) shall not apply to any refinishing operations necessary for preservation, to return the wood product to original condition, to replace missing furniture to produce a matching set, or to produce custom replica furniture, provided records are maintained daily for two years as to the amount, type and VOC content of each coating used.

(5) The provisions of paragraph (c)(1) shall not apply to touch-up and repair coatings until July 1, 2005.

(6) The provisions of this rule shall not apply to aerosol coating products.

(7) Notwithstanding the requirements of Rule 109(c)(1), Recordkeeping for Volatile Organic Compound Emissions, any facility that switches to waterborne coatings that meet the July 1, 2005 VOC limits may request written approval from the Executive Officer to record data on up to a quarterly basis, provided the Executive Officer determines that such recordkeeping allows for an equivalent level of enforceability.

(8) Notwithstanding the provisions of paragraph (c)(2), a person or facility may use:

(A) any spray equipment that uses only coatings that comply with the July 1, 2005 VOC limits; or

(B) any spray equipment, except conventional air spray, that uses only coatings that contain 550 grams, or less, of VOC per liter of coating, less water and less exempt compounds.

(9) The provisions of paragraph (c)(2) shall not apply to air brushes with a capacity of four fluid ounces, or less.

(10) The provisions of subparagraph (c)(1)(A) shall not apply to japans, provided the VOC content is 700 grams of VOC per liter of coating, less water and exempt compounds, or less, as applied.

(11) Notwithstanding the provisions of subparagraph (c)(1)(A), a person or facility may add up to 10% by volume of VOC to a topcoat, primer, sealer or undercoat to avoid blushing of the finish during high humidity provided that:

(A) the coating is not applied from April 1 to October 31 of any year; and

(B) the coating contains acetone and no more than 550 grams of VOC per liter of coating, less water and exempt compounds, prior to the addition of VOC.

(Adopted February 1, 2002)

RULE 1137. PM10 EMISSION REDUCTIONS FROM WOODWORKING OPERATIONS

(a) Purpose

The purpose of this rule is to reduce PM10 emissions from woodworking operations.

(b) Applicability

This rule applies to any woodworking facility that uses a pneumatic conveyance system to collect particulate matter from woodworking equipment.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) BAGHOUSE SYSTEM means a baghouse, cartridge filter, or a cyclone followed by an after filter, installed and connected to a pneumatic conveyance system.

(2) CUBIC FEET PER MINUTE is calculated by multiplying the air velocity by the cross sectional area of the ductwork.

(3) EMISSION CONTROL DEVICE is a combination of capture systems(s) and control equipment used to reduce, eliminate or control the release of particulate matter from a pneumatic conveyance system to the

atmosphere (i.e., cyclone, baghouse, misting system, etc.).

(4) EXISTING WOODWORKING FACILITY means a woodworking facility in existence prior to July 1, 2002.

(5) NEW OR EXPANDED PNEUMATIC CONVEYANCE SYSTEM means a separate pneumatic conveyance system constructed on or after July 1, 2002 or changes made to an existing conveyance system on or after July 1, 2002 that increase the cubic feet per minute of an existing pneumatic conveyance system by more than 20 percent over the design capacity of the system in existence as of July 1, 2002.

(6) NEW OR EXPANDED WOODWORKING FACILITY means any woodworking facility not in existence before July 1, 2002 or any existing woodworking facility that installs a new or expanded pneumatic conveyance system on or after July 1, 2002.

(7) OPERATOR is any person who operates a facility subject to the requirements of this rule.

(8) PNEUMATIC CONVEYANCE SYSTEM means an arrangement of devices such as hoods, ductwork, storage bins and fan(s) to collect particulate matter-

laden air from the process area and direct it to the atmosphere.

(9) SAWDUST EMISSIONS are minute particles of wood formed by the sawing, sanding, shaping, and/or drilling of wood.

(10) STAND ALONE EMISSION CONTROL DEVICE means a capture system connected directly to woodworking equipment and vented to an attached bag or by tubing to a container located inside an enclosed building within a woodworking facility.

(11) WASTE DISPOSAL ACTIVITIES involve the movement of sawdust emissions from a sawdust storage bin to another container or haul vehicle, and excludes the initial disconnection of an enclosure or shroud system from the sawdust storage bin.

(12) WOODWORKING EQUIPMENT includes, but is not limited to, ripsaws, panel saws, cut-off saws, matchers, stickers, grinders, moulders, planers, jointers, CNC routers, spindle sanders, drum sanders, edge sanders, tenoners, mortisers, groovers, borers, and dovetailers.

(13) WOODWORKING FACILITY is any facility with woodworking equipment or groups of woodworking equipment used in the production of wood products to

be sold or wood products to be improved or altered for profit, that are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control). Examples of woodworking facilities include, but are not limited to, lumbermills, furniture manufacturers, planing mills, furniture refinishing shops, cabinet shops, sash and door manufacturers, and carpenter shops. Examples of wood products include, but are not limited to, goods manufactured from plywood, particleboard, medium-density fiberboard, pine, oak, cedar, alder, and all other species of wood.

(d) Requirements

(1) On or after July 1, 2002, an operator of an existing woodworking facility shall not remove any baghouse system unless it is replaced with the same type of emission control device.

(2) On or after January 1, 2004, an operator of an existing woodworking facility shall not operate any equipment, activity or operation connected to a pneumatic conveyance system unless the sawdust emissions are

completely vented to an emission control device in operation such that there are no visible emissions exiting from external ductwork and the emission control device at any time, other than the initial 15 minutes after start up or the final 15 minutes prior to shutdown.

(3) On or after July 1, 2002, an operator of a new or expanded woodworking facility shall:

(A) completely vent the sawdust emissions from its new or expanded pneumatic conveyance system to a baghouse system; and

(B) operate the baghouse system such that there are no visible emissions exiting from external ductwork and the baghouse system at any time, other than the initial 15 minutes after start up or the final 15 minutes prior to shutdown; and

(C) operate and maintain the baghouse system in accordance with manufacturer specifications.

(4) On or after July 1, 2002, any operator of a woodworking facility with a pneumatic conveyance system shall not operate unless the sawdust emissions are reduced through an enclosure or shroud connected from the emission control device to the waste storage

bin so that there are no visible emissions at any time, other than the initial 15 minutes after start up or the final 15 minutes prior to shutdown.

(5) On or after July 1, 2002, any operator of a woodworking facility with a pneumatic conveyance system shall cover sawdust storage bins at all times except during the initial disconnection from the enclosure or shroud and during waste disposal activities.

(6) On or after July 1, 2002, any operator of a woodworking facility with a pneumatic conveyance system shall not cause visible emissions from waste disposal activities to cross any property line by taking measures, as necessary, such as, but not limited to, use of water or disposal bags, or prohibition of on-site waste transfer activities.

(e) Reporting Schedule

(1) No later than July 1, 2002, the operator of an existing woodworking facility subject to this rule shall submit all of the following to the Executive Officer and retain a copy on-site and make said copy available upon request:

(A) Operator's name and contact information;

(B) Type of operation (i.e., lumberyard, cabinet/furniture manufacturer, etc.);

(C) Fan(s) diameter;

(D) Fan(s) horsepower;

(E) Description of emission control device(s), including but not limited to:

(i) Type and model of equipment (i.e., cyclone, cyclone with after filter, cartridge collector, vacuum collection bag, industrial high-efficiency baghouse, etc); and

(ii) Diameter of cyclone outlet (if applicable).

(F) Estimate of sawdust generated per month; and

(G) Description of sawdust disposal procedures.

(2) Within 90 days of operation of a new or expanded woodworking facility, the information required in paragraph (e)(1) shall be submitted to the Executive Officer and a copy retained on-site and made available upon request.

(f) Exemptions

(1) The requirements of subdivision (d) and (e) shall not apply to the following:

(A) Woodworking equipment that vents solely to a stand alone emission control device or into an enclosed room.

(B) Woodworking equipment used in demonstrations that last less than 30 consecutive days at one location.

(2) The requirements of paragraph (d)(6) shall not apply when maximum instantaneous wind gusts exceed 25 miles per hour, provided that the operator applies water to the entire surface area after opening the sawdust storage bin prior to initiating waste disposal activities.

3/10/98

(Adopted November 14, 1997)

RULE 1138. CONTROL OF EMISSIONS FROM RESTAURANT OPERATIONS

(a) Applicability

This rule applies to owners and operators of commercial cooking operations, preparing food for human consumption. The rule requirements currently apply to chain-driven charbroilers used to cook meat. All other commercial restaurant cooking equipment including, but not limited to, under-fired charbroilers, may be subject to future rule provisions.

(b) Definitions

(1) CATALYTIC OXIDIZER means a control device which burns or oxidizes smoke and gases from the cooking process to carbon dioxide and water, using an infrastructure coated with a noble metal alloy.

(2) CHAIN-DRIVEN CHARBROILER is a semi-enclosed cooking device with a mechanical chain which automatically moves food through the device and consists of three main components: a grill, a high temperature radiant surface, and a heat source.

(3) CHARBROILER means a cooking device composed of the following three major components: a grated grill, a high-temperature radiant surface and a heat source. The heat source heats the high-temperature radiant surface, which provides the heat to cook the food resting on the grated grill. This includes, but is not limited to broilers: grill charbroilers, flamebroilers and direct-fired barbecues.

(4) EXISTING CHAIN-DRIVEN CHARBROILER means any chain-driven charbroiler operating on or before November 14, 1997.

(5) MEAT, for the purposes of this rule, includes beef, lamb, pork, poultry, fish, and seafood.

(6) NEW CHAIN-DRIVEN CHARBROILER means any chain-driven charbroiler initially installed and operated after November 14, 1997.

(7) RESTAURANT means any stationary commercial cooking establishment which prepares food for human consumption.

(8) UNDER-FIRED CHARBROILER means a cooking device which has a grill, a high temperature radiant surface, and a heat source which is located below the food.

(9) WEEKLY means a consecutive seven-day period.

(c) Requirements

(1) No person shall operate an existing chain-driven charbroiler on and after (twenty-four months from date of adoption) unless it is equipped and operated with a catalytic oxidizer control device, and the combination charbroiler/catalyst has been tested in accordance with the test method specified in subdivision (g) and certified by the Executive Officer. Other control devices or methods may be used, if found, in accordance with the test method specified in subdivision (g), to be as or more effective than the catalytic oxidizer in reducing particulate matter (PM) and volatile organic compounds (VOC) (as defined in Rule 102) emissions and certified by the Executive Officer.

(2) Notwithstanding provisions of paragraph (c)(1) of this rule, persons operating an existing chain-driven charbroiler with permitted control equipment may elect to maintain that equipment for the duration of its functional life not to exceed 10 years from (the date of adoption). At such time, such persons may elect to either replace the existing control equipment with a catalytic oxidizer control device which in combination with the chain-driven charbroiler has been tested in accordance with the test method specified in subdivision (g) and certified by the Executive Officer, or other control device or method found to be as or more effective than the catalytic oxidizer in reducing PM and VOC emissions in accordance with the test method specified in subdivision (g) and certified by the Executive Officer.

(3) No person shall operate a new chain-driven charbroiler after November 14, 1997 unless it is equipped and operated with a catalytic oxidizer control device, and this combination charbroiler/catalyst has been tested in accordance with the test method specified in subdivision (g) and certified by the Executive Officer, or other control device or method if found to be as or more effective than the catalytic oxidizer in reducing PM and VOC emissions in accordance with the test protocol specified in subdivision (g) and certified by the Executive Officer.

(4) Catalytic oxidizers or other control devices shall be maintained in good working order to minimize visible emissions to the atmosphere, and operated, cleaned, and maintained in accordance with the manufacturer's specifications in a maintenance manual or other written materials supplied by the manufacturer or distributor of the catalyst or other control device, or chain-driven charbroiler.

(d) Recordkeeping

(1) Owners and operators of chain-driven charbroilers equipped with control equipment shall, at the time of occurrences listed in subparagraphs (d)(1)(A) and (B), record such actions and retain the records for a period of not less than five years. These records shall be made available to a District representative upon request. Records shall consist of:

(A) the date of installation or changing of any catalyst or, if applicable, other certified control device; and

(B) the date and time of cleaning and maintenance performed for the catalyst or, if applicable, other certified control device.

(2) Owners and operators of chain-driven charbroilers operating under an exemption from provisions of this rule pursuant to subdivision (e), shall maintain weekly records of the amount of meat cooked and monthly records of the amount of meat purchased. These records shall be retained on the restaurant premises for a period of not less than five years and made available to a District representative upon request.

(3) Persons may request use of alternative recordkeeping, provided the Executive Officer and EPA have determined, in writing, that the alternative recordkeeping method provides equivalent compliance assurance as the records specified in paragraphs (d)(1) or (d)(2).

(e) Exemption

An owner or operator of a chain-driven charbroiler may apply for an exemption from provisions of paragraphs (c)(1) through (c)(4) and (d)(1):

(1) based on accepting a permit condition limiting the amount of meat cooked on the chain-driven charbroiler to less than 875 pounds per week; or

(2) by supplying evidence from testing pursuant to the test method specified in subdivision (g), demonstrating that emissions from the chain-driven charbroiler are less than the one pound per day of any criteria air

contaminant, and accepting permit conditions necessary to preclude an exceedance of that level of emissions.

(f) Evaluations

The Executive Officer will evaluate Rule 1138 and report to the Governing Board, no later than 18 months from the date of its adoption, to assess the feasibility of emission reductions and whether cost-effective control devices or other methods are available for the control of emissions from under-fired charbroilers and potentially other commercial restaurant cooking equipment.

(g) Test Methods

The District's Protocol - Determination of Particulate and Volatile Organic Compound Emissions from Restaurant Operations shall be used to determine the pounds of PM and VOC per 1,000 pounds of meat cooked.

11/12/85

(Adopted February 1, 1980)(Amended August 2, 1985)

RULE 1140. ABRASIVE BLASTING

(a) Definitions

For the purpose of this rule the following definitions shall apply:

(1) Abrasive is any material used in an abrasive blasting operation including but not limited to sand, slag, steel shot, garnet or walnut shells.

(2) Abrasive Blasting is the cleaning or preparing of a surface by forcibly propelling a stream of abrasive material against the surface.

(3) Abrasive Blasting Equipment is any equipment used in abrasive blasting operations.

(4) Brushoff Blasting is a method of cleanup performed in order to achieve surface uniformity or impurity removal after wet blasting, hydroblasting, or vacuum blasting operations.

(5) Confined Blasting is any abrasive blasting conducted in an enclosure which significantly restricts air contaminants from being emitted to the ambient atmosphere, including but not limited to shrouding, tanks, drydock, buildings, structures.

(6) Facility is any property site at which one or more abrasive blasting operations, either confined or unconfined, are carried out or maintained as part of an identifiable business.

(7) Hydroblasting is any abrasive blasting using high pressure liquid as the propelling force.

(8) Multiple Nozzle describes more than one nozzle being used to abrasive blast the same surface in such close proximity that their separate plumes are indistinguishable.

(9) Permanent Abrasive Blasting Operation or Equipment is any abrasive blasting operation conducted, or abrasive blasting equipment located, in a building which is used, in whole or i. part, for abrasive blasting operations.

(10) Sandblasting is abrasive blasting.

(11) Source is the impact surface from any single abrasive blasting nozzle.

(12) Steel or Iron Shot/Grit are abrasives which meet either the Society of Automotive Engineers recommended practices J827 and J444 or Steel Founders' Society of American Standards 21-68 or 20T-66, as those practices and standards existed on February 24, 1984.

(13) Unconfined Blasting is any abrasive blasting which does not conform with definitions (5) or (9) of this section.

(14) Vacuum Blasting is any abrasive blasting in which the spent abrasive and surface material is immediately collected by a vacuum device.

(15) Wet Abrasive Blasting is any abrasive blasting using compressed air as the propelling force, which in the judgment of the Executive Officer uses an amount of water adequate to minimize the plume.

(b) Operating Requirements

(1) No person shall, if he complies with an applicable performance standard in section (b)(4), discharge into the atmosphere from any abrasive blasting any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(A) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines, or

(B) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in section (b)(1)(A).

(2) No person shall, if he is not complying with an applicable performance standard in section (b)(4), discharge into the atmosphere from any abrasive blasting any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(A) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or

(B) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in section (b)(2)(A).

(3) Compliance with all provisions of this rule does not exempt any person from complying with the requirements of Rule 402, Nuisance.

(4) Any abrasive blasting operation except as provided for in section (c)(2) shall comply with at least one of the following performance standards:

(A) Confined blasting shall be used;

(B) Wet abrasive blasting shall be used;

(C) Hydroblasting shall be used; or

(D) Dry unconfined blasting shall use abrasives as defined in section (c).

(5) Surface preparation for raised traffic delineating markers and pavement marking removal using abrasive blasting shall comply with at least one of the following performance standards:

(A) Wet abrasive blasting, hydroblasting, or vacuum blasting shall be used;

(B) Dry unconfined abrasive blasting for removal or surface preparation for immediate application of pavement markings of less than 1,000 square feet or for surface preparation for raised traffic delineating markers shall use abrasives as defined in section (c)(1).

(6) Confined abrasive blasting shall be used for all abrasive blasting operations at a facility except under the following conditions:

(A) When steel or iron shot/grit is used.

(B) When the item to be abrasive blasted exceeds 8 feet in height, 8 feet in width, or 10 feet in length; or

(C) When the structure or surface is abrasive blasted at its permanent or ordinary location.

(7) Abrasive blasting of stucco and concrete shall be performed by wet abrasive blasting, hydroblasting, or vacuum blasting, except dry abrasive blasting may be used for:

(A) Window and door returns and frames.

(B) Eaves, overhangs, and ceilings.

(C) Brushoff blasting except for stucco surfaces.

(D) Completely shrouded structures and blast areas that control emissions.

(E) Abrasive cleaning operations other than aggregate exposure or paint removal related to new concrete construction or repair activity if such operations are performed onsite.

(c) Requirements for Abrasives

(1) Except as provided in section (c)(3) all abrasives used for dry unconfined blasting shall comply with the following performance standards:

(A) Before blasting the abrasive shall not contain more than 1 percent by weight material passing a No. 70 U.S. Standard sieve.

(B) After blasting, the abrasive shall not contain more than 1.8 percent by weight material five microns or smaller.

(2) No person shall conduct dry unconfined blasting unless the abrasive(s) used in such operation have been certified by the Air Resources Board, on at least an annual basis, to comply with the performance standards set forth in section (c)(1).

(3) Certified abrasives reused for dry unconfined blasting are exempt from section (c)(1)(B), but must conform to section (c)(1)(A).

(4) All manufacturers and suppliers of abrasives certified for dry unconfined abrasive blasting shall legibly and permanently label the invoice, bill of lading and abrasive packaging or container with the following information:

(A) The manufacturer's name or identifiable trade name.

(B) The grade or brand name of the abrasive.

(C) The statement "ARB certified for dry unconfined blasting".

(5) A blend of certified abrasives shall be considered certified.

(d) Test Method

All abrasives used for dry unconfined blasting shall comply with the performance requirements of sections (c)(1)(A) and (c)(1)(B) when tested in accordance with "Method of Test for Abrasive Media Evaluation, Test Method No. Calif. 371-A", or other test method approved by the Executive Officer.

(e) Visible Emission Evaluation

Visible emission evaluation of abrasive blasting operations shall be conducted in accordance with the following provisions:

(1) Emissions shall be read in opacities and recorded in percentages.

(2) The light source should be behind the observer during daylight hours.

(3) The light source should be behind the emission during hours of darkness.

(4) The observer position should be at approximately right angles to wind direction and at a distance no less than twice the height of the source but not more than a quarter mile from the base of the source.

(5) Emissions from unconfined abrasive blasting shall be read at the densest point in the plume, which point shall be at least 25 feet from the source.

(6) Where the presence of uncombined water is the only reason for failure to comply with opacity limits, the opacity limits shall not apply. The burden

of proof in establishing that opacity limits shall not apply shall be upon the operator.

(7) Emissions from unconfined abrasive blasting employing multiple nozzles shall be evaluated as a single source unless it can be demonstrated by the operator that each nozzle, evaluated separately, meets the requirements of this rule.

(8) Emissions from confined abrasive blasting shall be read at the densest point after the air contaminant leaves the enclosure.

(f) Effective Dates

The owner or operator of any abrasive blasting operation subject to this rule shall comply with the provisions of this rule on the date of adoption.

3/14/01

(Adopted July 8, 1983) (Amended November 2, 1984)(Amended Dec. 7, 1990)
(Amended April 3, 1992)(Amended November 17, 2000)

RULE 1141. CONTROL OF VOLATILE ORGANIC COMPOUND EMISSIONS FROM RESIN MANUFACTURING

(a) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) BLENDING TANK is a vessel in which resin and/or solvent and/or other materials are added, normally to produce a final product blend.

(2) COMPLETED RESIN is resin solids, solvents, and additives as delivered for sale or use.

(3) CONDENSER is a jacketed tube which has a cooling fluid, often water, flowing through the jacket and which cools and liquefies gases entering the inside of the tube.

(4) CONTINUOUS POLYSTYRENE PROCESS is the reaction of styrene and other ingredients and the purification of the reaction products, to produce a normally uninterrupted flow of resin.

(5) DILUENT RECOVERY SECTION consists of equipment used to separate process diluent from reaction by-products.

(6) EXEMPT COMPOUNDS is as defined in Rule 102.

(7) HIGH-DENSITY POLYETHYLENE RESIN is a linear thermoplastic polymer of ethylene with a density of greater than 0.94 grams per cubic centimeter.

(8) LIQUID-PHASE HIGH-DENSITY POLYETHYLENE SLURRY PROCESS is the reaction of ethylene and other ingredients, and the purification of the reaction products, to produce a normally uninterrupted flow of high-density polyethylene resin.

(9) LIQUID-PHASE POLYPROPYLENE PROCESS is the reaction of propylene and other ingredients, and the purification of the reaction products, to produce a normally uninterrupted flow of resin.

(10) ORGANIC RESIN REACTOR is any piece of equipment in which organic and/or other materials are reacted to produce an organic resin. A reactor may include a stripping column, condensers, and a water separator, whose purpose is to return the evaporated solvent to the reaction vessel.

(11) PRODUCT FINISHING SECTION consists of equipment used to dry, extrude, pelletize, or otherwise prepare completed resin prior to packaging or storage.

(12) RECYCLE TREATERS consist of equipment which removes water and other impurities in the recycle ethylene stream.

(13) RESIN, as defined by the American Society for Testing Materials (ASTM), is a solid or semi-solid, water-insoluble, organic material with little or no tendency to crystallize and is used as the basic components of plastics and/or as a component of surface-coating formulations.

(14) RESIN MANUFACTURER is a person who reacts organic compounds to produce a resin and is classified as 2821 in the Standard Industrial Classification Manual (Office of Management and Budget, Executive Office of the President).

(15) SLURRY VACUUM FILTER SYSTEM consists of equipment used to separate atactic and isotactic polymer.

(16) STYRENE RECOVERY SYSTEM consists of equipment that separates styrene monomer from reaction by-products.

(17) THINNING TANK is a vessel which receives resin and/or other reaction products from an organic resin reactor and to which solvents may be added.

(18) VACUUM DEVOLATILIZER SYSTEM consists of equipment used in the vacuum separation of polystyrene from styrene monomer and reaction by-products.

(19) VENT is a port or opening that allows gases to discharge to the atmosphere when leaving a reactor or other equipment. Where a product recovery condenser is used, the vent is the point of discharge from the condenser to the atmosphere.

(20) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(b) Requirements

(1) A resin manufacturer shall not manufacture organic resin unless the total emissions of volatile organic compounds (VOC), from the organic resin reactor, thinning tank and blending tank vents, before being vented to the atmosphere, are reduced:

(A) to 0.5 pound per 1000 pounds of completed resin produced, or

(B) by 95 percent or more.

(2) A resin manufacturer shall not manufacture organic resin by a continuous polystyrene process unless the total emissions of VOC from vacuum devolatilizer system and styrene recovery system, before being vented into the atmosphere, are reduced to 0.12 pound per 1000 pounds of completed resin produced.

(3) A resin manufacturer shall not manufacture organic resin by a liquid-phase high-density polyethylene slurry process unless the total emissions of VOC from the organic resin reactor, recycle treaters, thinning tank, blending tank and product finishing section, before being vented to the atmosphere are reduced by 98 percent or more.

(4) A resin manufacturer shall not manufacture organic resin by a liquid-phase polypropylene process unless the total emissions of VOC from the organic resin reactor, slurry vacuum filter system, diluent recovery section, and product finishing section vents, before being vented to the atmosphere, are reduced by 98 percent or more.

(c) Recordkeeping Requirements

(1) Daily Recordkeeping: A resin manufacturer shall maintain daily records. Such records shall be kept at the facility for at least two years, and shall be made available to the District upon request. The records shall include the following:

(A) the amount and type of each resin produced; and

(B) daily VOC emissions.

(2) Monthly Recordkeeping Option: In lieu of complying with the requirements of paragraph (c)(1), a resin manufacturer may choose to maintain monthly records provided the resin manufacturing equipment or process is not subject to a daily production limit or daily emission limit in any applicable District rules(s) or permit(s). Such records shall be kept at the facility for at least two years, and shall be made available to the District upon request. The records shall include the following:

(A) the amount and type of each resin produced; and

(B) monthly VOC emissions.

(d) Compliance Test Methods

For the purpose of this rule, the following test methods shall be used:

(1) The capture efficiency of the emissions collection system shall be determined by the USEPA method cited in 55 FR (Federal Register) 26865, June 29, 1990.

(2) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by:

(A) For total organics: USEPA Test Methods 25, 25A, or SCAQMD Method 25.1;

(B) For exempt compounds: USEPA Method 18, or ARB Method 422.

Emissions determined to exceed any limits established by this rule through the use of either of the above-referenced test methods shall constitute a violation of the rule.

(3) The following classes of compounds will be considered for compliance with subdivision (b), only if the manufacturer specifies which individual compounds are present in the coating formulations or process and identifies the test methods approved by the USEPA and SCAQMD that can be used to quantify the amounts of each exempt compound: cyclic branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

(e) Exemptions

(1) The provisions of subdivision (b) shall not apply to any facility that emits less than a total of ten pounds of volatile organic compounds per day to the atmosphere from all of the equipment subject to this rule.

(2) The provisions of subdivision (b) shall not apply to any facility that emits less than a total of 220 pounds of volatile organic compounds per calendar month to the atmosphere from all of the equipment subject to this rule.

3/14/01

(Adopted November 4, 1983)(Amended December 7, 1990)
(Amended March 6, 1992)(Amended November 17, 2000)

RULE 1141.1. COATINGS AND INK MANUFACTURING

(a) Definitions

For the purpose of this rule the following definitions shall apply:

(1) COATINGS MANUFACTURER is an establishment that mixes, blends, and/or compounds paints, varnishes, lacquers, enamels, shellacs, or sealers, and is classified as 2851 in the Standard Industrial Classification Manual.

(2) EXEMPT COMPOUND is as defined in Rule 102.

(3) GRINDING MILLS are mills with cylindrical chambers containing grinding media such as balls, pebbles, or sand that grind and disperse coating solids.

(4) HIGH SPEED DISPERSION MILL is a mixer with one or more blades that rotate at high speed in order to disperse coating solids.

(5) INK MANUFACTURER is an establishment that mixes, blends, and/or compounds printing inks and is classified as 2893 in the Standard Industrial Classification Manual.

(6) PASTE INK is an ink that contains, primarily, McGee oil and glycol as solvent.

(7) ROLLER MILLS are mills with horizontal rollers that grind and disperse coating solids.

(8) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(9) WATERBASED COATING is a paint, varnish, lacquer, enamel, shellac, sealer or ink that contains ten percent or more, by weight, of water, as determined by the analytical procedures in SCAQMD Test Method 304 (SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual).

(b) Requirements

(1) A person shall not manufacture coatings and/or inks unless:

(A) Portable mixing vats are kept covered, except to add ingredients or to take samples, with lids:

(i) that extend at least 1/2 inch beyond the outer rim of the vat or are attached to the rim of the vat; and

(ii) are maintained in good condition such that, when in place, they maintain contact with the rim for at least 90 percent of the circumference of the rim of the vat; and

(iii) may have a slit to allow clearance for insertion of a mixer shaft. The slit shall be covered after insertion of the mixer, except to allow safe clearance for the mixer shaft.

(B) Stationary mixing vats are covered except to add ingredients or take samples.

(2) A person shall not manufacture coatings and/or inks unless:

(A) portable mixing vat cleaning is done in a way which minimizes the emissions of VOC into the atmosphere and the cleaning method is approved by the Executive Officer.

(B) stationary vat cleaning is done in a way which minimizes the emissions of VOC into the atmosphere and cleaning method is approved by the Executive Officer.

(C) high-speed dispersion mills, grinding mills, and roller mills are cleaned in a way which minimizes the emissions of VOC into the atmosphere and is approved by the Executive Officer.

(3) Grinding mills installed after January 1, 1985 shall have fully enclosed screens.

(c) Recordkeeping Requirements

A coating or ink manufacturer shall maintain daily records. Alternatively, records may be kept on a monthly basis provided the coating or ink manufacturing equipment or process is not subject to a daily production limit or daily VOC limit in any applicable District rule(s) or permit(s). Such records shall be kept at the manufacturing facility for at least two years, and shall be made available to the District upon request. The records shall include the following:

(1) the type and amount of each coating or ink manufactured;

(2) the type and amount of the VOC containing materials used in the manufacture of each coating or ink;

(3) the type, amount and VOC content of all clean-up solvents used (including exempt compounds).

(d) Exemptions

(1) The provisions of this rule, except subdivision (c), shall not apply to a coatings and/or ink manufacturer which produces less than 500 gallons of coatings and/or ink in any one day.

(2) The provisions of this rule, except subdivision (c), shall not apply to a coatings and/or ink manufacturer which produces less than 11,000 gallons of coatings and/or ink in any one calendar month.

(3) The provisions of paragraph (b)(1) of this rule shall not apply to equipment while it is being used in the production of waterbased coatings and/or paste inks.

(4) The provisions of paragraphs (b)(1) and (b)(2) of this rule shall not apply to equipment used to produce coatings in vats with a volume of 12 gallons or less.

(Adopted July 6, 1984)(Amended November 17, 2000)
(Amended January 11, 2002)

RULE 1141.2. SURFACTANT MANUFACTURING

(a) Applicability

This rule applies to all manufacturers of surface-active agents, including detergents, wetting agents, and emulsifiers.

(b) Definitions

For the purpose of this rule the following definitions shall apply:

(1) CONDENSER is a jacketed tube which has a cooling fluid, often water, flowing through the jacket and which cools and liquefies gases flowing through the inside of the tube.

(2) DEGASSER is any piece of equipment which removes dissolved gases from liquids.

(3) LABORATORY APPROVAL PROGRAM (LAP) is a program administered by the District that grants test-method-specific approvals to independent testing laboratories or firms that perform tests to determine compliance with District rules and regulations.

(4) MINERALIZER is any piece of equipment in which minerals or chemicals, such as lime or iodine, are suspended in a surfactant.

(5) NEUTRALIZER is any piece of equipment in which materials are added to a liquid in order to change the acidity or alkalinity of the liquid.

(6) SOAP is a substance used with water to produce suds for washing or cleaning and is the sodium or potassium salts of fatty acids produced by the action of an alkali, such as caustic soda or potash, on fats or oils.

(7) STRIPPER is any piece of equipment which removes a material from a mixture of materials.

(8) SURFACTANT is a surface-active agent, which is any compound that reduces surface tension or interfacial tension, when in solution. Surfactants are divided into three categories: detergents, wetting agents, and emulsifiers.

(9) SURFACTANT MANUFACTURER is a person who produces a synthetic surfactant, most commonly by reacting an organic compound with a sulfonating or sulfating compound.

(10) SURFACTANT MANUFACTURING EQUIPMENT includes any or all of the following equipment: surfactant reactors, process condensers, degassers, neutralizers, strippers, and mineralizers.

(11) SURFACTANT REACTOR is any equipment is which organic and/or other materials are reacted to produce a surfactant; this may include stripping columns, condensers, and water separators.

(12) VENT is a port or opening whose function is to allow gases to discharge to the atmosphere when leaving a reactor or other equipment.

(13) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(c) Requirements

A surfactant manufacturer shall not produce surfactants unless:

(1) the total emissions of volatile organic compounds (VOC) from the surfactant manufacturing equipment, before being vented to the atmosphere, are reduced:

(A) to 0.5 pound per 1000 pounds of surfactant produced, or

(B) by 95 percent (wt) or more; and

(2) all ports used for inspection, taking samples, or adding ingredients are closed when not in use.

(d) Compliance

(1) A surfactant manufacturer shall:

(A) On or before January 1, 1985, submit for District approval, a Compliance Plan describing the methods and equipment to be used to achieve compliance with subparagraph (c)(1)(A) or (c)(1)(B), and

(B) On or before July 1, 1986, submit applications for new permits to construct or operate, as necessary, for new or modified equipment involved in such methods.

(2) On or after July 1, 1986, a surfactant manufacturer shall operate under the approved conditions specified in the Compliance Plan for compliance with paragraph (c)(1), and/or under conditions included in permits to construct or operate issued for applications submitted pursuant to subparagraph (d)(1)(B).

(e) Test Methods

The following test methods and procedures shall be used to determine compliance with this rule. All test methods referenced below shall be the most recent version issued by the respective organization. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.

(1) Determination of Efficiency of Emission Control Systems:

(A) The capture efficiency of an emission control system shall be determined by verifying the use of a Permanent Total Enclosure (PTE) and 100% capture efficiency as defined by US EPA Method 204, "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if a US EPA Method 204 defined PTE is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in the US EPA technical guidance document "Guidelines for Determining Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the US EPA technical guidelines shall be determined by:

(i) The Temporary Total Enclosure (TTE) approach of US EPA Methods 204 through 204F (40 CFR, part 51, Appendix M); or

(ii) The District "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency."

(B) The control equipment efficiency of an emission control system, on a mass emissions basis, and the VOC concentrations in the exhaust gases shall be determined by US EPA Test Methods 25, Gaseous Nonmethane Organic Emissions, 25A, Gaseous Organic Concentration (Flame Ionization), District Method 25.1, Total Gaseous Non-Methane Organic Emissions, or District Method 25.3, Determination of Low Concentration Non-Ethane Non-Methane Organic Compound Emissions from Clean-fueled Combustion Sources, as applicable. US EPA Test Method 18, (40 CFR, part 60, Appendix A) VOC by Gc, or ARB Method 422,

Exempt Halogenated VOCs I Gases, shall be used to determine emissions of exempt compounds.

(C) The overall efficiency of an emission control system for determining compliance with subparagraph (c)(1)(A) or (c)(1)(B) shall be determined using the following equation (all efficiencies expressed in percent):

Overall Efficiency = (Capture Efficiency) x (Control Equipment Efficiency)/100

(2) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(3) All test methods referenced in this section shall be the most recent version approved by the Executive Officer, CARB, and EPA.

(4) Laboratory Approval

The sampling, analysis, and reporting shall be conducted by a laboratory that has been approved under the District Laboratory Approval Program (LAP) for the cited District reference test methods, where LAP approval is available. For District reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one year after the date that the LAP program becomes available for that District reference test method.

(f) Exemptions

The provisions of this rule shall not apply to:

(1) Soap manufacturing operations,

(2) Facilities that only blend and package surfactants,

(3) Facilities that emit less than 5 pounds per day or less than 110 pounds per calendar month of VOC from surfactant manufacturing. Records of VOCs emitted shall be maintained pursuant to Rule 109.

(g) Fees

For the purpose of determining the appropriate processing fees only, the filing of a Compliance Plan(s) as provided in paragraph (d)(1) shall be considered the

equivalent of filing an application for a permit. The person submitting the Plan shall be assessed a filing and an evaluation fee as described in Rule 306.

1/28/92

(Adopted July 19, 1991)

RULE 1142. MARINE TANK VESSEL OPERATIONS

(a) Applicability

This rule shall apply to all loading, lightering, ballasting, and housekeeping events where a marine tank vessel is filled with an organic liquid; or where a liquid is placed into a marine tank vessel's cargo tanks which had previously held organic liquid.

(b) Definitions

(1) BACKGROUND is the ambient concentration of volatile organic compounds in the air determined at least one (1) meter upwind of the component being inspected.

(2) BALLASTING is the loading of water or other liquid into a marine tank vessel's cargo tank to obtain proper propeller, rudder, and hull immersion.

(3) SOUTH COAST WATERS means the Pacific Ocean area beginning at the intersection of the Pacific Ocean and the Los Angeles-Ventura County boundary; and proceeding southwesterly to the intersection of the boundary of the California Coastal Waters at a point having the coordinates of 33° North Latitude and 119.5° West Longitude; then southeasterly along said boundary of the California Coastal Waters to a point having the coordinates of 32.5° North Latitude and 118.5° West Longitude; and then northeasterly to the intersection of the Pacific Ocean and the Orange-San Diego County boundary.

(4) EMISSION CONTROL EQUIPMENT means any equipment, machinery, apparatus, or device used to collect, store, or reduce the emissions of volatile organic compounds in the atmosphere.

(5) EXEMPT COMPOUNDS are any of the following compounds that have been determined to be non-precursors of ozone:

(A) Group I

chlorodifluoromethane (HCFC-22)
dichlorotrifluoroethane (HCFC-123)
tetrafluoroethane (HFC-134a)
dichlorofluoroethane (HCFC-141b)
chlorodifluoroethane (HCFC-142b)

(B) Group II

methylene chloride
1,1,1-trichloroethane (methyl chloroform)
trifluoromethane (FC-23)
trichlorotrifluoroethane (CFC-113)
dichlorodifluoromethane (CFC-12)
trichlorofluoromethane (CFC-11)
dichlorotetrafluoroethane (CFC-114)
chloropentafluoroethane (CFC-115)

In the future, the use of Group II compounds may be regulated by the District because they are toxic or potentially toxic, upper atmospheric ozone depleters, or cause other environmental impacts. The District Board has adopted a policy which states that chlorofluorocarbons (CFC) will be phased out at the earliest practicable date on or before 1997.

(6) GASEOUS LEAK means a condition that exists when the reading on a portable hydrocarbon meter, measured 1 centimeter or less from any source, exceeds 1,000 parts per million, expressed as methane, above background.

(7) HOUSEKEEPING consists of altering the composition of gases contained within marine vessel tanks by tank washing, gas freeing, or purging.

(8) LIQUID LEAK means a leak of more than three drops per minute of organic liquid.

(9) LIGHTERING is the transfer of organic liquid into a cargo tank from one marine tank vessel to another.

(10) LOADING EVENT means an incident or occurrence beginning with the connecting of marine terminal storage tanks or a marine tank vessel to marine tank vessel cargo tank(s) with pipes or hoses followed by the transfer of liquid cargo and ending with the disconnecting of the pipes or hoses; or any other means of placing liquid into cargo tanks. In addition, emissions resulting from the venting of volatile organic compounds in South Coast Waters prior to, during, or after a loading event are included in that loading event.

(11) MARINE TANK VESSEL means any tugboat, tanker, freighter, passenger ship, barge, boat, ship, or watercraft, which is specifically constructed or converted to carry liquid cargo in tanks.

(12) MARINE TERMINAL means any facility, equipment, or structure constructed to handle the loading or unloading of organic liquid into or out of marine tank vessels.

(13) ORGANIC LIQUID means gasoline, gasoline blending stocks, aviation gas and aviation fuel (JP-4 type), crude oil and other liquids containing volatile organic compounds.

(14) VOLATILE ORGANIC COMPOUND means any chemical compound which contains the element carbon, except methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(c) Requirements

(1) Marine Tank Vessels

(A) Effective January 1, 1992, an owner or operator of a marine tank vessel equipped with emission control equipment shall operate such equipment while conducting a loading, lightering, ballasting, or housekeeping event in South Coast Waters.

(B) Effective January 1, 1994 a loading, lightering, ballasting, or housekeeping event shall not be conducted while in South Coast Waters, unless:

(i) The emissions of volatile organic compounds are limited to 5.7 grams per cubic meter (2 lbs per 1,000 barrels) of liquid loaded into a marine tank vessel; or

(ii) The emissions of volatile organic compounds are reduced by at least 95 percent by weight from uncontrolled conditions.

(2) Liquid and Gaseous Leaks

Effective January 1, 1994, all hatches, pressure relief valves, connections, gauging ports and vents, and other equipment associated with a loading, lightering, ballasting, or housekeeping event shall be maintained free of liquid or gaseous leaks. Any liquid or gaseous leak shall be tagged upon

detection and repaired within 4 hours of detection by the owner or operator. Any liquid or gaseous leak detected by District staff shall constitute a violation of this rule.

(3) Emission Control Equipment

The emission control equipment shall be designed and operated to collect, store, and process all emissions of volatile organic compounds resulting from a loading, lightering, ballasting, or housekeeping event.

(d) Compliance Schedule

Any owner or operator of a marine tank vessel or a terminal shall submit to the District Executive Officer an application for a Permit to Construct by April 1, 1992, for any equipment required to comply with the provisions of this rule.

(e) Test Methods

(1) Determination of Emissions

Emissions of volatile organic compounds specified in subparagraph (c)(1)(B) shall be measured according to the Environmental Protection Agency's (EPA) Reference Method 25, Air Resources Board's (ARB) Method 2-4, District's Source Test Manual Method 25.1 (March 1989), or any other test method determined to be equivalent after review by the staffs of the District, the Air Resources Board, and the United States Environmental Protection Agency, and approved in writing by the District Executive Officer. This test shall be conducted for at least 30 minutes during the transfer of the last 50 percent of total liquid cargo. For events of less than one hour duration, the test shall include the entire last 50 percent of total liquid cargo.

(2) Determination of Exempt Compounds

Emissions of exempt compounds shall be measured according to Air Resources Board Method 422 adopted January 22, 1987, or any other test method determined to be equivalent after review by the staffs of the District, the Air Resources Board, and the United States Federal Environmental Protection Agency and approved in writing by the District Executive Officer.

(3) Determination of Vapor Processing System Efficiency

Mass emission rates of vapor processing systems specified in subparagraph (c)(1)(B) shall be determined according to EPA's Reference Method 25, ARB's Method 2-4, District's Source Test Manual Method 25.1 (March 1989) or any other test method determined to be equivalent after review by the staffs of the District, the Air Resources Board, and the United States Environmental Protection Agency, and approved in writing by the District Executive Officer.

(4) Determination of Gaseous Leaks

The screening of equipment for gaseous leaks shall be conducted according to EPA's Reference Method 21 or the procedures in the District's Source Test Manual, or any other test method determined to be equivalent after review by the staffs of the District, the Air Resources Board, and the United States Environmental Protection Agency, and approved in writing by the District Executive Officer.

(5) Determination of Compliance

Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of this rule.

(f) Safety and Emergency

Nothing in this rule shall be construed as to:

(1) Require any act or omission that would be in violation of any regulation or other requirement of the United States Coast Guard; or

(2) Prevent any act that is necessary to secure the safety of a vessel or the safety of the passengers or crew.

(g) Notice

Effective January 1, 1992, any owner or operator of a marine tank vessel intending to engage in a loading, lightering, ballasting, or housekeeping event shall notify the District Executive Officer in writing, or by telephone, or in person at least 48 hours prior to the event. Such notice shall include name(s) of marine tank vessel(s), description of operation(s), cargo, location, and estimated start time and duration of the event.

(h) Recordkeeping

Effective January 1, 1994, any owner or operator of a marine tank vessel shall maintain two sets of records regarding each loading, lightering, ballasting, or housekeeping event. One set of records will be kept on board the marine tank vessel and the other set shall be kept at the marine terminal. Records shall be maintained for at least two years and shall be made available to District staff upon request. Such records shall be submitted annually on standard forms specified by the District, and shall contain all information required on the form. The records shall include, but are not limited to, all of the following information:

(1) The location of each marine loading, lightering, ballasting, or housekeeping event.

(2) The owner or operator responsible for handling the marine loading, lightering, ballasting, or housekeeping event.

(3) The date(s) and times at which the marine tank vessel(s) arrived and departed from the location of the loading, lightering, ballasting, or housekeeping event.

(4) The name and registry of the vessel and legal owner of the marine tank vessel participating in the loading, lightering, ballasting, or housekeeping event.

(5) The prior cargo carried by the receiving marine tank vessel.

(6) The type and amount of liquid cargo loaded into the receiving marine tank vessel.

(7) The condition of the receiving marine tanks prior to being loaded (i.e., cleaned, crude oil washed, gas freed, etc.).

(8) The amount of ballast water or other liquid added to the unsegregated ballast tanks.

(9) The description of operating procedures to prevent venting while ballasting into unsegregated ballast tanks.

(10) The complete description of any gaseous or liquid leak detected, leak repair action taken, date and time of leak detection, time required to repair leak, and screening level after a repair has been made.

(i) Ozone Episode Days

(1) Effective January 1, 1992, a loading, lightering, ballasting or housekeeping event shall not be conducted on any day that the District predicts a Stage 1 or greater ozone episode for any area of the South Coast Air Basin, unless the emissions of volatile organic compounds are reduced by at least 95 percent by weight from uncontrolled conditions, or are limited to 5.7 grams per cubic meter (2 pounds for every 1,000 barrels) of liquid loaded.

(2) Any marine vessel or terminal operator, who has been subject to the prohibition of paragraph (i)(1) for two consecutive days, may conduct a marine loading, lightering, ballasting, or housekeeping event in South Coast Waters for up to three days following the two consecutive days of prohibition.

(Adopted March 6, 2009) (Amended June 4, 2010)(Amended July 9, 2010)
(Amended December 3, 2010)

RULE 1143. CONSUMER PAINT THINNERS & MULTI-PURPOSE SOLVENTS

(a) Purpose

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs) from the use, storage and disposal of consumer paint thinners and multi-purpose solvents commonly used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content.

(b) Applicability

This rule is applicable to any person who supplies, sells, offers for sale, or manufactures consumer paint thinners and multi-purpose solvents for sale in the District, as well as any person who uses or solicits the use of any consumer paint thinner and multi-purpose solvent within the District.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) ARTIST SOLVENTS/THINNERS are any liquid products that meet and are labeled to meet the requirements of ASTM D4236-94 (Reapproved 2005) Standard Practice for Labeling Art Materials for Chronic Health Hazards, which is incorporated by reference herein, and have been refined to remove impurities for artistic use for the purpose of reducing the viscosity of, or removing, art coating compositions or components. Artist Solvents/Thinners do not include commercial-grade solvents or thinners.

(2) CONSUMER MULTI-PURPOSE SOLVENTS are any liquid products designed or labeled to be used for dispersing or dissolving or removing contaminants or other organic materials for personal, family, household, or institutional use including but not limited to the following: (1) products that do not display specific use instructions on the product container or packaging, (2) products that do not specify an end-use function or application on the product container or packaging, (3) solvents used in institutional facilities, except for laboratory reagents used in analytical, educational, research, scientific or other laboratories, (4) “Paint clean-up”

products, and (5) products labeled to prepare surfaces for painting. For the purpose of this definition only, "Paint clean-up" means any liquid product labeled for cleaning oil-based or water-based paint, lacquer, varnish, or related coatings from, but not limited to, painting equipment or tools, plastics or metals.

"Consumer Multi-purpose Solvents" do not include solvents used in cold cleaners, vapor degreasers, conveyorized degreasers or film cleaning machines, or solvents that are incorporated into, or used exclusively in the manufacture or construction of, the goods or commodities at the site of the establishment. "Multi-purpose Solvents" also do not include any products making any representation that the product may be used as, or is suitable for use as a consumer product which qualifies under another definition in California Code of Regulations Title 17, § 94508 as of the date of adoption.

(3) CONSUMER PAINT THINNERS are any liquid products used for reducing the viscosity of coating compositions or components for personal, family, household, or institutional use, including, but not limited to, products that prominently display the term "Paint Thinner," "Lacquer Thinner," "Thinner," or "Reducer" on the front panel of its packaging.

(4) DISTRIBUTOR means any person to whom consumer products are sold or supplied for the purposes of resale or distribution in commerce, except that manufacturers, retailers, and consumers are not distributors.

(5) EXEMPT COMPOUND is as defined in Rule 102.

(6) FORMULATION DATA is the actual product recipe which itemizes all the ingredients contained in a product including VOCs and the quantities thereof used by the manufacturer to create the product. Material Safety Data Sheets (MSDS) are not considered formulation data.

(7) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where:

W_s = weight of volatile compounds in grams

W_w = weight of water in grams

W_{es} = weight of exempt compounds in grams

V_m = volume of the material in liters

(8) INDUSTRIAL MAINTENANCE COATINGS are coatings, including primers, sealers, undercoaters, intermediate coatings and topcoats, formulated for or applied to substrates, including floors that are exposed to one or more of the following extreme environmental conditions:

(A) immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposure of interior surfaces to moisture condensation;

(B) acute or chronic exposure to corrosive, caustic or acidic agents, or similar chemicals, chemical fumes, chemical mixtures, or solutions;

(C) repeated exposure to temperatures in excess of 250 degrees Fahrenheit;

(D) repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial solvents, cleaners, or scouring agents; or

(E) exterior exposure of metal structures.

(9) LACQUER THINNERS are solvents that are manufactured for the purpose of thinning, diluting, dissolving, and for clean-up of lacquer coatings.

(10) MANUFACTURER means any person, company, firm, or establishment who imports, manufactures, blends, assembles, produces, packages, repackages, or re-labels a consumer paint thinner or multi-purpose solvent. The manufacturers listed on the product's label shall be primarily responsible for compliance with applicable provisions of this rule. If the label lists two or more manufacturers, they may mutually designate in writing a manufacturer responsible for compliance with this rule. That writing shall be filed with the Executive Officer.

(11) PERSON means any individual, firm, association, organization, partnership, business trust, corporation, company, contractor, supplier,

installer, user or owner, or any state or local governmental agency or public district or any other officer or employee thereof. "Person" also means the United States or its agencies to the extent authorized by Federal law.

(12) RESPONSIBLE PARTY for a corporation is a corporate officer or an authorized representative so delegated by a corporate officer. Delegation of an authorized representative must be made in writing to the Executive Officer. A responsible party for a partnership or sole proprietorship is the general partner or proprietor, respectively.

(13) RETAIL OUTLET means any establishment at which consumer products are sold, supplied, or offered for sale directly to consumers.

(14) SOLICIT is to require for use or to specify, by written or oral contract.

(15) SOLVENTS include diluents and thinners and are defined as organic materials which are liquids at standard conditions and which are used as dissolvers, viscosity reducers or cleaning agents.

(16) SOLVENT CLEANING is the removal of adhesives, inks, coatings, and contaminants which include, but are not limited to, dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas.

(17) SOLVENT FLUSHING is the use of a solvent to remove adhesives, inks, coatings, or contaminants from the internal surfaces and passages of the equipment by inducing a rapid flow of solvent through the equipment.

(18) VOC (VOLATILE ORGANIC COMPOUND) is as defined in Rule 102.

(19) VOC CONTENT means the total weight of VOC in a product expressed as a percentage of the product weight or as a mass-based concentration expressed in grams per liter of material (g/L) or pounds per gallon (lb/Gal).

(d) Requirements

(1) Except as provided in paragraph (d)(2), no person shall supply, sell, offer for sale, manufacture, blend, package or repackage any consumer paint thinner or multi-purpose solvent for use in the District unless the consumer paint thinner or multi-purpose solvent complies with the applicable VOC content limits set forth in the table below:

CATEGORY	EFFECTIVE 1/1/2010 VOC Content g/L or (lb/Gal)	EFFECTIVE 1/1/2011 VOC Content g/L or (lb/Gal)
Consumer Paint Thinner	300 (2.50)	25 (0.21)
Consumer Multi-Purpose Solvent	300 (2.50)	25 (0.21)

(2) Sell-Through Provision

(A) Any consumer paint thinner or multi-purpose solvent that is manufactured prior to the effective date of the applicable limit specified in paragraph (d)(1), and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, offered for sale, or used for up to one year after the specified effective date.

(B) Consumer paint thinners manufactured prior to July 9, 2010 and labeled for more than one use including industrial maintenance coating thinning, may be sold, supplied, offered for sale, or used up to April 1, 2011.

(3) The prohibition of sale specified in paragraphs (d)(1) and (d)(5) shall not apply to any manufacturer of consumer paint thinners or multi-purpose-solvents provided that the product was sold to an independent distributor that was informed in writing by the manufacturer about the compliance status of the product in the District.

(4) Any solvent container in which the contents therein are applied directly to a surface from said container by pouring, siphoning, brushing, rolling, padding, rag application or other means, shall be closed when not in use. These solvent containers include, but shall not be limited to: drums, buckets, cans, pails, trays or other application containers.

(5) General Prohibition

No person shall supply, sell, offer for sale, manufacture, blend, package, or repackage any consumer paint thinner or multi-purpose solvent for use in the District subject to the provisions of this rule with any materials that contain in the excess of 0.1% by weight any Group II exempt compounds listed in Rule 102. Cyclic, branched, or linear, completely methylated siloxanes (VMS) are not subject to this prohibition.

(e) Administrative Requirements

(1) No person shall sell, supply, offer for sale, manufacture, blend, package, or repackage for use in the District any "Flammable" or "Extremely Flammable" Consumer Paint Thinner or Multi-purpose Solvent named, on the Principal Display Panel as "Paint Thinner", "Multi-purpose Solvent", "Clean-up Solvent", or "Paint Clean-up".

(2) Paragraph (e)(1) does not apply to products that meet any of the following criteria:

(A) Products which include an attached "hang tag" or sticker that displays, at a minimum, the following statement: "Formulated to meet low VOC limits: see warnings on label".

(B) Products which include an attached "hang tag" or sticker that displays, at a minimum, the following statement: "Formulated to meet low VOC limits with [the common name of the chemical compound (e.g., 'Acetone', 'Methyl Acetate', etc.) that results in the product meeting the criteria for 'Flammable' or 'Extremely Flammable']".

(C) Products which include an attached "hang tag" as a second Principal Display Panel that displays, at a minimum, the following statement: "Formulated to meet low VOC limits" placed adjacent to and associated with the required Consumer Product Safety Commission (CPSC) warning.

(D) Products where the Principal Display Panel displays, in a font size as large as, or larger than, the largest font size of any other words on the panel, the following statement: "Formulated to meet low VOC limits" placed adjacent to and associated with the required CPSC warning.

(E) Products where the Principal Display Panel displays, in a font size as large as, or larger than, the largest font size of any other words on the panel, the common name of the chemical compound (e.g., "Acetone," "Methyl Acetate," etc.) that results in the product meeting the criteria for "Flammable" or "Extremely Flammable."

(F) Products that meet the labeling requirements of the CARB Consumer Product Regulation specified in title 17, CCR, section 94512(e) as adopted.

(G) Products that are manufactured on or before July 9, 2010.

None of the above labeling or notice requirements preclude the use of any additional labeling or notice for consumer education.

(3) For the purposes of paragraphs (e)(1) and (e)(2) a product is "Flammable" or "Extremely Flammable" if it is labeled as "Flammable" or "Extremely Flammable" on the product container, or if the product meets the criteria for these specified in title 16, Code of Federal Regulations, section 1500.3 (c)(6).

(4) Each product container shall clearly display the VOC content as determined from the actual product formulation data.

(5) The information required by paragraphs (e)(1) through (e)(3) shall be displayed on the product container such that it is readily observable without removing or disassembling any portion of the product container or packaging.

(6) No person shall remove, alter, conceal, or deface the information required by paragraphs (e)(1) through (e)(3) prior to final sale of the product.

(7) In conjunction with the changes in VOC content limits, the Executive Officer shall develop a public education and outreach program to inform consumers of potential product changes that use more flammable substances by jointly working with the local fire departments to include, but not be limited to: public service announcements in both English and Spanish to be aired on television and radio from October 2010 to January 2012; training retailers, including big box retailers at their corporate headquarters, in November 2010 about these potential changes so that they may alert their consumers; dissemination of 25,000 hardcopy brochures in several languages from November 2010 to January 2012; alerts through Twitter, and placement of electronic brochures and Public Service Announcements (PSAs) on AQMD, CARB, YouTube, local fire department and local city websites from November 2010 to January 2012. The Executive Officer shall report the status of the public education and outreach program to the Stationary Source Committee in November 2010 and in November 2011. The Executive Officer may extend the public education and outreach program beyond January 2012, if he determines that additional consumer education is needed.

(8) Point of sale containers, for sale or distribution, of any consumer paint thinner or multi-purpose solvent subject to this rule shall display the

maximum VOC content, as supplied, and the maximum VOC content after any dilution as recommended by the manufacturer.

(9) Point of sale containers, for sale or distribution, of any consumer paint thinner and multi-purpose solvent subject to this rule shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such consumer paint thinners and multi-purpose solvents shall file with the Executive Officer an explanation of each code.

(10) Any manufacturer that supplies consumer paint thinners and multi-purpose solvents with intent to sell in the District shall submit an application as specified by the Executive Officer to apply for a manufacturer identification (ID) number by the applicable date in subdivision (g). The application form shall be signed by the responsible party for manufacturer certifying that all information submitted (including electronic submittals) is true and correct. The Executive Officer shall be notified in writing within 30 days of any change in the responsible party for the manufacturer.

(11) On or before May 1, 2010, and each subsequent January 1 thereafter, all manufacturers subject to this rule shall provide to the District a list of all their U.S. distributors to whom they supply products subject to this rule, including but not limited to private label and toll manufactured products. The list shall be in a format determined by the Executive Officer and shall include the distributor's name, address, contact person and phone number.

(12) On or before April 1, 2010, and every subsequent April 1 (the official due date), each manufacturer subject to this rule shall submit an annual quantity and emissions report to the Executive Officer.

(f) Recordkeeping

(1) Manufacturers shall maintain a copy of the application receipt from the District. The receipt shall be maintained for five (5) years and made available upon request by the Executive Officer.

(2) Manufacturers shall maintain records to verify data necessary to determine annual consumer paint thinner and multi-purpose solvent sales subject to this rule and VOC emissions in the District, and compliance with applicable rules and regulations. The records shall be maintained for five

(5) years and made available upon request by the Executive Officer. Such records shall include but not be limited to:

(A) Product formulation records (to include VOC content):

(i) Laboratory reports [including percent weight of non-volatiles, water, and exempts (if applicable); density of the product; and raw laboratory data] of test methods conducted as specified in paragraph (i)(1), or

(ii) Product formulation data, including physical properties analyses, as applicable, with a VOC content calculation demonstration; and

(B) Production records including batch tickets with the date of manufacture, batch weight and volume; and

(C) Distribution records:

(i) Customer lists or store distribution lists or both (as applicable) and

(ii) Shipping manifests or bills of lading or both (as applicable); and

(D) Sales records consisting of point of sale receipts or invoices to local distributors or both, as applicable.

(g) Compliance Dates

(1) Consumer paint thinner and multi-purpose solvent manufacturers that begin to manufacture, supply, sell or offer for sale consumer paint thinners and multi-purpose solvents subject to this rule and for use in the District after July 1, 2009 shall submit the application required in paragraph (e)(10) no later than thirty (30) calendar days prior to manufacturing, supplying, selling, or offering for sale, any consumer paint thinner and multi-purpose solvent subject to this rule and for use in the District.

(2) Within thirty (30) calendar days after a change of consumer paint thinner and multi-purpose solvent manufacturer, the new consumer paint thinner and multi-purpose solvent manufacturer shall submit the application for a company ID number as required in paragraph (e)(10). That filing shall include the previous consumer paint thinner and multi-purpose solvent manufacturer's ID number.

(h) Information exempt from Disclosure

Information submitted to the Executive Officer may be designated as exempt from disclosure consistent with District guidelines implementing the California Public Records Act (Govt. Code §§ 6250-6276.48).

(i) Test Methods

For the purpose of this rule, the following test methods shall be used:

(1) Determination of VOC Content

The VOC content of materials subject to the provisions of this rule shall be determined by:

(A) U.S. EPA Reference Test Method 24 (Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A) with the exempt compound content determined by Method 303 (Determination of Exempt Compounds) in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or

(B) Method 304 [Determination of Volatile Organic Compounds (VOC) in Various Materials] in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

will be analyzed as exempt compounds for compliance with subdivision (d), only when manufacturers specify which individual compounds are used in the solvent formulations. In addition, the manufacturers must identify the U.S. EPA, CARB, and SCAQMD approved test methods, which can be used to quantify the amount of each exempt compound.

(2) Equivalent Test Methods

Other test methods determined to be equivalent upon approval in writing by the Executive Officer, CARB, and the U.S. EPA may also be used.

(3) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(4) All test methods referenced in this subdivision shall be the version most recently approved by the appropriate governmental entities.

(j) Exemptions

(1) The provisions of this rule shall not apply to:

(A) Solvents sold in this District for shipment outside of this District or for shipment to other manufacturers for repackaging.

(2) Paragraph (d)(1) of this rule shall not apply to:

(A) Solvents provided that they are labeled and designated exclusively for the clean-up of polyaspartic and polyurea coatings application equipment. This exemption does not apply if there are any additional use claims on the label or any other product literature. This exemption does not apply to any person selling or using the otherwise exempt solvent for a non-exempt purpose.

(B) Thinners provided that they are labeled and designated exclusively for the thinning of Industrial Maintenance (IM) coatings, Zinc-Rich IM Primers, and High Temperature IM Coatings. This exemption does not apply if there are any additional use claims on the label or any other product literature. This exemption does not apply to any person selling or using the otherwise exempt thinner for a non-exempt purpose.

(C) Artist solvents/thinners provided that they are labeled and designated exclusively to reduce the viscosity of, or remove, art coating compositions or components and are individually packaged in containers having a total capacity equal to or less than 1 liter.

(k) Severability

If any provision of this rule is held by judicial order to be invalid, or invalid or inapplicable to any person or circumstance, such order shall not affect the validity of the remainder of this rule, or the validity or applicability of such provision to other persons or circumstances. In the event any of the exceptions to this rule is held by judicial order to be invalid, the persons or circumstances covered by the exception shall instead be required to comply with the remainder of this rule.

(Adopted March 6, 2009)(Amended July 9, 2010)

RULE 1144 METALWORKING FLUIDS AND DIRECT-CONTACT LUBRICANTS

(a) Purpose

The purpose of Rule 1144 is to reduce volatile organic compound (VOC) emissions from the use of metalworking fluids and direct-contact lubricants at industrial facilities.

(b) Applicability

The rule applies to all persons who use metalworking fluids and direct-contact lubricants on products and parts during manufacture and assembly; and all manufacturers and suppliers who supply, sell, or offer for sale metalworking fluids and direct-contact lubricants for use at industrial facilities. This rule shall apply to all VOC containing fluids used for metalworking including metal removal, metal forming, metal treating or lubricating operations where the metalworking fluid or direct-contact lubricant comes into direct contact with products and parts including, but not limited to, blanking, broaching, coining, cutting, drilling, drawing, forming, forging, grinding, heading, honing, lapping, marquenching, milling, piercing, quenching, roll forming, rolling, stamping, tapping, threading, turning and wire drawing. The rule also applies to VOC containing fluids used for metal protection, including rust and corrosion prevention and inhibition, during the manufacture and assembly of products and parts. The provisions of this rule shall not apply to repair, maintenance or research operations.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) ASSEMBLED AIRCRAFT is any machine that is a complete vehicle, assembly of parts at an aircraft assembly facility or major partial section including wheel wells, fuselage sections, pressure decks, wings, blades or cockpit, designed to travel through the air, without leaving the earth's atmosphere, including airplanes, balloons, dirigibles, helicopters and missiles.

(2) DIRECT-CONTACT LUBRICANT is a fluid that comes into direct contact with the product or part during manufacturing or assembly and is used to reduce friction and to prolong the life of machine tools and

machinery. A direct-contact lubricant is not a metal forming fluid and is not a metal removal fluid.

(3) EXEMPT COMPOUND is as defined in Rule 102.

(4) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = Weight of volatile compounds in grams
W_w = Weight of water in grams
W_{es} = Weight of exempt compounds in grams
V_m = Volume of material in liters

(5) LAPPING is a manufacturing method that employs particles of an abrasive material, suspended in a liquid carrier, between rotating plates.

(6) MANUFACTURING is the use of tools and labor to make things for sale.

(7) METAL FORMING FLUID is a fluid used at the tool and workpiece interface to facilitate the flow of metal over the tool and to extend the life of the tool. Common metal forming operations include, but are not limited to, blanking, coining, drawing, forming, forging, heading, piercing, roll forming, stamping and wire drawing.

(8) METAL PROTECTING FLUID is fluid that inhibits or prevents the corrosion of metal surfaces. It is applied independently of any other metalworking, lubricating or cleaning application.

(9) METAL REMOVAL FLUID is a fluid used at the tool and workpiece interface to facilitate the removal of metal from the part, cool the part and tool, extend the life of the tool, and to flush away chips and debris. Common metal removal operations include, but are not limited to, broaching, cutting, drilling, grinding, honing, lapping, milling, tapping, threading and turning.

(10) METAL TREATING FLUID is a fluid used to remove heat from metal parts, affect their hardness, and/or change the grain structure of the metal. Common metal treating operations include, but are not limited to, marquenching and quenching.

(11) METALWORKING FLUID is a fluid that facilitates operations involving the working, protecting or modification of metals, including metal

forming, protecting, treating and removal, and may consist of straight oils, emulsifiable oils and synthetic and semi-synthetic fluids.

(12) MILITARY SPECIFIED PRESERVATIVE is a preventative or protecting fluid qualified under military specification and used in a military application.

(13) PRECISION METAL REMOVAL FLUID is a fluid used for carbide grinding machine tools, where the manufacturer of the machine tool specifies the viscosity of the fluid, or for machining of aluminum or magnesium in single or multiple spindle automatic machines.

(14) SINKER ELECTRICAL DISCHARGE MACHINING (EDM) is a method of removing material by a series of rapid recurring electric arcing discharges between an electrode and the workpiece, in the presence of an energetic electric field, in an insulating oil.

(15) SPACE VEHICLE is a vehicle designed to travel beyond the earth's atmosphere.

(16) SOLICIT is to require for use or to specify, by written or oral contract.

(17) SUPER COMPLIANT MATERIAL is any material containing 50 grams or less of VOC per liter of material.

(18) VANISHING OIL is a direct-contact lubricant or metalworking fluid with a flash point less than 200°F (93°C).

(19) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(d) Requirements

(1) VOC Content

A person shall not use or solicit the use of any metalworking fluid or direct-contact lubricant that has a VOC content in excess of the limits contained in Table A of this paragraph:

Table A – Fluid Categories and VOC Limits

FLUID	EFFECTIVE 1/1/2010 VOC g/l (lb/gal)	EFFECTIVE 1/1/2011 VOC g/l (lb/gal)	EFFECTIVE 1/1/2012 VOC g/l (lb/gal)
(A) Vanishing Oil	50 (0.42)		
(B) Metalworking Fluid			
(i) Metal Forming			75 (0.63)
(ii) Metal Removal			
(a) General			75 (0.63)
(b) Precision Metal Removal			130 (1.08)
(iii) Metal Treating			75 (0.63)
(iv) Metal Protecting			
(a) General	300 (2.50)		50 (0.42)
(b) Military Specified Preservative		340 (2.83)	
(C) Direct-Contact Lubricant			50 (0.42)

(2) Prohibition of Sale

(A) No person shall manufacture for use, offer for sale, sell or distribute directly to a person any metalworking fluid or direct-contact lubricant for use in the District which, at the time of sale or manufacture, contains more VOC per liter of material after recommended dilution, and after the effective date, as listed in Table A.

(B) The prohibition of sale shall not apply to any manufacturer or supplier of metalworking fluid or direct-contact lubricant provided the product was sold to an independent distributor that was informed in writing by the manufacturer or supplier that the

metalworking fluid or direct-contact lubricant is not to be used in the South Coast Air Quality Management District.

(C) The prohibition of sale shall not apply to any manufacturer or supplier of metalworking fluid or direct-contact lubricant collected and directed to an emission control system pursuant to subdivision (e).

(3) Sell-Through Provision

Any metalworking fluid or direct-contact lubricant that is manufactured prior to the effective date of the applicable limit, and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, offered for sale, or applied for up to six months after the specified effective date.

(e) Control Equipment

A person may use metalworking fluids and direct-contact lubricants in excess of the limits provided all metalworking fluids and direct-contact lubricants are controlled by an emission control system that meets the following:

(1) The control device reduces VOC emissions from an emission collection system by at least 95 percent by weight or the output of the air pollution control device is no more than 5 PPM VOC by volume calculated as carbon with no dilution; and

(2) The emission collection system has been demonstrated to collect at least 90 percent by weight of the VOC emissions generated by the sources of VOC emission.

(f) Administrative Requirements

(1) Effective January 1, 2010, containers, for sale or distribution, of any vanishing oil or metal protecting fluid subject to this rule shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such vanishing oils or metal protecting fluids shall file with the Executive Officer of the District an explanation of each code.

(2) Effective January 1, 2012, containers for sale or distribution, of any metalworking fluid or direct-contact lubricant subject to this rule shall display the VOC content and either the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturer or

supplier of such fluids shall file with the Executive Officer of the District an explanation of each date code.

(3) For each calendar year (January 1 through December 31) beginning with 2011 and continuing with each subsequent calendar year until 2013, a metalworking fluid or direct-contact lubricant manufacturer or supplier shall submit to the District by April 1 of the following calendar year, an annual quantity and emissions report for products subject to the rule sold within the District. The report format shall be approved by the Executive Officer, and shall include the annual sales volume and VOC content of metalworking fluids and direct-contact lubricants sold or distributed within the District.

(g) Recordkeeping Requirements

(1) An owner or operator shall develop and maintain a VOC listing of all metalworking fluids and direct-contact lubricants purchased for use at the facility. The list shall be kept in a format specified by the District or in an equivalent format and shall contain the following data:

(A) Name and AQMD facility identification number (if applicable) of the stationary source;

(B) For each metalworking fluid and direct-contact lubricants:

(i) Manufacturer, a manufacturer product number, ID, or code that uniquely identifies the VOC-containing fluid, and a fluid category;

(ii) Grams of VOC per liter of material;

The VOC Listing shall be updated within seven (7) calendar days from the date of receipt of a new metalworking fluid or direct-contact lubricant at the facility.

(2) An owner or operator shall record the following information on a monthly usage log in a format specified by the District or in an equivalent format:

(A) Name and AQMD identification number of the facility;

(B) Manufacturer product number, ID, or code from the VOC Listing;

(C) Amount of each VOC-containing fluid purchased on a monthly basis;

(D) Initials of the person entering the data; and

(E) Date the data was entered.

(3) An owner or operator of a stationary source shall maintain and make available to a District representative upon request all of the information necessary to verify the amount of metalworking fluids and direct-contact lubricants used at the facility including, but not limited to purchase records identifying the supplier's name, date, and amount purchased.

(4) In lieu of meeting paragraphs (g)(1), (g)(2) and (g)(3), records may be maintained pursuant to Rule 109 for all applications subject to this rule.

(5) Any person using an emissions control system as a means of complying with this rule shall maintain daily records of all key system parameters, including hours of operation, temperatures, pressures and flow rates, that are necessary to ensure control efficiency requirements.

(6) Manufacturers utilizing the provision of subparagraph (d)(2)(B) shall maintain notification letters for five (5) years, which shall be made available to the Executive Officer or designee upon request.

(7) Manufactures or suppliers of metalworking fluids and direct-contact lubricants shall maintain records to verify data used to determine VOC content in preparing their annual quantity and emissions report. The records shall be maintained for five (5) years and made available upon request by the Executive Officer. Such records shall include:

(A) Laboratory reports; or

(B) VOC content calculations.

(h) Test Methods and Procedures

The following test methods and procedures shall be used to determine compliance with this rule. Other applicable test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board and the U.S. Environmental Protection Agency.

(1) Determination of VOC Content

(A) ASTM E 1868 - 10 Standard Test Method for Loss-On-Drying by Thermogravimetry. Quality assurance and quality control procedures shall be conducted using SCAQMD Additional Requirements to ASTM Standard Test Method E 1868-10 for Metalworking Fluids and Direct-Contact Lubricants. Water content shall be determined by ASTM D 4017 (Standard Test Method for Water in Paints and Paint Materials by Karl Fischer Method) if applicable to the specific sample. The exempt solvent

content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with paragraph (d), only when manufacturers specify which individual compounds are used in the coating formulation. In addition, the manufacturers must identify the USEPA, CARB, and the SCAQMD approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Flash Point

ASTM D93 - 07 Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.

(3) Determination of Efficiency of Emission Control System

(A) The capture efficiency of an emission control system shall be determined by verifying the use of a Permanent Total Enclosure (PTE) and 100% capture efficiency as defined by U.S. EPA Method 204 “Criteria for and Verification of a Permanent or Temporary Total Enclosure.” Alternatively, if a U.S. EPA Method 204 defined PTE is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in U.S. EPA technical guidance document “Guidelines for Determination Capture Efficiency, January 9, 1995.” Individual capture efficiency test runs subject to the U.S. EPA technical guidelines shall be determined by:

(i) The Temporary Total Enclosure (TTE) approach of U.S. EPA Method 204 through 204F; or

(ii) The SCAQMD "Protocol for Determination of Volatile organic Compounds (VOCs) Capture efficiency."

(B) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by U.S. EPA's Test Method 18, or Air Resources Board (ARB) Method 422 for the determination of emissions of Exempt Compounds and U.S. EPA's Test Methods 25, 25A, SCAQMD Method 25.1 for the determination of Total Gaseous Non-Methane Organic Emissions as Carbon, or SCAQMD Method 25.3 for the determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources, as applicable.

(C) The overall efficiency of an emission control system shall be determined using the following equation:

Overall Efficiency

= (Capture Efficiency) x (Control Equipment Efficiency)/100

(i) Exemptions

(1) Paragraph (d)(2) and subdivision (f) shall not apply to metalworking fluids and direct-contact lubricants subject to the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.

(2) Until January 1, 2011, paragraph (d)(1) shall not apply to metalworking fluids and direct-contact lubricants subject to the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.

(3) The provisions of this rule shall not apply to metalworking fluids and direct-contact lubricants sold in this District for shipment outside of this District or for shipment to other manufacturers for repackaging.

(4) The provisions of subdivisions (d) and (f) of this rule shall not apply to metalworking fluids and direct-contact lubricants subject to VOC limits in other Regulation XI rules.

(5) The provisions of subdivision (d) shall not apply to the following operations:

(A) Lapping;

(B) Sinker EDM;

(C) Avionics and assembled aircraft;

(D) Space vehicle components;

(E) Fluids utilizing the control device option in subdivision (e);

(F) Until January 1, 2011, metal protecting fluids used in association with a military specification, military standard, Department of Defense document or Production Part Approval Process (PPAP). The specifications for the part shall be made available to the Executive Officer upon request.

(6) The provisions of subdivision (g) shall not apply to any Super Compliant Material(s). This exemption shall only apply to facilities that demonstrate that total permitted and non-permitted facility VOC emissions do not exceed 4 tons in any calendar year, including emissions from the Super Compliant Material, as shown by annual purchase records.

(7) Paragraphs (d)(1) and (d)(2) shall not apply to the use of dimethyl carbonate used as a cooling solvent in computed numerically controlled (CNC) machines where permeable media are used to maintain a vacuum that holds the part in place during cutting provided that the equipment existed at the time of rule adoption, is enclosed and an exhaust fan discharges the exhaust air from the equipment outside of the building.

(Adopted July 8, 1983)(Amended December 5, 1986)(Amended February 6, 1987)
(Amended April 3, 1987)(Amended August 7, 1987)(Amended December 2, 1988)
(Amended February 3, 1989)(Amended April 7, 1989)(Amended March 2, 1990)
(Amended November 2, 1990)(Amended December 7, 1990)(Amended August 2, 1991)
(Amended January 10, 1992) (Amended March 8, 1996)(Amended February 14, 1997)
(Amended December 3, 2004)(Amended December 4, 2009)

RULE 1145. PLASTIC, RUBBER, LEATHER, AND GLASS COATINGS

(a) Purpose and Applicability

The purpose of Rule 1145 is to reduce volatile organic compounds (VOC) emissions from the application of coatings to any plastic, rubber, leather, or glass products.

(b) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic/marking applications.

(2) AIR BRUSH OPERATIONS are conducted with a type of coating application equipment that operates at air pressures between 25 psi and 116 psi and an air volume of 0.7 cfm and 1.75 cfm respectively. These operations apply a very thin film of coating to a substrate from a paint reservoir of eight ounces or less.

(3) CLEAR COATING is a colorless coating which contains binders, but no pigment, and is formulated to form a transparent film.

(4) COATING means a layer of material applied on a substrate that forms a decorative and/or protective film.

(5) COATING APPLICATION EQUIPMENT is any equipment used to apply coating to a substrate. Coating application equipment includes coating distribution lines, coating hoses, pressure-pots, spray guns, and hand-application equipment.

(6) DIP COATER is a type of application equipment that coats an object by submerging the object in a vat of coating, and subsequently withdrawing the object and draining off the excess coating.

(7) ELECTRIC DISSIPATING COATING is a coating that rapidly dissipates a high-voltage electric charge.

(8) ELECTROSTATIC APPLICATION is a method of applying coating whereby atomized paint droplets are charged and subsequently deposited on the substrate by electrostatic attraction.

(9) EXTREME PERFORMANCE COATING is a coating applied to plastic, rubber, leather, or glass where the coated surface is, in its intended use, subject to the following: (A) Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solutions; or, (B) Repeated exposure to temperatures in excess of 250^{o}F; or, (C) Repeated heavy abrasion including mechanical wear and repeated scrubbings with industrial grade solvents, cleaners or scouring agents.

(10) EMI/RFI SHIELDING is a coating used on electrical or electronic equipment to provide shielding against electromagnetic interference, radio frequency interference, or static discharge.

(11) EXEMPT COMPOUNDS (See Rule 102-Definition of Terms).

(12) FLOW COATER is a type of coating application equipment that coats an object by flowing a stream of coating over the object and draining off any excess coating.

(13) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS, is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{Ws - Ww - Wes}{Vm - Vw - Ves}$$

Where:

W_s = weight of volatile compounds in grams

W_w = weight of water in grams

W_{es} = weight of exempt compounds in grams

V_m = volume of material in liters

V_w = volume of water in liters

V_{es} = volume of exempt compounds in liters

(14) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W\,s - W\,w - W\,e\,s}{V\,m}$$

Where:

W_s = weight of volatile compounds in grams

W_w = weight of water in grams

W_{es} = weight of exempt compounds in grams

V_m = volume of material in liters

(15) HAND-APPLICATION METHODS are the methods used to apply coating to substrate by manually held, non-mechanically operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

(16) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is a coating application system which is operated at air pressures between 0.1 and 10 pounds per square inch gauge (psig) measured dynamically at the center of the air cap and at the air horns.

(17) HIGHWAY CONES are cones used to regulate traffic.

(18) INK is a fluid that contains dyes and/or colorants, and is used to make markings but not to protect surfaces.

(19) LEATHER ANTIQUE COATING is a coating applied to a leather substrate over a leather sealer coating and before a leather top coating to create an antique leather appearance.

(20) LEATHER COLOR COATING is a coating applied to a leather substrate over a leather sealer coating and before a leather top coating to provide color to the leather substrate.

(21) LEATHER SEALER COATING is a coating applied directly to a leather substrate to seal the porous leather substrate.

(22) LEATHER STAIN COATING is an opaque or semi-transparent coating which is formulated to change the color but not to conceal the grain pattern or texture of the leather substrate. Leather stain coatings may be applied as a single coating to the leather substrate or followed by a leather top coating.

(23) LEATHER TOP COATING is a two-component clear coating that is applied to a leather substrate following the application of a leather sealer, leather stain or antique or color coatings.

(24) MASK COATING is thin film coating applied through a template to coat a small portion of a substrate.

(25) METALLIC COATING is a coating which contains more than 5 grams of metal particles per liter of coating as applied.

(26) METAL PARTICLES are pieces of a pure elemental metal or a combination of elemental metals.

(27) MILITARY SPECIFICATION COATING is a coating which has a formulation approved by the United States Military Agency for use on military equipment.

(28) MIRROR BACKING is the coating applied over the silvered surface of a mirror.

(29) MOLD SEAL COATING is the initial coating applied to a new mold or a repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.

(30) MOTOR VEHICLE is a passenger car, light-duty truck, medium-duty vehicle, or heavy-duty vehicle as defined in Section 1900, Title 13, California Administrative Code.

(31) MULTI-COLOR COATING is a coating which exhibits more than one color when applied, and which is packaged in a single container and applied in a single coat.

(32) ONE-COMPONENT COATING is a coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner necessary to reduce the viscosity is not considered a component.

(33) OPTICAL COATING is a coating applied to an optical lens.

(34) REFRIGERATED GLASS DOOR COATING is a two-component coating or ink used for the manufacturing of refrigerated glass doors that forms a decorative or protective film and provides a substrate for bonding materials such as seals, spacers, and sealants.

(35) REPAIR COATING is a coating used to re-coat portions of a previously coated product which has sustained mechanical damage to the coating following normal coating operations.

(36) ROLL COATER is a type of coating application equipment that utilizes a series of mechanical rollers to form a thin coating film on the surface of a roller, which is then applied to a substrate by moving the substrate underneath the roller.

(37) SHOCK-FREE COATING is a coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being of low capacitance and high resistance, and having resistance to breaking down under high voltage.

(38) STENCIL COATING is an ink or a pigmented coating which is rolled or brushed onto a template or stamp in order to add identifying letters, symbols and/or numbers.

(39) TOUCH-UP COATING is a coating used to cover minor imperfections appearing after the main coating operation.

(40) TRANSFER EFFICIENCY is the ratio of the weight or volume of coating solids adhering to an object to the total weight or volume, respectively, of coating solids used in the application process, expressed as a percentage.

(41) TRANSLUCENT COATING is a coating which contains binders and pigment, and is formulated to form a color, but not opaque, film.

(42) TWO-COMPONENT COATING is a coating requiring the addition of a separate reactive resin, commonly known as a catalyst, before application to form an acceptable dry film.

(43) VACUUM METALIZING/PHYSICAL VAPOR DEPOSITION (PVD) is the process whereby metal is vaporized and deposited on a substrate in a vacuum chamber.

(44) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(c) Requirements

(1) No person shall apply on plastics, rubber, leather, or glass any coatings which are applied with a VOC content in excess of the limits listed in the Table of Standards.

TABLE OF STANDARDS

VOC LIMITS LESS WATER AND LESS EXEMPT COMPOUNDS		
COATING CATEGORIES	g/L	lbs/gal
Electrical dissipating and shock free coatings	360	3.0
Extreme performance two-component coatings	420	3.5
General one-component coatings	120	1.0
General two-component coatings	120	1.0
Leather antique coatings	156	1.3
Leather color coatings	60	0.5
Leather sealer coatings	60	0.5
Leather stain coatings	216	1.8
Leather top coatings	120	1.0
Metallic coatings	420	3.5
Military specification one-component coatings	340	2.8

TABLE OF STANDARDS (cont.)

VOC LIMITS LESS WATER AND LESS EXEMPT COMPOUNDS		
COATING CATEGORIES	g/L	lbs/gal
Military specification two-component coatings	420	3.5
Mirror backing curtain coated coatings	500	4.2
Mirror backing rolled coated coatings	312	2.6
Mold seal coatings	750	6.3
Multi-color coatings	680	5.7
Refrigerated glass door coatings	480	4.0
Optical coatings	50	0.4
Vacuum metalizing coatings	800	6.7

(2) Solvent cleaning operations and the storage and disposal of VOC-containing materials are subject to the provisions of Rule 1171 - Solvent Cleaning Operations.

(3) Transfer Efficiency

A person shall not apply coatings unless the coating is applied with equipment operated according to the manufacturer's specifications, and by the use of one of the following methods:

(A) Electrostatic application; or

(B) Flow coater; or

(C) Roll coater; or

(D) Dip coater; or

(E) Hand application methods; or

(F) High-volume, low-pressure (HVLP) spray; or

(G) Such other coating application methods as are demonstrated to the Executive Officer to be capable of achieving at least equivalent or better transfer efficiency to the method listed in subparagraph (c)(3)(F), using District approved procedures and for which written approval of the Executive Officer has been obtained.

(4) Air Pollution Control Equipment

A person may comply with the provisions of paragraph (c)(1), (c)(2), or (c)(3) by using air pollution control equipment, provided that the VOC emissions from

such operations or materials are reduced in accordance with provisions of (A) and (B) below:

(A) The control device shall reduce VOC emissions from an emission collection system by at least 95 percent, by weight, or the concentration of VOC in the output of the air pollution control device shall be less than 50 PPM calculated as carbon with no dilution.

(B) The owner/operator demonstrates that the system collects at least 90 percent, by weight, of the VOC emissions generated by the sources of emissions.

(5) Qualification for Classification as Extreme Performance Coating

A coating may be classified as an extreme performance coating provided that the applicator requests and receives written approval of such classification from the Executive Officer prior to application of such coating and provided the applicator demonstrates that the intended use of each coated object would require coatings with an extreme performance coating.

(d) Recordkeeping Requirements

Records shall be maintained pursuant to Rule 109.

(e) Compliance Test Methods

The following test methods and procedures shall be used to determine compliance with this rule. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board (CARB) and the United States Environmental Protection Agency (USEPA).

(1) The VOC content of materials subject to the provisions of this rule shall be determined by:

(A) The USEPA Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A). The exempt compounds' content shall be determined by SCAQMD Laboratory Methods 302 (Distillation of Solvents from Paints, Coatings and Inks) and 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOC's) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds: cyclic branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision (c), only at such time as manufacturers specify which individual compounds are used in the coating formulations and identify the USEPA, CARB, and the SCAQMD approved test methods, used to quantify the amount of each exempt compound.

(2) Determination of Efficiency of Emission Control System

(A) The capture efficiency of an emission control system shall be determined by verifying the use of a Permanent Total Enclosure (PTE) and 100 percent capture efficiency as defined by USEPA Method 204 "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if a USEPA Method 204 defined PTE is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in the USEPA technical guidance document "Guidelines for Determination Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the USEPA technical guidelines shall be determined by:

(i) the Temporary Total Enclosure (TTE) approach of USEPA Methods 204 through 204F; or

(ii) the SCAQMD "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency."

(B) The efficiency of the control device of the emission control system as specified in paragraph (c)(4) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by the USEPA Test Method 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as

Carbon) as applicable. USEPA Test Method 18, or CARB Method 422 shall be used to determine emissions of exempt compounds.

(C) The overall efficiency of an emission control system shall be determined using the following equation:

Overall Efficiency = (Capture Efficiency) x (Control Equipment Efficiency)/100

(3) Multiple Test Methods

When more than one test method or set of methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(4) Demonstration of transfer efficiency shall be conducted in accordance with SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989."

(5) All test methods referenced in this section shall be the most recently approved version.

(f) Alternative Emission Control

A person may achieve compliance with paragraph (c)(1) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(g) Prohibition of Specification and Sales

(1) A person shall not specify the use, in the SCAQMD, of any coating to be applied to any plastic, rubber, leather, or glass, subject to the provisions of this rule that does not meet the limits and requirements of this rule. The requirements of this paragraph shall apply to all written and oral contracts.

(2) Except as provided in subdivision (i), a person shall not apply, sell, or offer for sale, manufacture, formulate, or repackage any plastic, rubber, leather or glass coating materials for the use in the SCAQMD that at the time of sale exceeds the applicable VOC content specified in paragraph (c)(1).

The prohibition of specifications and sales shall not apply to plastic, rubber, leather, or glass coating materials shipped, supplied or sold to a person for use outside the SCAQMD or to coatings used exclusively in air pollution control equipment that complies with the requirements of paragraph (c)(4).

(h) Rule 442 Applicability

Any coating, coating operation, or facility which is exempt from all or a portion of this rule shall comply with the provisions of Rule 442.

(i) Exemptions

(1) The provisions of paragraph (c)(1) shall not apply to the following:

(A) Touch-up and repair coatings;

(B) Stencil coatings applied on clear or transparent substrates;

(C) Clear or translucent coatings;

(D) Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings;

(E) Any individual coating category used in volumes less than 50 gallons in any one year, if substitute compliant coatings are not available, provided that the total usage of all such coatings does not exceed 200 gallons per year, per facility, and for which written approval of the Executive Officer has been obtained;

(F) Reflective coating applied to highway cones;

(G) Mask coatings

(i) Coatings that are less than 0.5 millimeter thick (dried) and the area coated is less than 25 square inches; or

(ii) Coatings that are less than 0.5 millimeter thick (dried) and/or the area coated is more than 25 square inches, provided that a written petition that demonstrates compliant coatings are not available is submitted to and written approval is granted by the Executive Officer.

(H) EMI/RFI shielding coatings; and

(I) Heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices, provided that the total usage of all such coatings does not exceed 100 gallons per year, per facility.

(2) The provisions of this rule shall not apply to aerosol coating products.

(3) The provisions of paragraph (c)(3) shall not apply to airbrush operations using 5 gallons or less per year.

(4) The VOC limit for the general one-component coating category in paragraph (c)(1) shall not apply to polyurethane shoe sole coating operations provided that:

(A) the VOC limit of all coatings used for polyurethane shoe sole coating operations does not exceed 800 grams per liter or 6.7 pounds per gallon;

(B) the operation does not use more than 160 gallons per month averaged over a consecutive 12 month period;

(C) the operation does not use more than 200 gallons per month during any one month; and,

(D) records are maintained for at least three years demonstrating compliance with subparagraphs (i)(4)(A), (i)(4)(B) and (i)(4)(C) and made available to the Executive Officer upon request.

(Adopted September 9, 1988)(Amended January 6, 1989)
(Amended May 13, 1994)(Amended June 16, 2000)
(Amended November 17, 2000)(Amended September 5, 2008)
(Amended November 1, 2013)

RULE 1146 EMISSIONS OF OXIDES OF NITROGEN FROM INDUSTRIAL, INSTITUTIONAL, AND COMMERCIAL BOILERS, STEAM GENERATORS, AND PROCESS HEATERS

(a) Applicability

This rule applies to boilers, steam generators, and process heaters of equal to or greater than 5 million Btu per hour rated heat input capacity used in all industrial, institutional, and commercial operations with the exception of:

(1) boilers used by electric utilities to generate electricity; and

(2) boilers and process heaters with a rated heat input capacity greater than 40 million Btu per hour that are used in petroleum refineries; and

(3) sulfur plant reaction boilers.

(4) RECLAIM facilities (NOx emissions only)

(b) Definitions

(1) ADSORPTION CHILLER UNIT means any natural gas fired unit that captures and uses waste heat to provide cold water for air conditioning and other process requirements.

(2) ANNUAL CAPACITY FACTOR means the ratio of the amount of fuel burned by a unit in a calendar year to the amount of fuel it could have burned if it had operated at the rated heat input capacity for 100 percent of the time during the calendar year.

(3) ANNUAL HEAT INPUT means the actual amount of heat released by fuels burned in a unit during a calendar year.

(4) ATMOSPHERIC UNIT means any natural gas fired unit with a heat input less than or equal to 10 million Btu per hour with a non-sealed combustion chamber in which natural draft is used to exhaust combustion gases.

(5) BOILER or STEAM GENERATOR means any combustion equipment fired with liquid and/or gaseous (including landfill and digester gas) and/or solid fossil fuel and used to produce steam or to heat water and that is not used exclusively to produce electricity for sale. Boiler or Steam

Generator does not include any open heated tank, adsorption chiller unit, or waste heat recovery boiler that is used to recover sensible heat from the exhaust of a combustion turbine or any unfired waste heat recovery boiler that is used to recover sensible heat from the exhaust of any combustion equipment.

(6) BTU means British thermal unit.

(7) COMMERCIAL OPERATION means any office building, lodging place, or similar location designed for tenancy by one or more business entities or residential occupants.

(8) GROUP I UNIT means any unit burning natural gas with a rated heat input greater than or equal to 75 million Btu per hour, excluding thermal fluid heaters.

(9) GROUP II UNIT means any unit burning gaseous fuels, excluding digester and landfill gases, with a rated heat input less than 75 million Btu per hour down to and including 20 million Btu per hour, excluding thermal fluid heaters.

(10) GROUP III UNIT means any unit burning gaseous fuels, excluding digester and landfill gases, and thermal fluid heaters with a rated heat input less than 20 million Btu per hour down to and including 5 million Btu per hour, and all units operated at schools and universities greater than or equal to 5 million Btu per hour.

(11) HEALTH FACILITY has the same meaning as defined in Section 1250 of the California Health and Safety Code.

(12) HEAT INPUT means the chemical heat released due to fuel combustion in a unit, using the higher heating value of the fuel. This does not include the sensible heat of incoming combustion air.

(13) INDUSTRIAL OPERATION means any entity engaged in the production and/or provision of chemicals, foods, textiles, fabricated metal products, real estate, personal services or other kindred or allied products or services.

(14) INSTITUTIONAL OPERATION means any public or private establishment constituted to provide medical, educational, governmental, or other similar services to promote safety, order, and welfare.

(15) NOx EMISSIONS means the sum of nitric oxide and nitrogen dioxide in the flue gas, collectively expressed as nitrogen dioxide.

(16) OPEN HEATED TANK means a non-pressurized self-heated tank that may include a cover or doors that can be opened or detached to put in or remove parts, components or other material for processing in the tank. Tanks heated solely by an electric heater, boiler, thermal fluid heater or heat recovered from another process using heat exchangers are excluded from this definition.

(17) PROCESS HEATER means any combustion equipment fired with liquid and/or gaseous (including landfill and digester gas) and/or solid fossil fuel and which transfers heat from combustion gases to water or process streams. Process Heater does not include any kiln or oven used for drying, curing, baking, cooking, calcining, or vitrifying; or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.

(18) RATED HEAT INPUT CAPACITY means the heat input capacity specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different than the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the rated heat input capacity.

(19) SCHOOL means any public or private school, including juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including in kindergarten and grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property, but does not include unimproved school property.

(20) STANDBY BOILER is a boiler which operates as a temporary replacement for primary steam or hot water while the primary steam or hot water supply unit is out-of-service.

(21) THERM means 100,000 Btu.

(22) THERMAL FLUID HEATER means a PROCESS HEATER in which a process is heated indirectly by a heated fluid other than water.

(23) UNIT means any boiler, steam generator, or process heater as defined in paragraph (b)(5) or (b)(17) of this subdivision.

(c) Requirements

(1) The owner or operator shall subject all of the units within the facility to the NOx emission limits and schedules specified in Table 1146-1:

Table 1146-1 – Standard Compliance Limits and Schedule

Rule Reference	Category	Limit	Submit Compliance Plan on or before	Submit Application for Permit to Construct on or before	Unit Shall be in Full Compliance on or before
(c)(1)(A)	All Units Fired on Gaseous Fuels	30 ppm or for natural gas fired units 0.036 lbs/10^6 Btu	-	-	September 5, 2008
(c)(1)(B)	Any Units Fired on Non-gaseous Fuels	40 ppm	-	-	September 5, 2008
(c)(1)(C)	Any Units Fired on Landfill Gas	25 ppm	-	-	January 1, 2015
(c)(1)(D)	Any Units Fired on Digester Gas	15 ppm	-	-	January 1, 2015
(c)(1)(E)	Atmospheric Units	12 ppm or 0.015 lbs/10^6 Btu	January 1, 2010	January 1, 2013	January 1, 2014
(c)(1)(F)	Group I Units	5 ppm or 0.0062 lbs/10^6 Btu	-	January 1, 2012	January 1, 2013
(c)(1)(G)	Group II Units 75% or more of units (by heat input)	9 ppm or 0.011 lbs/10^6 Btu	January 1, 2010	January 1, 2011	January 1, 2012
(c)(1)(H)	Group II Units 100% of units (by heat input)		January 1, 2010	January 1, 2013	January 1, 2014
(c)(1)(I)	Group III Units 75% or more of units (by heat input)		January 1, 2011	January 1, 2012	January 1, 2013
(c)(1)(J)	Group III Units 100% of units (by heat input)		January 1, 2011	January 1, 2014	January 1, 2015

(2) In lieu of complying with the NOx emission limits and schedules specified in paragraph (c)(1), the owner or operator may elect to subject all of the units within the facility to the requirements specified in Table 1146-2. The owner or operator that fails to submit a Compliance Plan or Application for Permit to Construct pursuant to the schedule specified in Table 1146-1 for any of the Group II units shall be subject to the NOx limits and schedule specified in Table 1146-2.

Table 1146-2 – Enhanced Compliance Limits and Schedule

Rule Reference	Category	Limit	Submit Compliance Plan on or before	Submit Application for Permit to Construct on or before	Unit Shall be in Full Compliance on or before
(c)(2)(A)	Group II Units 75% or more of units (by heat input)	5 ppm or 0.0062 lbs/10^6 Btu	January 1, 2011	January 1, 2013	January 1, 2014
(c)(2)(B)	Group II Units 100% of units (by heat input)		January 1, 2011	January 1, 2015	January 1, 2016

(3) For dual fuel co-fired combustion a weighted average limit calculated by Equation 1146-1 may be used provided a totalizing fuel flow meter is installed pursuant to paragraph (c)(8), for units burning a combination of both fuels.

$$\textbf{Weighted Limit} = \frac{(CL_A \times Q_A) + (CL_B \times Q_B)}{Q_A + Q_B} \qquad \textbf{Equation 1146-1}$$

Where:

CL_A = compliance limit for fuel A
CL_B = compliance limit for fuel B
Q_A = heat input from fuel A
Q_B = heat input from fuel B

(4) The owner or operator of any unit(s) with a heat input capacity greater than or equal to 5 million Btu per hour shall not discharge into the atmosphere carbon monoxide (CO) emissions in excess of 400 ppm or for natural gas fired units 0.30 lbs/10^6 Btu.

(5) In lieu of complying with the applicable emission limits specified in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4), the owner or operator of any unit(s) in operation prior to September 5, 2008 with an annual heat input less than or equal to 9.0 x 10^9 Btu (90,000 therms) per year, shall:

(A) operate the unit(s) in a manner that maintains stack gas oxygen concentrations at less than or equal to 3 percent on a dry basis for any 15-consecutive-minute averaging period; or

(B) tune the unit(s) at least twice per year, (at intervals from 4 to 8 months apart) in accordance with the procedure described in Attachment 1 or the unit manufacturer's specified tune-up procedure. If a different tune-up procedure from that described in Attachment 1 is used then a copy of this procedure shall be kept on site. The operator of any unit(s) selecting the tune-up option shall maintain records for a rolling twenty four month period verifying that the required tune-ups have been performed. If the unit does not operate throughout a continuous six-month period within a twelve month period, only one tuneup is required for the twelve month period that includes the entire period of non-operation. For this case, the tune-up shall be conducted within thirty (30) days of start-up. No tune-up is required during a rolling twelve month period for any unit that is not operated during that rolling twelve month period; this unit may be test fired to verify availability of the unit for its intended use but once the test firing is completed the unit shall be shutdown. Records of test firings shall be maintained for a rolling twenty four month period, and shall be made accessible to an authorized District representative upon request.

(6) Any unit(s) with a rated heat input capacity greater than or equal to 40 million Btu per hour and an annual heat input greater than 200 x 10^9 Btu per year shall have a continuous in-stack nitrogen oxides monitor or equivalent verification system in compliance with 40 CFR part 60 Appendix B Specification 2. Maintenance and emission records shall be maintained and made accessible for a period of two years to the Executive Officer.

(7) An owner or operator that has installed or modified a Group III natural gas fired unit prior to September 5, 2008 complying with the applicable BACT emission limit of 12 ppm or less of NOx may defer compliance with subparagraphs (c)(1)(I) or (c)(1)(J) until the unit's burner(s) replacement.

(8) Any owner or operator who chooses the pound per million Btu compliance option specified in paragraph(s) (c)(1) (c)(2), or (c)(4) or chooses the weighted average emission limit using Equation 1146-1 under paragraph

(c)(3) shall install a non-resettable totalizing fuel meter to measure the total of each fuel used by each individual unit, as approved by the Executive Officer.

(9) The owner or operator of Group II or III units shall submit for the approval of the Executive Officer a compliance plan in accordance with the requirements of Rule 221 – Plans and Rule 306 – Plan Fees by the applicable date specified in Tables 1146-1 or 1146-2. The compliance plan shall include the following information:

(A) Owner/operator contact information (company name, AQMD facility identification number, contact name, phone number, address, e-mail address).

(B) Number and size (mmbtu/hr) of Group II and III units located at the facility.

(C) Selection of the Standard (Table 1146-1) or Enhanced (Table 1146-2) compliance schedule by Group II and III units.

(D) The owner or operator of more than one unit located within the same facility that have opted to divide the units by heat input for the purpose of separate compliance dates according to Tables 1146-1 or 1146-2 shall indicate which units are categorized 75 percent or more of the heat input and which units make up the remaining 100 percent of the heat input.

(10) On or after January 1, 2015, an owner operator of any landfill or digester gas (biogas) unit co-fired with natural gas shall not operate the unit in a manner that exceeds the emission concentration limits specified in subparagraphs (c)(1)(C) or (c)(1)(D), provided that the facility monthly average biogas usage by the biogas units is 90% or more, based on the higher heating value of the fuels used.

(A) The Executive Officer may approve the burning of more than 10% up to:

(i) 25% natural gas in a biogas fired unit at the 15 ppm (digester gas) or 25 ppm (landfill gas) NOx level, when it is necessary, if the only alternative to limiting natural gas to 10% would be shutting down the unit and flaring more biogas.

(ii) 50% natural gas in a digester gas-fired unit at the 15 ppm NOx level, when it is necessary as specified in clause (c)

(10)(A)(i) and for units installed on or after September 5, 2008 provided the unit has demonstrated compliance with the NOx limits in paragraph (c)(1) applicable to units fired exclusively on natural gas.

For units subject to this subparagraph, the percent natural gas usage shall be based on the facility monthly average biogas usage by the biogas units and the higher heating value of the fuels used.

(B) Any biogas-fired unit burning more than the approved percent natural gas as determined under subparagraph (c)(10)(A) shall comply with the weighted average NOx limit specified in paragraph (c)(3).

(d) Compliance Determination

(1) An owner or operator of any unit(s) shall have the option of complying with either the pound per million Btu or parts per million emission limits specified in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4).

(2) All emission determinations shall be made in the as-found operating condition, except no compliance determination shall be established during start-up, shutdown, or under breakdown conditions. Compliance determination as specified in paragraph (d)(6) shall be conducted at least 250 operating hours, or at least thirty days subsequent to the tuning or servicing of any unit, unless it is an unscheduled repair.

(3) All parts per million emission limits specified in subdivision (c) are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.

(4) Compliance with the NO_x and CO emission requirements of paragraphs (c)(1), (c)(2), (c)(3), and (c)(4) and the stack-gas oxygen concentration requirement of subparagraph (c)(5)(A) shall be determined using a District approved contractor under the Laboratory Approval Program according to the following procedures:

(A) District Source Test Method 100.1 - Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling (March 1989), or

(B) District Source Test Method 7.1 - Determination of Nitrogen Oxide Emissions from Stationary Sources (March 1989) and

District Source Test Method 10.1 - Carbon Monoxide and Carbon Dioxide by Gas Chromatograph/Non-Dispersive Infrared Detector (GC/NDIR) - Oxygen by Gas Chromatograph-Thermal Conductivity (GC/TCD) (March 1989); or

(C) United States Environmental Protection Agency Conditional Test Method CTM-030, Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers; or

(D) ASTM D6522-00(2005) Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers

(E) any other test method determined to be alternative and approved before the test in writing by the Executive Officers of the District and the California Air Resources Board and the Regional Administrator of the United States Environmental Protection Agency, Region IX; or

(F) a continuous in-stack nitrogen oxide monitor or equivalent verification system as specified in paragraph (c)(6).

Records of all source tests shall be made available to District personnel upon request. Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of this rule.

(5) For any operator who chooses the pound per million Btu of heat input compliance option of paragraph (c)(1), (c)(2), (c)(3), or (c)(4), NO_X emissions in pounds per million Btu of heat input shall be calculated using procedures in 40 CFR Part 60, Appendix A, Method 19, Sections 2 and 3 and CO emissions in pounds per million Btu of heat input shall be calculated according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to South Coast Air Quality Management District Rules 1146 and 1146.1.

(6) Compliance determination with the NOx emission requirements in paragraph (d)(4) shall be conducted once:

(A) every three years for units with a rated heat input greater than or equal to 10 million Btu per hour, except for units subject to paragraph (c)(6).

(B) every five years for units with a rated heat input less than 10 million Btu per hour down to and including 5 million Btu per hour.

(7) Provided the emissions test is conducted within the same calendar year as the test required in paragraph (d)(6), an owner or operator may use the following emissions tests to comply with paragraph (d)(6):

(A) Periodic monitoring or testing of a unit as required in a Title V permit pursuant to Regulation XXX, or

(B) Relative accuracy testing for continuous emissions monitoring verification pursuant to Rule 218.1 or 40 CFR part 60 Appendix B Specification 2.

(8) Any owner or operator of units subject to this rule shall perform diagnostic emission checks of NOx emissions with a portable NOx, CO and oxygen analyzer according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to South Coast Air Quality Management District Rules 1146 and 1146.1 according to the following schedule:

(A) On or after July 1, 2009, the owner or operator of units subject to paragraphs (c)(1), (c)(2), (c)(3), and (c)(4) shall check NOx emissions at least monthly or every 750 unit operating hours, whichever occurs later. If a unit is in compliance for three consecutive diagnostic emission checks, without any adjustments to the oxygen sensor set points, then the unit may be checked quarterly or every 2,000 unit operating hours, whichever occurs later, until the resulting diagnostic emission check exceeds the applicable limit specified in paragraphs (c)(1), (c)(2), or (c)(3).

(B) On or after January 1, 2015 or during burner replacement, whichever occurs later, the owner or operator of units subject to paragraph (c)(5) shall check NOx emissions according to the tune-up schedule specified in subparagraph (c)(5)(B).

(C) Records of all monitoring data required under subparagraphs (d)(8)(A) and (d)(8)(B) shall be maintained for a rolling twelve

month period of two years (5 years for Title V facilities) and shall be made available to District personnel upon request.

(D) The portable analyzer diagnostic emission checks required under subparagraph (d)(8)(A) and (d)(8)(B) shall only be conducted by a person who has completed an appropriate District-approved training program in the operation of portable analyzers and has received a certification issued by the District.

(9) An owner or operator shall comply with the requirements as applied to CO emissions specified in paragraph (d)(8) and subparagraph:

(A) (d)(6)(A) for units greater than or equal to 10 mmbtu/hr, or

(B) (d)(6)(B) for units less than 10 mmbtu/hr.

(10) A diagnostic emission check conducted under the requirements specified in paragraph (d)(8) that finds emissions in excess of those allowed by this rule or a permit condition shall not constitute a violation of this rule if the owner or operator corrects the problem and demonstrate compliance with another emission check within 72 hours from the time the owner or operator knew of excess emissions, or reasonably should have known, or shut down the unit by the end of an operating cycle, whichever is sooner.

(11) Notwithstanding the requirements specified in paragraph (d)(10) any diagnostic emission check conducted by District staff that finds emissions in excess of those allowed by this rule or a permit condition is a violation.

(12) An owner or operator may opt to lower the unit's rated heat input capacity. The lowered rated heat input capacity shall not be less than or equal to 2 million Btu per hour and shall be based on manufacturer's identification or rating plate or permit condition.

(e) Compliance Schedule

(1) An owner or operator of units subject to paragraph (c)(1) shall comply with the schedule specified in Table 1146-1.

(2) An owner or operator of units subject to paragraph (c)(2) shall comply with the schedule specified in Table 1146-2.

(3) On or after January 1, 2015 or during burner replacement, whichever occurs later, no person shall operate in the District any unit subject to paragraph (c)(5) which does not meet the emissions limits specified in subparagraph (c)(1)(A) of Table 1146-1.

(4) Any unit subject to the requirements specified in paragraph (c)(5) that exceeds 90,000 therms of heat input from all fuels used in any twelve month period, the operators shall:

(A) within 4 months after exceeding 90,000 therms of heat input in any twelve month period, submit required applications for permits to construct and operate; and

(B) within 18 months after exceeding 90,000 therms of heat input in any twelve month period, demonstrate and maintain compliance with all applicable requirements of paragraphs (c)(1), (c)(2), (c)(3), and (c)(6) for the life of the unit.

(5) The Executive Officer shall grant a time extension to the full compliance date with the applicable NOx compliance limits specified in subparagraphs (c)(1)(E) through (c)(1)(J) and paragraph (c)(2) for any health facility as defined in Section 1250 of the California Health and Safety Code that can demonstrate that the Office of Statewide Health Planning and Development has approved an extension of time to comply with seismic safety requirements pursuant to Health and Safety Code Sections 130060 and 130061.5. The extension of time granted by the Executive Officer shall be consistent with the time extension granted pursuant to Health and Safety Code Section 130060 but not to exceed January 1, 2015 and shall be consistent with the time extension granted pursuant to Health and Safety Code Section 130061.5 but not to exceed January 1, 2020. Those health facilities granted a time extension shall submit a compliance plan to the Executive Officer on or before January 1, 2010.

ATTACHMENT 1

A. Equipment Tuning Procedure[1] for Forced-Draft Boilers, Steam Generators, and Process Heaters

Nothing in this Equipment Tuning Procedure shall be construed to require any act or omission that would result in unsafe conditions or would be in violation of any regulation or requirement established by Factory Mutual, Industrial Risk Insurers, National Fire Prevention Association, the California Department of Industrial Relations (Occupational Safety and Health Division), the Federal Occupational Safety and Health Administration, or other relevant regulations and requirements.
Should a different tuning procedure be used, a copy of this procedure should be kept with the unit records for two years and made available to the District personnel on request.

1. Operate the unit at the firing rate most typical of normal operation. If the unit experiences significant load variations during normal operation, operate it at its average firing rate.
2. At this firing rate, record stack gas temperature, oxygen concentration, and CO concentration (for gaseous fuels) or smoke-spot number[2] (for liquid fuels), and observe flame conditions after unit operation stabilizes at the firing rate selected. If the excess oxygen in the stack gas is at the lower end of the range of typical minimum values[3], and if CO emissions are low and there is not smoke, the unit is probably operating at near optimum efficiency - at this particular firing rate.

   However, complete the remaining portion of this procedure to determine whether still lower oxygen levels are practical.

3. Increase combustion air flow to the furnace until stack gas oxygen levels increase by one to two percent over the level measured in Step 2. As in Step 2, record the

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[1] This tuning procedure is based on a tune-up procedure developed by KVB, Inc. for the United States EPA.

[2] The smoke-spot number can be determined with ASTM Test Method D-2156 or with the Bacharach method. ASTM Test Method D-2156 is included in a tuneup kit that can be purchased from the Bacharach Company.

[3] Typical minimum oxygen levels for boilers at high firing rates are:

1. For natural gas: 0.5% - 3%
2. For liquid fuels: 2% - 4%

stack gas temperature, CO concentration (for gaseous fuels) or smoke-spot number (for liquid fuels), and observe flame conditions for these higher oxygen levels after boiler operation stabilizes.

4. Decrease combustion air flow until the stack gas oxygen concentration is at the level measured in Step 2. From this level gradually reduce the combustion air flow, in small increments. After each increment, record the stack gas temperature, oxygen concentration, CO concentration (for gaseous fuels) and smoke-spot number (for liquid fuels). Also observe the flame and record any changes in its condition.

5. Continue to reduce combustion air flow stepwise, until one of these limits is reached:
   a. Unacceptable flame conditions - such as flame impingement on furnace walls or burner parts, excessive flame carryover, or flame instability.
   b. Stack gas CO concentrations greater than 400 ppm.
   c. Smoking at the stack.
   d. Equipment-related limitations - such as low windbox/furnace pressure differential, built in air-flow limits, etc.

6. Develop an O_2/CO curve (for gaseous fuels) or O_2/smoke curve (for liquid fuels) similar to those shown in Figures 1 and 2 using the excess oxygen and CO or smoke-spot number data obtained at each combustion air flow setting.

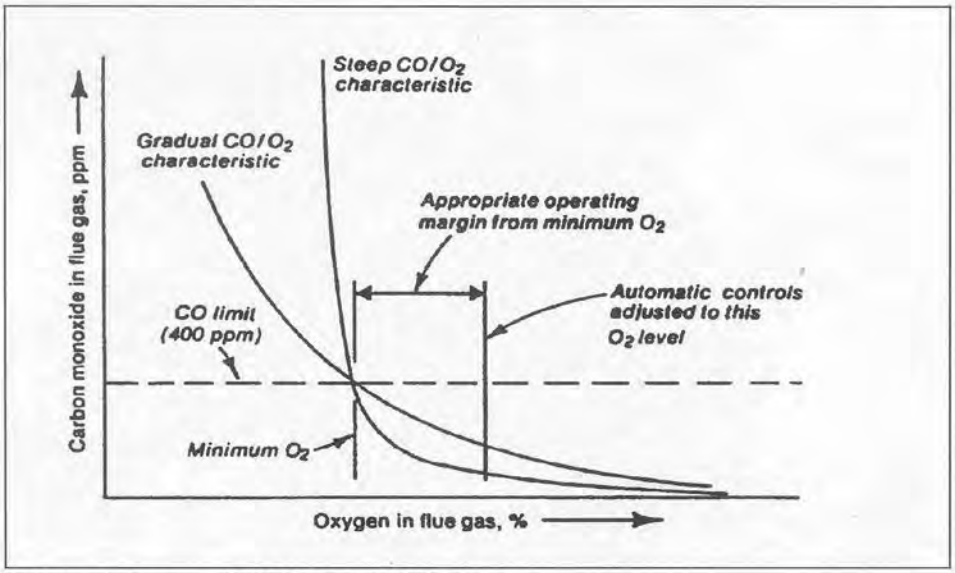

Figure 1 Oxygen/CO Characteristic Curve

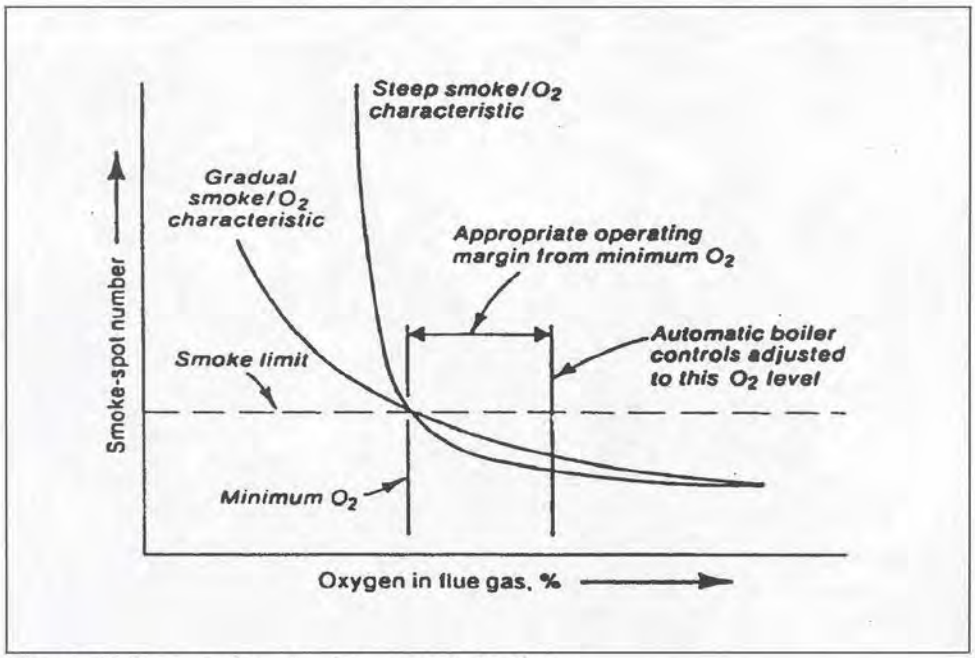

Figure 2 Oxygen/Smoke Characteristic Curve

7. From the curves prepared in Step 6, find the stack gas oxygen levels where the CO emissions or smoke-spot number equal the following values:

Fuel	Measurement	Value
Gaseous	CO Emissions	400 ppm
#1 and #2 oils	smoke-spot number	number 1
#4 oil	smoke-spot number	number 2
#5 oil	smoke-spot number	number 3
Other oils	smoke-spot number	number 4

The above conditions are referred to as the CO or smoke thresholds, or as the minimum excess oxygen level.

Compare this minimum value of excess oxygen to the expected value provided by the combustion unit manufacturer. If the minimum level found is substantially higher than the value provided by the combustion unit manufacturer, burner adjustments can probably be made to improve fuel and air mixing, thereby allowing operation with less air.

8. Add 0.5 to 2.0 percent O2 to the minimum excess oxygen level found in Step 7 and reset burner controls to operate automatically at this higher stack gas oxygen level. This margin above the minimum oxygen level accounts for fuel variations, variations in atmospheric conditions, load changes, and nonrepeatability or play in automatic controls.

9. If the load of the combustion unit varies significantly during normal operation, repeat Steps 1-8 for firing rates that represent the upper and lower limits of the range of the load. Because control adjustments at one firing rate may affect conditions at other firing rates, it may not be possible to establish the optimum excess oxygen level at all firing rates. If this is the case, choose the burner control settings that give best performance over the range of firing rates. If one firing rate predominates, settings should optimize conditions at that rate.
10. Verify that the new settings can accommodate the sudden load changes that may occur in daily operation without adverse effects. Do this by increasing and decreasing load rapidly while observing the flame and stack. If any of the conditions in Step 5 result, reset the combustion controls to provide a slightly higher level of excess oxygen at the affected firing rates. Next, verify these new settings in a similar fashion. Then make sure that the final control settings are recorded at steady-state operating conditions for future reference.
11. When the above checks and adjustments have been made, record data and attach combustion analysis data to boiler, steam generator, or heater records indicating name and signature of person, title, and date the tuneup was performed.

B. Equipment Tuning Procedure for Natural Draft-Fired Boilers, Steam Generators, and Process Heaters.

Nothing in this Equipment Tuning Procedure shall be construed to require any act or omission that would result in unsafe conditions or would be in violation of any regulation or requirement established by Factory Mutual, Industrial Risk Insurers, National Fire Prevention Association, the California Department of Industrial Relations (Occupational Safety and Health Division), the Federal Occupational Safety and Health Administration, or other relevant codes, regulations, and equipment manufacturers specifications and operating manuals.

Should a different tuning procedure be used, a copy of this procedure should be kept with the unit records for two years and made available to the District personnel on request.

1. **PRELIMINARY ANALYSIS**
   a. CHECK THE OPERATING PRESSURE OR TEMPERATURE.
      Operate the boiler, steam generator, or heater at the lowest acceptable pressure or temperature that will satisfy the load demand. This will minimize heat and radiation losses. Determine the pressure or temperature

that will be used as a basis for comparative combustion analysis before and after tuneup.

b. CHECK OPERATING HOURS.

Plan the workload so that the boiler, steam generator, or process heater operates only the minimum hours and days necessary to perform the work required. Fewer operating hours will reduce fuel use and emissions. For units requiring a tuneup to comply with the rule, a totalizing non-resettable fuel meter will be required for each fuel used and for each boiler, steam generator, and heater to prove fuel consumption is less than the heat input limit in therms per year specified in the rule.

c. CHECK AIR SUPPLY.

Sufficient fresh air supply is essential to ensure optimum combustion and the area of air supply openings must be in compliance with applicable codes and regulations. Air openings must be kept wide open when the burner is firing and clear from restriction to flow.

d. CHECK VENT.

Proper venting is essential to assure efficient combustion. Insufficient draft or overdraft promotes hazards and inefficient burning. Check to be sure that vent is in good condition, sized properly and with no obstructions.

e. COMBUSTION ANALYSIS.

Perform an "as is" combustion analysis (CO, O2, etc.) with a warmed up unit at high and low fire, if possible. In addition to data obtained from combustion analysis, also record the following:

i. Inlet fuel pressure at burner (at high & low fire)

ii. Draft at inlet to draft hood or barometric damper

1) Draft hood: high, medium, and low

2) Barometric Damper: high, medium, and low

iii. Steam pressure, water temperature, or process fluid pressure or temperature entering and leaving the boiler, steam generator, or process heater.

iv. Unit rate if meter is available.

With above conditions recorded, make the following checks and corrective actions as necessary:

2. **CHECKS & CORRECTIONS**

a. CHECK BURNER CONDITION.

Dirty burners or burner orifices will cause boiler, steam generator, or process heater output rate and thermal efficiency to decrease. Clean burners and burner orifices thoroughly. Also, ensure that fuel filters and moisture traps are in place, clean, and operating properly, to prevent plugging of gas orifices. Confirm proper location and orientation of burner diffuser spuds, gas canes, etc. Look for any burned-off or missing burner parts, and replace as needed.

b. CHECK FOR CLEAN BOILER, STEAM GENERATOR, OR PROCESS HEATER TUBES & HEAT TRANSFER SURFACES.

External and internal build-up of sediment and scale on the heating surfaces creates an insulating effect that quickly reduces unit efficiency. Excessive fuel cost will result if the unit is not kept clean. Clean tube surfaces, remove scale and soot, assure proper process fluid flow and flue gas flow.

c. CHECK WATER TREATMENT & BLOWDOWN PROGRAM.

Soft water and the proper water or process fluid treatment must be uniformly used to minimize scale and corrosion. Timely flushing and periodic blowdown must be employed to eliminate sediment and scale build-up on a boiler, steam generator or process heater.

d. CHECK FOR STEAM, HOT WATER OR PROCESS FLUID LEAKS.

Repair all leaks immediately since even small high-pressure leaks quickly lead to considerable fuel, water and steam losses. Be sure there are no leaks through the blow-off, drains, safety valve, by-pass lines or at the feed pump, if used.

3. **SAFETY CHECKS**

a. Test primary and secondary low water level controls.

b. Check operating and limit pressure and temperature controls.

c. Check pilot safety shut off operation.

d. Check safety valve pressure and capacity to meet boiler, steam generator or process heater requirements.

e. Check limit safety control and spill switch.

4. **ADJUSTMENTS**

While taking combustion readings with a warmed up boiler, steam generator, or process heater at high fire perform checks and adjustments as follows:

a. Adjust unit to fire at rate; record fuel manifold pressure.

b. Adjust draft and/or fuel pressure to obtain acceptable, clean combustion at both high, medium and low fire. Carbon Monoxide (CO) value should always be below 400 parts per million (PPM) at 3% 02. If CO is high make necessary adjustments.

Check to ensure boiler, steam generator, or process heater light offs are smooth and safe. A reduced fuel pressure test at both high and low fire should be conducted in accordance with the manufacturers instructions and maintenance manuals.

c. Check and adjust operation of modulation controller. Ensure proper, efficient and clean combustion through range of firing rates.

When above adjustments and corrections have been made, record all data.

5. **FINAL TEST**

Perform a final combustion analysis with a warmed up boiler, steam generator, or process heater at high, medium and low fire, whenever possible. In addition to data from combustion analysis, also check and record:

a. Fuel pressure at burner (High, Medium, and Low).

b. Draft above draft hood or barometric damper (High, Medium and Low).

c. Steam pressure or water temperature entering and leaving boiler, steam generator, or process heater.

d. Unit rate if meter is available.

When the above checks and adjustments have been made, record data and attach combustion analysis data to boiler, steam generator, or process heater records indicating name and signature of person, title, company name, company address and date the tuneup was performed.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted October 5, 1990)(Amended July 10, 1992)(Amended May 13, 1994)
(Amended September 5, 2008)(Amended November 1, 2013)

RULE 1146.1 EMISSIONS OF OXIDES OF NITROGEN FROM SMALL INDUSTRIAL, INSTITUTIONAL, AND COMMERCIAL BOILERS, STEAM GENERATORS, AND PROCESS HEATERS

(a) Applicability

This rule applies to boilers, steam generators, and process heaters that are greater than 2 million Btu per hour and less than 5 million Btu per hour rated heat input capacity used in any industrial, institutional, or commercial operation with the exception of RECLAIM facilities (NOx emissions only).

(b) Definitions

(1) ADSORPTION CHILLER UNIT means any natural gas fired unit that captures and uses waste heat to provide cold water for air conditioning and other process requirements.

(2) ANNUAL HEAT INPUT means the actual amount of heat released by fuels burned in a unit during a calendar year, based on the fuel's higher heating value.

(3) ATMOSPHERIC UNIT means any natural gas fired unit with a non-sealed combustion chamber in which natural draft is used to exhaust combustion gases.

(4) BOILER OR STEAM GENERATOR means any combustion equipment fired with liquid and/or gaseous (including landfill and digester gas) and/or solid fossil fuel, used to produce steam or to heat water, and that is not used exclusively to produce electricity for sale. Boiler or Steam Generator does not include any open heated tank, adsorption chiller unit, or waste heat recovery boiler that is used to recover sensible heat from the exhaust of a combustion turbine or any unfired waste heat recovery boiler that is used to recover sensible heat from the exhaust of any combustion equipment.

(5) BTU means British thermal unit or units.

(6) COMMERCIAL OPERATION means any office building, lodging place, or similar location designed for tenancy by one or more business entities or residential occupants.

(7) HEALTH FACILITY has the same meaning as defined in Section 1250 of the California Health and Safety Code.

(8) INDUSTRIAL OPERATION means any entity engaged in the production and/or provision of chemicals, foods, textiles, fabricated metal products, real estate, personal services or other kindred or allied products or services.

(9) INSTITUTIONAL OPERATION means any public or private establishment constituted to provide medical, educational, governmental, or other similar services to promote safety, order, and welfare.

(10) NOx EMISSIONS means the sum of nitric oxide and nitrogen dioxide in the flue gas, collectively expressed as nitrogen dioxide.

(11) OPEN HEATED TANK means a non-pressurized self-heated tank that may include a cover or doors that can be opened or detached to put in or remove parts, components or other material for processing in the tank. Tanks heated solely by an electric heater, boiler, thermal fluid heater or heat recovered from another process using heat exchangers are excluded from this definition.

(12) PROCESS HEATER means any combustion equipment fired with liquid and/or gaseous (including landfill and digester gas) and/or solid fossil fuel and which transfers heat from combustion gases to water or process streams. Process Heater does not include any kiln or oven used for drying, curing, baking, cooking, calcining, or vitrifying; or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.

(13) RATED HEAT INPUT CAPACITY means the heat input capacity specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different than the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the rated heat input capacity.

(14) SCHOOL means any public or private school, including juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including in kindergarten and grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property, but does not include unimproved school property.

(15) THERM means 100,000 Btu.

(16) THERMAL FLUID HEATER means a PROCESS HEATER in which a process is heated indirectly by a heated fluid other than water.

(17) UNIT means any boiler, steam generator, or process heater as defined in paragraph (b)(4) or (b)(12).

(c) Requirements

(1) On or after September 5, 2008, the owner or operator of any unit subject to subdivision (a) shall operate such unit so that it discharges into the atmosphere no more than 30 ppm of NOx emissions or for natural gas fired units 0.037 pound NOx per million Btu of heat input, as specified in the permit to operate.

(2) An owner or operator of any unit subject to subdivision (a) must select to comply with one of the following NOx emission limits specified in Table 1146.1-1 and apply for a permit to construct to operate such unit in compliance with the selected emission limit and the corresponding permit application and full compliance dates.

Table 1146.1-1

Category	**Limit**	**Submit Application for Permit to Construct on or before**	**Unit Shall be in Full Compliance on or before**
Any Units Fired on Landfill Gas	25 ppm	January 1, 2014	January 1, 2015
Any Units Fired on Digester Gas	15 ppm	January 1, 2014	January 1, 2015
Atmospheric Units	12 ppm or 0.015 lbs/10^6 Btu	January 1, 2013	January 1, 2014
Any Units Fired on Natural Gas, Excluding Units Located at Schools and Universities, Atmospheric Units, and Thermal Fluid Heaters	9 ppm or 0.011 lbs/10^6 Btu	January 1, 2011	January 1, 2012
Any Units Fired on Natural Gas Located at Schools and Universities, Excluding Atmospheric Units, and Thermal Fluid Heaters		January 1, 2013	January 1, 2014

(3) For dual fuel co-fired combustion units a weighted average limit calculated by Equation 1146.1-1 may be used provided a totalizing fuel flow meter is installed pursuant to paragraph (c)(7), for units burning a combination of both fuels.

$$\textbf{Weighted Limit} = \frac{(CL_A \times Q_A) + (CL_B \times Q_B)}{Q_A + Q_B} \qquad \textbf{Equation 1146.1-1}$$

Where:

CL_A = compliance limit for fuel A
CL_B = compliance limit for fuel B
Q_A = heat input from fuel A
Q_B = heat input from fuel B

(4) The owner or operator of any unit(s) with a heat input capacity greater than 2 million Btu per hour shall not discharge into the atmosphere carbon monoxide (CO) emissions in excess of 400 ppm or for natural gas fired units 0.30 lbs/10^6 Btu.

(5) In lieu of complying with the applicable emission limits specified in paragraph (c)(1), (c)(2), (c)(3), and (c)(4) any unit(s) subject to subdivision (a) in operation prior to September 5, 2008, and with an annual heat input of less than or equal to 18,000 therms per calendar year, shall:

(A) be operated in a manner that maintains stack-gas oxygen concentrations at less than or equal to 3 percent on a dry basis for any 15-consecutive-minute averaging period; or

(B) be tuned at least twice per year, (at intervals from four to eight months apart) in accordance with the procedure described in Attachment 1 or the unit manufacturer's specified tuneup procedure. If a different tuneup procedure from that described in attachment 1 is used then a copy of this procedure shall be kept on site. The operator of any unit(s) selecting the tune-up option shall maintain records for a rolling of twenty four month period verifying that the required tune-ups have been performed. If the unit does not operate throughout a continuous six-month period

within 12month period, only one tuneup is required for the twelve month period that includes the entire period of non-operation. For this case, the tune-up shall be conducted within 30 days of start-up. No tune-up is required during a rolling twelve month period for any unit that is not operated during that rolling 12month period; this unit may be test fired to verify availability of the unit for its intended use but once test firing is completed it shall be shutdown. Records of test firings shall be maintained for a rolling twenty four month period, and shall be made accessible upon request from an authorized District representative upon request.

(6) An owner or operator that has installed or modified a natural gas fired unit prior to September 5, 2008 complying with the applicable BACT emission limit of 12 ppm or less of NOx may defer compliance with paragraph (c)(2) until the unit's burner(s) replacement.

(7) Any owner or operator who chooses the pound per million Btu of heat input compliance option in paragraph (c)(1), (c)(2), or (c)(4) for natural gas fired units or chooses the weighted average emission limit using Equation 1146.1-1 under paragraph (c)(3) shall install a non-resettable, totalizing fuel meter for each fuel used on an individual unit basis, as approved by the Executive Officer.

(8) On or after January 1, 2015, an owner operator of any landfill or digester gas (biogas) unit co-fired with natural gas shall not operate the unit in a manner that exceeds the applicable landfill or digester gas emission concentration limits specified in paragraph (c)(2), provided that the facility monthly average biogas usage by the biogas units is 90% or more, based on the higher heating value of the fuels used.

(A) The Executive Officer may approve the burning of more than 10% up to:

(i) 25% natural gas in a biogas fired unit at the 15 ppm (digester gas) or 25 ppm (landfill gas) NOx level, when it is necessary, if the only alternative to limiting natural gas to 10% would be shutting down the unit and flaring more biogas.

(ii) 50% natural gas in a digester gas-fired unit at the 15 ppm NOx level, when it is necessary as specified in clause (c)(8)(A)(i) and for units installed on or after September 5,

2008 provided the unit has demonstrated compliance with the NOx limits in paragraph (c)(2) applicable to units fired exclusively on natural gas.

For units subject to this subparagraph, the percent natural gas usage shall be based on the facility monthly average biogas usage by the biogas units and the higher heating value of the fuels used.

(B) Any biogas-fired unit burning more than the approved percent natural gas as determined under subparagraph (c)(8)(A) shall comply with the weighted average NOx limit specified in paragraph (c)(3).

(d) Compliance Determination

(1) Owners or operators of any units shall have the option of complying with either the pound per million Btu of heat input or parts per million emission limits specified in paragraph (c)(1), (c)(2), (c)(3), or (c)(4).

(2) All emission determinations shall be made in the as-found operating condition, except no compliance determination shall be established during unit start up, shutdown, or under breakdown conditions. Start up or shutdown intervals shall not last longer than is necessary to reach stable temperatures. In no case shall the start up or shutdown interval last longer than six hours or the time specified in the permit to operate, whichever is less. Start-ups and shutdowns shall not last longer than is necessary to reach stable conditions. An compliance determination as specified in paragraph (d)(6) shall be conducted at least 250 operating hours, or at least thirty days subsequent to the tuning or servicing of any unit, unless it is an unscheduled repair.

(3) All parts per million emission limits specified in subdivision (c) are referenced at 3 percent volume stack-gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.

(4) Compliance with the NOx and CO emission requirements of paragraphs (c)(1) through (c)(4) and the stack-gas oxygen concentration requirement of subparagraph (c)(5)(A) shall be determined using a District approved contractor under the Laboratory Approval Program according to the following procedures:

(A) District Source Test Method 100.1 - Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling (March 1989); or

(B) District Source Test Method 7.1 - Determination of Nitrogen Oxide Emissions from Stationary Sources (March 1989) and Method 10.1 - Carbon Monoxide and Carbon Dioxide by Gas Chromatograph/Non-Dispersive Infrared Detector (GC/NDIR) - Oxygen by Gas Chromatograph-Thermal Conductivity (GC/TCD) (March 1989); or

(C) United States Environmental Protection Agency Conditional Test Method CTM-030, Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers; or

(D) ASTM D6522-00(2005) Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers

(E) any other test method determined to be alternative and approved before the test in writing by the Executive Officers of the District and the California Air Resources Board and the Regional Administrator of the United States Environmental Protection Agency, Region IX.

Records of all source tests shall be maintained for a period of two years (five years for Title V facilities) and shall be made available to District personnel upon request. Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of this rule.

(5) For any owner or operator who chooses the pounds of per million Btu of heat input compliance option of paragraph (c)(1), (c)(2), or (c)(4) for natural gas fired units, NOx emissions in pounds per million Btu of heat input shall be calculated using the procedures in 40 CFR Part 60, Appendix A, Method 19, Sections 2 and 3 and CO emissions in pounds per million Btu of heat input shall be calculated according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and

Oxygen from Units Subject to South Coast Air Quality Management District Rules 1146 and 1146.1.

(6) Compliance determination with the NOx emission requirements specified in paragraph (d)(4) shall be conducted once every five years.

(7) Any owner or operator of units subject to this rule shall perform diagnostic emission checks of NOx emissions with a portable NOx, CO and oxygen analyzer according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to South Coast Air Quality Management District Rules 1146 and 1146.1 according to the following schedule:

(A) On or after July 1, 2009, the owner or operator of units subject to paragraphs (c)(1) through (c)(4) shall check NOx emissions at least quarterly or every 2,000 unit operating hours, whichever occurs later. If a unit is in compliance for four consecutive required diagnostic emission checks, without any adjustments to the oxygen sensor set points, then the unit may be checked semi-annually or every 4,000 unit operating hours, whichever occurs later, until the diagnostic emission check exceeds the applicable limit specified in paragraphs (c)(1), (c)(2), or (c)(3).

(B) On or after January 1, 2015 or during burner replacement, whichever occurs later, units subject to paragraph (c)(5) shall check NOx emissions according to the tune-up schedule specified in subparagraph (c)(5)(B).

(C) Records of all monitoring data required under subparagraphs (d)(7)(A) and (d)(7)(B) shall be maintained for a rolling twelve month period of two years (five years for Title V facilities) and shall be made available to District personnel upon request.

(D) The portable analyzer diagnostic emission checks required under subparagraphs (d)(7)(A) and (d)(7)(B) shall only be conducted by a person who has completed an appropriate District-approved training program in the operation of portable analyzers and has received a certification issued by the District.

(8) An owner or operator shall comply with the requirements as applied to CO emissions specified in paragraphs (d)(6) and (d)(7).

(9) A diagnostic emission check conducted under the requirements specified in paragraph (d)(7) that finds emissions in excess of those allowed by this

rule or a permit condition shall not constitute a violation of this rule if the owner or operator corrects the problem and demonstrate compliance with another emission check within 72 hours from the time the owner or operator knew of excess emissions, or reasonably should have known, or shut down the unit by the end of an operating cycle, whichever is sooner.

(10) Notwithstanding the requirements specified in paragraph (d)(9) any diagnostic emission check conducted by District staff that finds emissions in excess of those allowed by this rule or a permit condition is a violation.

(11) An owner or operator may opt to lower the unit's rated heat input capacity. The lowered rated heat input capacity shall not be less than or equal to 2 million Btu per hour and shall be based on manufacturer's identification or rating plate or permit condition.

(e) Compliance Schedule

(1) Owners or operators of units shall comply with the applicable schedule specified in paragraphs (c)(1) and (c)(2).

(2) On or after January 1, 2015 or during burner replacement, whichever is later, no person shall operate in the District any unit subject to paragraph (c)(5) which does not meet the emissions limits specified in paragraph (c)(1).

(3) If any unit subject to paragraph (c)(5) exceeds 18,000 therms of annual heat input from all fuels used in any twelve month period, the owners or operators shall:

(A) within 4 months after exceeding 18,000 therms of heat input in any twelve month period, submit required applications for permits to construct and operate; and

(B) within 18 months after exceeding 18,000 therms of heat input in any twelve month period, demonstrate and maintain compliance with all applicable requirements specified in paragraphs (c)(1) through (c)(4) for the life of the unit.

(4) The Executive Officer shall grant a time extension to the full compliance date with the applicable NOx compliance limits for any natural gas fired units specified in paragraph (c)(2) for any health facility as defined in Section 1250 of the California Health and Safety Code that can demonstrate that the Office of Statewide Health Planning and Development has approved an extension of time to comply with seismic

safety requirements pursuant to Health and Safety Code Sections 130060 and 130061.5. The extension of time granted by the Executive Officer shall be consistent with the time extension granted pursuant to Health and Safety Code Section 130060 but not to exceed January 1, 2015 and shall be consistent with the time extension granted pursuant to Health and Safety Code Section 130061.5 but not to exceed January 1, 2020. Those health facilities granted a time extension shall submit a compliance plan to the Executive Officer on or before January 1, 2010.

ATTACHMENT 1

A. Equipment Tuning Procedure[1] for Forced-Draft Boilers, Steam Generators, and Process Heaters

Nothing in this Equipment Tuning Procedure shall be construed to require any act or omission that would result in unsafe conditions or would be in violation of any regulation or requirement established by Factory Mutual, Industrial Risk Insurers, National Fire Prevention Association, the California Department of Industrial Relations (Occupational Safety and Health Division), the Federal Occupational Safety and Health Administration, or other relevant regulations and requirements.

1. Operate the unit at the firing rate most typical of normal operation. If the unit experiences significant load variations during normal operation, operate it at its average firing rate.
2. At this firing rate, record stack gas temperature, oxygen concentration, and CO concentration (for gaseous fuels) or smoke-spot number[2] (for liquid fuels), and observe flame conditions after unit operation stabilizes at the firing rate selected. If the excess oxygen in the stack gas is at the lower end of the range of typical minimum values[3], and if CO emissions are low and there is not smoke, the unit is probably operating at near optimum efficiency - at this particular firing rate.
3. Increase combustion air flow to the furnace until stack gas oxygen levels increase by one to two percent over the level measured in Step 2. As in Step 2, record the stack gas temperature, CO concentration (for gaseous fuels) or smoke-spot number (for liquid fuels), and observe flame conditions for these higher oxygen levels after boiler operation stabilizes.

However, complete the remaining portion of this procedure to determine whether still lower oxygen levels are practical.

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[1]This tuning procedure is based on a tune-up procedure developed by KVB, Inc. for the United States EPA.

[2]The smoke-spot number can be determined with ASTM Test Method D-2156 or with the Bacharach method. ASTM Test Method D-2156 is included in a tuneup kit that can be purchased from the Bacharach Company.

[3]Typical minimum oxygen levels for boilers at high firing rates are:

1. For natural gas: 0.5% - 3%
2. For liquid fuels: 2% - 4%

4. Decrease combustion air flow until the stack gas oxygen concentration is at the level measured in Step 2. From this level gradually reduce the combustion air flow, in small increments. After each increment, record the stack gas temperature, oxygen concentration, CO concentration (for gaseous fuels) and smoke-spot number (for liquid fuels). Also observe the flame and record any changes in its condition.
5. Continue to reduce combustion air flow stepwise, until one of these limits is reached:
   a. Unacceptable flame conditions - such as flame impingement on furnace walls or burner parts, excessive flame carryover, or flame instability.
   b. Stack gas CO concentrations greater than 400 ppm.
   c. Smoking at the stack.
   d. Equipment-related limitations - such as low windbox/furnace pressure differential, built in air-flow limits, etc.
6. Develop an O_2/CO curve (for gaseous fuels) or O_2/smoke curve (for liquid fuels) similar to those shown in Figures 1 and 2 using the excess oxygen and CO or smoke-spot number data obtained at each combustion air flow setting.

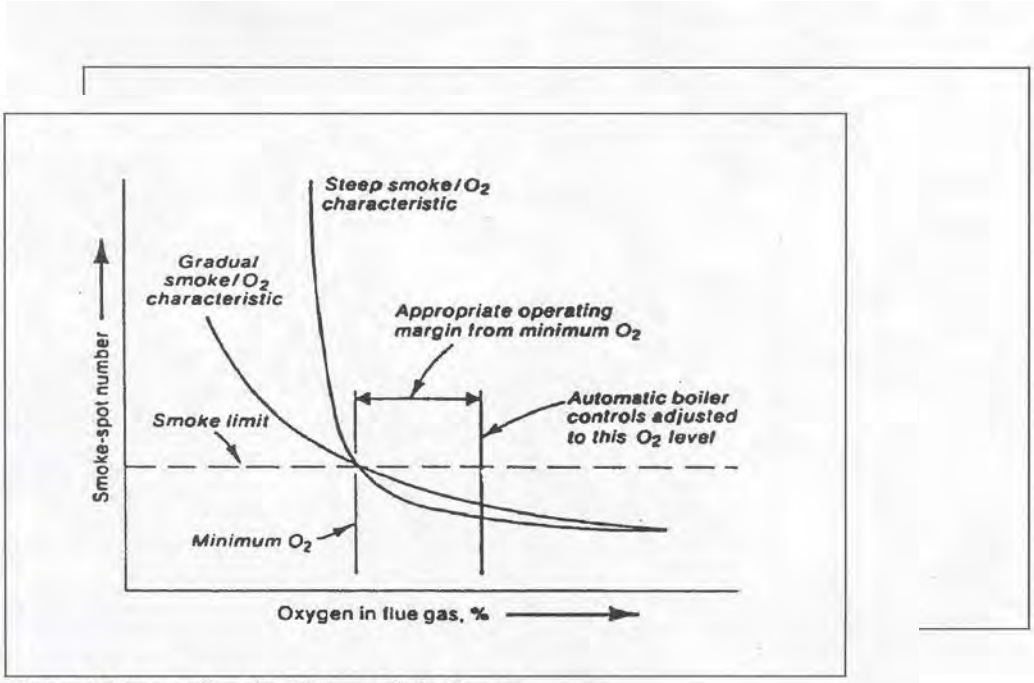


Figure 2 Oxygen/Smoke Characteristic Curve

7. From the curves prepared in Step 6, find the stack gas oxygen levels where the CO emissions or smoke-spot number equal the following values:

Fuel	Measurement	Value
Gaseous	CO Emissions	400 ppm
#1 and #2 oils	smoke-spot number	number 1
#4 oil	smoke-spot number	number 2
#5 oil	smoke-spot number	number 3
Other oils	smoke-spot number	number 4

The above conditions are referred to as the CO or smoke thresholds, or as the minimum excess oxygen level.

Compare this minimum value of excess oxygen to the expected value provided by the combustion unit manufacturer. If the minimum level found is substantially higher than the value provided by the combustion unit manufacturer, burner adjustments can probably be made to improve fuel and air mixing, thereby allowing operation with less air.

8. Add 0.5 to 2.0 percent O2 to the minimum excess oxygen level found in Step 7 and reset burner controls to operate automatically at this higher stack gas oxygen level. This margin above the minimum oxygen level accounts for fuel variations, variations in atmospheric conditions, load changes, and nonrepeatability or play in automatic controls.

9. If the load of the combustion unit varies significantly during normal operation, repeat Steps 1-8 for firing rates that represent the upper and lower limits of the range of the load. Because control adjustments at one firing rate may affect conditions at other firing rates, it may not be possible to establish the optimum excess oxygen level at all firing rates. If this is the case, choose the burner control settings that give best performance over the range of firing rates. If one firing rate predominates, settings should optimize conditions at that rate.

10. Verify that the new settings can accommodate the sudden load changes that may occur in daily operation without adverse effects. Do this by increasing and decreasing load rapidly while observing the flame and stack. If any of the conditions in Step 5 result, reset the combustion controls to provide a slightly higher level of excess oxygen at the affected firing rates. Next, verify these new settings in a similar

fashion. Then make sure that the final control settings are recorded at steady-state operating conditions for future reference.

11. When the above checks and adjustments have been made, record data and attach combustion analysis data to boiler, steam generator, or heater records indicating name and signature of person, title, and date the tuneup was performed.

B. Equipment Tuning Procedure for Natural Draft-Fired Boilers, Steam Generators, and Process Heaters.

Nothing in this Equipment Tuning Procedure shall be construed to require any act or omission that would result in unsafe conditions or would be in violation of any regulation or requirement established by Factory Mutual, Industrial Risk Insurers, National Fire Prevention Association, the California Department of Industrial Relations (Occupational Safety and Health Division), the Federal Occupational Safety and Health Administration, or other relevant codes, regulations, and equipment manufacturers specifications and operating manuals.

Should a different tuning procedure be used, a copy of this procedure should be kept with the unit records for two years and made available to the District personnel on request.

1. **PRELIMINARY ANALYSIS**

a. CHECK THE OPERATING PRESSURE OR TEMPERATURE.

Operate the boiler, steam generator, or heater at the lowest acceptable pressure or temperature that will satisfy the load demand. This will minimize heat and radiation losses. Determine the pressure or temperature that will be used as a basis for comparative combustion analysis before and after tuneup.

b. CHECK OPERATING HOURS.

Plan the workload so that the boiler, steam generator, or process heater operates only the minimum hours and days necessary to perform the work required. Fewer operating hours will reduce fuel use and emissions. For units requiring a tuneup to comply with the rule, a totalizing non-resettable fuel meter will be required for each fuel used and for each boiler, steam generator, and heater to prove fuel consumption is less than the heat input limit in therms per year specified in the rule.

c. CHECK AIR SUPPLY.

Sufficient fresh air supply is essential to ensure optimum combustion and the area of air supply openings must be in compliance with applicable codes and regulations. Air openings must be kept wide open when the burner is firing and clear from restriction to flow.

d. CHECK VENT.

Proper venting is essential to assure efficient combustion. Insufficient draft or overdraft promotes hazards and inefficient burning. Check to be sure that vent is in good condition, sized properly and with no obstructions.

e. COMBUSTION ANALYSIS.

Perform an "as is" combustion analysis (CO, O_2, etc.) with a warmed up unit at high and low fire, if possible. In addition to data obtained from combustion analysis, also record the following:

i. Inlet fuel pressure at burner (at high & low fire)

ii. Draft at inlet to draft hood or barometric damper

1) Draft hood: high, medium, and low

2) Barometric Damper: high, medium, and low

iii. Steam pressure, water temperature, or process fluid pressure or temperature entering and leaving the boiler, steam generator, or process heater.

iv. Unit rate if meter is available.

With above conditions recorded, make the following checks and corrective actions as necessary:

2. **CHECKS & CORRECTIONS**

a. CHECK BURNER CONDITION.

Dirty burners or burner orifices will cause boiler, steam generator, or process heater output rate and thermal efficiency to decrease. Clean burners and burner orifices thoroughly. Also, ensure that fuel filters and moisture traps are in place, clean, and operating properly, to prevent plugging of gas orifices. Confirm proper location and orientation of burner diffuser spuds, gas canes, etc. Look for any burned-off or missing burner parts, and replace as needed.

b. CHECK FOR CLEAN BOILER, STEAM GENERATOR, OR PROCESS HEATER TUBES & HEAT TRANSFER SURFACES.

External and internal build-up of sediment and scale on the heating surfaces creates an insulating effect that quickly reduces unit efficiency. Excessive fuel cost will result if the unit is not kept clean. Clean tube surfaces, remove scale and soot, assure proper process fluid flow and flue gas flow.

c. CHECK WATER TREATMENT & BLOWDOWN PROGRAM.

Soft water and the proper water or process fluid treatment must be uniformly used to minimize scale and corrosion. Timely flushing and periodic blowdown must be employed to eliminate sediment and scale build-up on a boiler, steam generator or process heater.

d. CHECK FOR STEAM, HOT WATER OR PROCESS FLUID LEAKS

Repair all leaks immediately since even small high-pressure leaks quickly lead to considerable fuel, water and steam losses. Be sure there are no leaks through the blow-off, drains, safety valve, by-pass lines or at the feed pump, if used.

3. **SAFETY CHECKS**

a. Test primary and secondary low water level controls.

b. Check operating and limit pressure and temperature controls.

c. Check pilot safety shut off operation.

d. Check safety valve pressure and capacity to meet boiler, steam generator or process heater requirements.

e. Check limit safety control and spill switch.

4. **ADJUSTMENTS**

While taking combustion readings with a warmed up boiler, steam generator, or process heater at high fire perform checks and adjustments as follows:

a. Adjust unit to fire at rate; record fuel manifold pressure.

b. Adjust draft and/or fuel pressure to obtain acceptable, clean combustion at both high, medium and low fire. Carbon Monoxide (CO) value should always be below 400 parts per million (PPM) at 3% 0_2. If CO is high make necessary adjustments.

Check to ensure boiler, steam generator, or process heater light offs are smooth and safe. A reduced fuel pressure test at both high and low fire should be conducted in accordance with the manufacturers instructions and maintenance manuals.

c. Check and adjust operation of modulation controller. Ensure proper, efficient and clean combustion through range of firing rates.

When above adjustments and corrections have been made, record all data.

5. **FINAL TEST**

Perform a final combustion analysis with a warmed up boiler, steam generator, or process heater at high, medium and low fire, whenever possible. In addition to data from combustion analysis, also check and record:

a. Fuel pressure at burner (High, Medium, and Low).

b. Draft above draft hood or barometric damper (High, Medium and Low).

c. Steam pressure or water temperature entering and leaving boiler, steam generator, or process heater.

d. Unit rate if meter is available.

When the above checks and adjustments have been made, record data and attach combustion analysis data to boiler, steam generator, or process heater records indicating name and signature of person, title, company name, company address and date the tuneup was performed.

(Adopted January 9, 1998) (Amended January 7, 2005) (Amended May 5, 2006)

RULE 1146.2. EMISSIONS OF OXIDES OF NITROGEN FROM LARGE WATER HEATERS AND SMALL BOILERS AND PROCESS HEATERS

(a) Purpose and Applicability

The purpose of this rule is to reduce NOx emissions from natural gas-fired water heaters, boilers, and process heaters as defined in this rule. This rule applies to units that have a rated heat input capacity less than or equal to 2,000,000 Btu per hour. Type 1 Units as defined in this rule are typically, but not exclusively, large water heaters or smaller-sized process heaters in the above range. Type 2 Units as defined in this rule are typically, but not exclusively, small boilers or larger-sized process heaters in this range. Beginning, January 1, 2000, the provisions of this rule are applicable to manufacturers, distributors, retailers, refurbishers, installers and operators of new units. Beginning, July 1, 2002, the provisions of this rule are also applicable to operators of existing Type 2 Units.

(b) Definitions

(1) BOILER OR STEAM GENERATOR means any equipment that is fired with or is designed to be fired with natural gas, used to produce steam or to heat water, and that is not used exclusively to produce electricity for sale. Boiler or Steam Generator does not include any waste heat recovery boiler that is used to recover sensible heat from the exhaust of a combustion turbine or any unfired waste heat recovery boiler that is used to recover sensible heat from the exhaust of any combustion equipment.

(2) BTU means British thermal unit or units.

(3) CERTIFIED RETROFIT KIT means any burner and ancillary controls or blowers that have been demonstrated to comply with the provisions of this rule, on a retrofit basis, on a particular model of unit.

(4) FIRE TUBE BOILER means a BOILER in which hot gases from the combustion chamber pass through one or more tubes within the boiler.

(5) HEAT INPUT means the higher heating value of the fuel to the unit measured as BTU per hour.

(6) HEAT OUTPUT means the enthalpy of the working fluid output of the unit.

(7) INDEPENDENT TESTING LABORATORY means a testing laboratory that meets the requirements of District Rule 304, subdivision (k) and is approved by the District to conduct certification testing under the Protocol.

(8) INSTANTANEOUS WATER HEATER means a WATER HEATER with a rated heat input capacity less than or equal to 2,000,000 Btu per hour that heats water only when it flows through a heat exchanger.

(9) NOx EMISSIONS means the sum of nitrogen oxide and nitrogen dioxide in the flue gas, collectively expressed as nitrogen dioxide.

(10) POOL HEATER means a WATER HEATER designed to heat a pool, hot tub or spa.

(11) PROCESS HEATER means any equipment that is fired with or is designed to be fired with natural gas and which transfers heat from combustion gases to water or process streams. Process Heater does not include any kiln or oven used for annealing, drying, curing, baking, cooking, calcining, or vitrifying; or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.

(12) PROTOCOL means South Coast Air Quality Management District Protocol: Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers.

(13) RATED HEAT INPUT CAPACITY means the gross heat input of the combustion device, as supported by required documentation and which shall be specified on a permanent rating plate.

(14) RECREATIONAL VEHICLE means any vehicle used for recreational purposes designed to include a water heater and licensed to be driven or moved on the highways of California.

(15) REFURBISHER means anyone who reconditions a Type 1 Unit or Type 2 Unit and offers the unit for resale, for use in the District.

(16) RESELLER means anyone who sells either retail, wholesale or on an individual basis Type 1 Units or Type 2 Units.

(17) RESIDENTIAL means any structure which is designed for and used exclusively as a dwelling for not more than four families, and where such equipment is used by the owner or occupant of such a dwelling.

(18) TANK TYPE WATER HEATER means a WATER HEATER with a rated heat input capacity from 75,000 Btu per hour to 2,000,000 Btu per hour

and with an integral closed vessel in which water is heated and stored for use external to the vessel.

(19) THERM means 100,000 BTU.

(20) THERMAL FLUID HEATER means a PROCESS HEATER in which a process is heated indirectly by a heated fluid other than water.

(21) TYPE 1 UNIT means any water heater, boiler or process heater with a RATED HEAT INPUT CAPACITY less than or equal to 400,000 BTU per hour excluding TANK TYPE WATER HEATERS subject to the limits of District Rule 1121.

(22) TYPE 2 UNIT means any water heater, boiler or process heater with a RATED HEAT INPUT CAPACITY greater than 400,000 BTU per hour up to and including 2,000,000 BTU per hour.

(23) UNIT means any boiler, steam generator, water heater or process heater as defined in paragraph (b)(1), (b)(3), (b)(4), (b)(8), (b)(10), (b)(11), (b)(18), (b)(20), (b)(21), (b)(22) or (b)(24).

(24) WATER HEATER means any equipment that is fired with or designed to be fired with natural gas and that is used solely to heat water for use external to the equipment.

(c) Requirements

(1) On or after January 1, 2000, no person shall manufacture for use, or offer for sale for use, in the District any new Type 2 Unit, unless the NOx emissions level is less than or equal to 30 ppm of NOx emissions (at 3% O_2, dry) or 0.037 pound NOx per million Btu of heat input and no more than 400 ppm of carbon monoxide (at 3% O_2, dry), as certified by the District according to subdivision (d).

(2) On or after January 1, 2001, no person shall manufacture for use, or offer for sale for use, in the District any new Type 1 Unit, unless the NOx emissions level is less than or equal to 40 nanograms of NOx (calculated as NO_2) per joule (93 lb per billion Btu) of heat output or 55 ppm NOx emissions (at 3% O_2, dry), as certified by the District according to subdivision (d).

(3) On or after July 1, 2002, no person shall operate in the District any unit with a rated heat input capacity greater than 1,000,000 Btu per hour but less than or equal to 2,000,000 Btu per hour manufactured prior to January 1, 1992, which does not meet the emissions limits required by paragraph

(c)(1). Alternatively, a unit may be modified or demonstrated to meet the emission limits of paragraph (c)(1) pursuant to the provisions of subdivision (e).

(4) On or after January 1, 2006, no person shall operate in the District any unit more than 15 years old, based on the original date of manufacture as specified in paragraph (c)(6), with a rated heat input capacity greater than 1,000,000 Btu per hour but less than or equal to 2,000,000 Btu per hour and manufactured on or after January 1, 1992, which does not meet the emissions limits required by paragraph (c)(1). Alternatively, a unit may be modified or demonstrated to meet the emission limits of paragraph (c)(1) pursuant to the provisions of subdivision (e).

(5) On or after January 1, 2006, no person shall operate in the District any unit more than 15 years old, based on the original date of manufacture as specified in paragraph (c)(6), with a rated heat input capacity greater than 400,000 Btu per hour but less than or equal to 1,000,000 Btu per hour manufactured prior to January 1, 2000, which does not meet the emissions limits required by paragraph (c)(1). Alternatively, a unit may be modified or demonstrated to meet the emission limits of paragraph (c)(1) pursuant to the provisions of subdivision (e).

(6) The original date of manufacture shall be determined by:

(A) Original manufacturer's identification or rating plate permanently fixed to the equipment. If not available, then;

(B) Invoice from manufacturer for purchase of equipment. If not available, then:

(C) Unit is deemed to be more than 15 years old.

(7) On or after January 1, 2010, no person shall manufacture for use or offer for sale for use within the District any Type 2 unit unless the unit is certified pursuant to subdivision (d) to a NOx emission level of less than 14 nanograms of NOx (calculated as NO_2) per joule of heat output or less than or equal to 20 ppm of NOx emissions (at 3% O_2, dry).

(8) On or after January 1, 2012, no person shall manufacture for use or offer for sale for use within the District any Type 1 unit (excluding pool heaters), unless the unit is certified pursuant to subdivision (d) to a NOx emission level of less than 14 nanograms of NOx (calculated as NO_2) per joule of heat output or less than or equal to 20 ppm of NOx emissions (at 3% O_2, dry).

(9) On or after May 5, 2006, the owner or operator of any Type 2 unit shall perform maintenance in accordance with the manufacturer's schedule and specifications as identified in a manual and other written materials supplied by the manufacturer or distributor. The owner or operator shall maintain on site a copy of the manufacturer's and/or distributor's written instructions and retain a record of the maintenance activity for a period of not less than three years.

(10) The owner or operator shall maintain on site a copy of all documents identifying the unit's rated heat input capacity. The rated heat input capacity shall be identified by a manufacturer's or distributor's manual or invoice. If a unit is modified, the rated heat input capacity shall be calculated pursuant to paragraph (f)(3). The documentation of rated heat input capacity for modified units shall include a description of all modifications, the dates the unit was modified and calculation of rated heat input capacity. All documentation shall be signed by the licensed person modifying the unit.

(11) Notwithstanding the requirements in paragraph (c)(7), until December 31, 2010, any person may sell, offer for sale, or install any Type 2 units that are manufactured and purchased prior to January 1, 2010 and in compliance with paragraph (c)(1).

(12) Notwithstanding the requirements in paragraph (c)(8), until December 31, 2012, any person may sell, offer for sale, or install any Type 1 units that are manufactured and purchased prior to January 1, 2012 and in compliance with paragraph (c)(2).

(d) Certification

(1) The manufacturer shall obtain confirmation from an independent testing laboratory prior to applying for certification that, each unit model or retrofit kit complies with the applicable requirements of subdivision (c). This confirmation shall be based upon emission tests of a randomly selected unit of each model, and the Protocol shall be adhered to during the confirmation testing of all units subject to this rule.

(2) When applying for unit(s) certification, the manufacturer shall submit to the Executive Officer the following:

(A) A statement that the model is in compliance with subdivision (c). The statement shall be signed and dated, and shall attest to the accuracy of all statements;

(B) General Information

(i) Name and address of manufacturer,

(ii) Brand name, and

(iii) Model number, as it appears on the unit rating plate;

(C) A description of each model being certified; and

(D) A source test report verifying compliance with the emission limits in subdivision (c) for each model to be certified. The source test report shall be prepared by the confirming independent testing laboratory and shall contain all of the elements identified in Section 10 of the Protocol for each unit tested. The source test shall have been conducted no more than ninety (90) days prior to the date of submittal to the Executive Officer.

(3) When applying for unit certification, the manufacturer shall submit the items identified in paragraph (d)(2) no more than ninety (90) days after the date of the source test identified in subparagraph (d)(2)(D) and at least 120 days prior to the date of the proposed sale of the units.

(4) The Executive Officer shall certify a unit model which complies with the provisions of subdivision (c) and of paragraphs (d)(1), (d)(2), and (d)(3).

(5) Certification status shall be valid for three years from the date of approval by the Executive Officer. After the third year, recertification may be required according to the requirements of paragraphs (d)(1) and (d)(2).

(e) Modification (Retrofit) Provisions and Demonstration of Compliance With Emission Limits.

Any unit, may be modified or demonstrated to meet the requirements of paragraph (c)(1), (c)(2), (c)(3), (c)(4), or (c)(5) provided:

(1) The unit is certified pursuant to subdivision (d); or

(2) A certified retrofit kit has been installed; or

(3) A copy of a source test report conducted by an independent third party, demonstrating the specific unit complies with the emission limits at low and high fire, shall be maintained on-site; and

(4) The source test report clearly specifies the emissions limit of the unit in parts per million or pounds of NOx per million Btu of heat input. The

source test report must identify that the source test was conducted pursuant to a District approved protocol; and

(5) The source test report shall be maintained on-site at the facility where the unit is being operated and made available to the Executive Officer, at all times, upon request, as long as the unit is being operated. The model and serial numbers of the specified unit shall clearly be indicated on the source test report.

(f) Identification of Compliant Units

(1) Newly Manufactured Units

The manufacturer shall display the model number of the unit complying with subdivision (c) on the shipping carton and permanent rating plate. The manufacturer shall also display the certification status on the shipping carton and on the unit.

(2) Certified Retrofit Kits

The manufacturer shall display the model number of the retrofit kit and manufacturer and model of applicable units on the shipping carton and in a plainly visible portion of the retrofit kit.

(3) Modified Units

A unit with a new or modified burner shall display the new rated heat input capacity and certification status on a new permanent rating plate. The gross heat input shall be based on the maximum fuel input corrected for fuel heat content, temperature and pressure.

(g) Enforcement

The Executive Officer may periodically inspect distributors, retailers, and installers of units located in the District, and conduct such tests as are deemed necessary to ensure compliance with subdivision (c).

(h) Exemptions

(1) The provisions of this rule shall not apply to:

(A) Units used in recreational vehicles.

(B) Units subject to the limits in District Rule 1121 – Control of Nitrogen Oxides From Residential Type, Natural Gas-fired Water Heaters.

(2) The provisions of paragraphs (c)(3), (c)(4), and (c)(5) shall not apply to:

(A) Any residential unit.

(B) Units with a rated heat input capacity greater than 400,000 Btu per hour, but less than or equal to 2,000,000 Btu per hour that are demonstrated to use less than 9,000 therms during every calendar year. Compliance with the exemption limit shall be demonstrated by a calculation based on the annual fuel consumption recorded by an in line fuel meter or the annual operating hours recorded by a timer and using one of the following methods.

(i) Annual therm usage recorded by fuel meter and corrected to standard pressure; or

(ii) Amount of fuel (i.e., in thousand cubic feet of gas corrected to standard pressure) converted to therms using the higher heating value of the fuel; or

(iii) Annual therm usage calculated by multiplying the number of hours fuel is burned by the rated heat input capacity of the unit converted to therms.

(3) The NOx emission limits of paragraphs (c)(1), (c)(2), (c)(3), (c)(4) and (c)(5) of this rule shall not apply to units located at RECLAIM facilities.

(i) Progress Reports

Any person that manufacturers Type 1 units or Type 2 fire tube boilers, steam boilers producing steam pressure greater than 100 pounds per square inch or thermal fluid heaters subject to this rule shall submit to the District a report on progress towards compliance with the emission limits of paragraphs (c)(7) and (c)(8). Progress reports shall include detailed information on all burner and control technologies evaluated and emission tests. The progress reports shall be submitted to the District for the following categories of equipment by the specified date:

(1) Type 2 fire tube boilers, steam boilers producing steam pressure greater than 100 pounds per square inch and thermal fluid heaters shall be submitted to the District by January 31, 2008.

(2) Type 1 units shall be submitted to the District by January 31, 2010.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted December 5, 2008) (Amended September 9, 2011)

RULE 1147 NOx REDUCTIONS FROM MISCELLANEOUS SOURCES

(a) Purpose and Applicability

The purpose of this rule is to reduce nitrogen oxide emissions from gaseous and liquid fuel fired combustion equipment as defined in this rule. This rule applies to ovens, dryers, dehydrators, heaters, kilns, calciners, furnaces, crematories, incinerators, heated pots, cookers, roasters, fryers, closed and open heated tanks and evaporators, distillation units, afterburners, degassing units, vapor incinerators, catalytic or thermal oxidizers, soil and water remediation units and other combustion equipment with nitrogen oxide emissions that require a District permit and are not specifically required to comply with a nitrogen oxide emission limit by other District Regulation XI rules. This rule does not apply to solid fuel-fired combustion equipment, internal combustion engines subject to District Rule 1110.2, turbines, charbroilers, or boilers, water heaters, thermal fluid heaters and enclosed process heaters subject to District Rules 1109, 1146, 1146.1, or 1146.2 and equipment subject to District Rules 1111, 1112, 1117, 1118, 1121, or 1135.

(b) Definitions

(1) ANNUAL CAPACITY FACTOR means the ratio of the ANNUAL HEAT INPUT of a unit in a calendar year to the amount of fuel it could have burned if it had operated at the rated heat input capacity for 100 percent of the time during the calendar year.

(2) ANNUAL HEAT INPUT means the actual amount of heat released by fuels burned in a unit during a calendar year, based on the fuel's higher heating value.

(3) BTU means British thermal unit or units.

(4) COMBUSTION MODIFICATION means replacement of a burner(s).

(5) FOOD OVEN means an oven used to heat or cook food used for human consumption.

(6) HEATER means any combustion equipment that is fired with gaseous and/or liquid fuels and which transfers heat from combusted fuel to materials or air contained in the unit or in an adjoining cabinet, container or structure. Heater does not include any boiler or PROCESS HEATER designed to transfer heat to water or process streams that is subject to any

NOx emission limits of District Rules 1109, 1146, 1146.1 or 1146.2, and does not include any internal combustion engine or turbine.

(7) HEAT INPUT means the higher heating value of the fuel to the unit measured as BTU per hour.

(8) HEAT OUTPUT means the enthalpy of the working fluid output of the unit.

(9) IN-USE UNIT means any UNIT that is demonstrated to the Executive Officer that it was in operation at the current location prior to January 1, 2010.

(10) MAKE-UP AIR HEATER means a UNIT used to heat incoming air in order to maintain the temperature of a spray booth, container, room or other enclosed space where a person is working including spray booths that are also used for drying coatings and auto body spray booths with an adjacent contiguous section for drying automobile coatings. A MAKE-UP AIR HEATER is not a burner used to heat an oven, dryer, heater or other unit where workers are not present during heating.

(11) NOx EMISSIONS means the sum of nitrogen oxide and nitrogen dioxide in the flue gas, collectively expressed as nitrogen dioxide.

(12) PROCESS HEATER means any equipment that is fired with gaseous and/or liquid fuels and which transfers heat from combusted fuel to water or process streams. PROCESS HEATER does not include any furnace, kiln or oven used for melting, heat treating, annealing, drying, curing, baking, cooking, calcining, or vitrifying; or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.

(13) PROTOCOL means a South Coast Air Quality Management District approved test protocol for determining compliance with emission limits for applicable equipment.

(14) RATED HEAT INPUT CAPACITY means the gross HEAT INPUT of the combustion UNIT specified on a permanent rating plate attached by the manufacturer to the device. If the UNIT has been altered or modified such that its gross HEAT INPUT is higher or lower than the rated HEAT INPUT capacity specified on the original manufacturer's permanent rating plate, the new gross HEAT INPUT shall be considered as the rated HEAT INPUT capacity.

(15) REMEDIATION UNIT means a device used to capture or incinerate air toxics, VOCs or other combustible vapors extracted from soil or water.

(16) RESPONSIBLE OFFICIAL means:

(A) For a corporation: a president or vice-president of the corporation in charge of a principal business function or a duly authorized person who performs similar policy-making functions for the corporation; or

(B) For a partnership or sole proprietorship: general partner or proprietor, respectively.

(C) For a government agency: a duly authorized person

(17) TENTER FRAME DRYER is a cloth dryer that holds the edges of the material as it is dried in order to control shrinkage.

(18) THERM means 100,000 BTU.

(19) UNIT means any oven, dryer, dehydrator, heater, kiln, calciner, furnace, crematory, incinerator, heated pot, cooker, roaster, fryer, heated tank and evaporator, distillation unit, afterburner, degassing unit, vapor incinerator, catalytic or thermal oxidizer, soil or water remediation units and other combustion equipment with nitrogen oxide emissions requiring a District permit and not specifically required to comply with a NOx emission limit by other District Regulation XI rules. UNIT does not mean any solid fuel fired combustion equipment, internal combustion engine subject to District Rule 1110.2, turbine, charbroiler, or boiler, water heater, thermal fluid heaters or enclosed process heater subject to District Rules 1109, 1146, 1146.1, or 1146.2 or equipment subject to District Rules 1111, 1112, 1117, 1118, 1121, or 1135.

(20) VAPOR INCINERATOR means a furnace, afterburner, or other device for burning and destroying air toxics, VOCs or other combustible vapors in gas or aerosol form in gas streams.

(c) Requirements

(1) On or after January 1, 2010 any person owning or operating a unit subject to this rule shall not operate the unit in a manner that exceeds the applicable nitrogen oxide emission limit specified in Table 1 at the time a District permit is required for operation of a new, relocated or modified unit or, for in-use units, in accordance with the compliance schedule in Table 2, or at the time of a combustion modification.

Table 1 – NO_x Emission Limit

Equipment Category(ies)	NOx Emission Limit PPM @ 3% O_2, dry or Pound/mmBtu heat input		
	Process Temperature		
Gaseous Fuel-Fired Equipment	≤ 800° F	> 800 ° F and < 1200° F	≥ 1200 ° F
Asphalt Manufacturing Operation	40 ppm	40 ppm	
Afterburner, Degassing Unit, Remediation Unit, Thermal Oxidizer, Catalytic Oxidizer or Vapor Incinerator [1]	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Evaporator, Fryer, Heated Process Tank, or Parts Washer	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	
Metal Heat Treating, Metal Melting Furnace, Metal Pot, or Tar Pot	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Oven, Dehydrator, Dryer, Heater, Kiln, Crematory, Incinerator, Calciner, Cooker, Roaster, Furnace, or Heated Storage Tank	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Make-Up Air Heater or other Air Heater located outside of building with temperature controlled zone inside building	30 ppm or 0.036 lb/mmBtu		
Tenter Frame or Fabric or Carpet Dryer	30 ppm or 0.036 lb/mmBtu		
Other Unit or Process Temperature	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Liquid Fuel-Fired Equipment	≤ 800° F	> 800 ° F and < 1200° F	≥ 1200 ° F
All liquid fuel-fired Units	40 ppm or 0.053 lb/mmBtu	40 ppm or 0.053 lb/mmBtu	60 ppm or 0.080 lb/mmBtu

1. Emission limit applies to burners in units fueled by 100% natural gas that are used to incinerate air toxics, VOCs, or other vapors; or to heat a unit. The emission limit applies solely when burning 100% fuel and not when the burner is incinerating air toxics, VOCs, or other vapors. The unit shall be tested or certified to meet the emission limit while fueled with natural gas.

Table 2 – Compliance Schedule for In-Use Units

Equipment Category(ies)	Submit Permit Application	Unit Shall Be in Compliance
Remediation UNIT manufactured prior to 1998	Seven months prior to combustion modification or change of location.	Upon combustion modification or change of location beginning March 1, 2012
Tar Pot		All new permit applications beginning January 1, 2013
Afterburner, degassing unit, catalytic oxidizer, thermal oxidizer, vapor incinerator, evaporator, food oven, fryer, heated process tank, parts washer or spray booth make-up air heater manufactured prior to 1998	December 1, 2013	July 1, 2014
Other UNIT manufactured prior to 1986	December 1, 2011	July 1, 2012
Other UNIT manufactured prior to 1992	December 1, 2011	July 1, 2012
Other UNIT manufactured prior to 1998	December 1, 2012	July 1, 2013
Any UNIT manufactured after 1997	December 1 of the year prior to the compliance date	July 1 of the year the unit is 15 years old

(2) Unit age shall be based on:

(A) The original date of manufacture as determined by:

(i) Original manufacturer's identification or rating plate permanently fixed to the equipment. If not available, then;

(ii) Invoice from manufacturer for purchase of equipment. If not available, then;

(iii) Information submitted to AQMD with prior permit applications for the specific unit. If not available, then;

(iv) Unit is deemed by AQMD to be 20 years old; or

(B) The date that operations start for a tunnel kiln or crematory rebuilt prior to January 1, 2010 with new burner(s) as determined by:

(i) Production or fuel usage records after burner installation, and

(ii) Invoice for burner(s) installation. If not available, then;

(iii) Invoice for burner(s) purchase, If not available, then;

(iv) Manufacture date of burner(s) as identified by an attached manufacturers identification or rating plate or date stamp.

(3) In accordance with the schedule in the permit, owners or operators of units shall determine compliance with the emission limit specified in Table 1 using a District approved test protocol. The test protocol shall be submitted to the District at least 90 days prior to the scheduled test and approved by the District Source Testing Division.

(4) Notwithstanding the requirements of paragraph (c)(1), units with combustion modifications completed prior to December 5, 2008 and after January 1, 2000 that resulted in replacement of more than 75% of the rated heat input capacity shall comply with the applicable emission limit specified in Table 1 of paragraph (c)(1) ten years from the date the modification was performed.

(5) The date a combustion modification, as specified in paragraphs (c)(1) and (c)(4), is performed; shall be determined according to subparagraph (c)(2)(B), if not available, then subparagraph (c)(2)(C).

(6) Notwithstanding the requirements of paragraph (c)(1), a unit with a District permit to construct or permit to operate, and with emissions of one pound per day or less of nitrogen oxides, may defer compliance with the applicable emission limit specified in Table 1 of paragraph (c)(1) for up to five years from the applicable compliance date in Table 2 of (c)(1). NOx emissions of one pound per day or less shall be demonstrated by one of the following requirements:

(A) A unit has a rated heat input capacity of 400,000 Btu or less.

(B) The unit as of September 9, 2011 has a NOx permit emission limit of one pound per day or less, a permit condition with a process limit that results in one pound per day or less of NOx emissions including but not limited to fuel use, material throughput or operating schedule, or actual operations that results in one pound per day or less of NOx emissions. Daily operating records of unit fuel use or process rate and daily operating hours demonstrating that starting January 1, 2012 until the date of compliance, the unit has a maximum emission rate of 1 pound of NOx per day.

(C) Owners or operators of units with installed non-resettable totalizing time or fuel meters may elect to comply with the requirements of (c)(6) by requesting, no later than January 1, 2012, unit permit conditions of limits on operating hours per calendar month and/or a fuel meter and a limit on the amount of fuel use per

calendar month so that monthly NOx emissions are 30 pounds or less. Monthly emissions with a time meter shall be calculated using the maximum hourly emission rate in pounds multiplied by the hours of operation each calendar month. The maximum hourly emission rate shall be equal to the rated heat input capacity of the unit multiplied by the unit's emissions at the rated heat input capacity in pound per million Btu. Monthly emissions calculated with a fuel meter shall be equal to the unit's emission rate per unit of fuel multiplied by the amount of fuel used that calendar month.

Owners or operators of units complying under this paragraph that fail to continuously demonstrate compliance with the applicable daily or monthly requirements shall comply with the applicable emission limit in Table 1 by the applicable compliance date in Table 2 or within 210 days from the date the unit first fails to continuously comply with the daily or monthly emission limit whichever is later.

(7) On or after January 1, 2010, any person owning or operating a unit subject to this rule shall perform combustion system maintenance in accordance with the manufacturer's schedule and specifications as identified in the manual and other written materials supplied by the manufacturer or distributor. The owner or operator shall maintain on site at the facility where the unit is being operated a copy of the manufacturer's, distributor's, installer's or maintenance company's written maintenance schedule and instructions and retain a record of the maintenance activity for a period of not less than three years. The owner or operator shall maintain on site at the facility where the unit is being operated a copy of the District certification or District approved source test reports, conducted by an independent third party, demonstrating the specific unit complies with the emission limit. The source test report(s) must identify that the source test was conducted pursuant to a District approved protocol. The model and serial numbers of the specified unit shall clearly be indicated on the source test report(s). The owner or operator shall maintain on the unit in an accessible location a permanent rating plate. The maintenance instructions, maintenance records and the source test report(s) or District certification shall be made available to the Executive Officer upon request.

(8) Any person owning or operating a unit subject to this rule complying with Table 1 using pounds per million BTU, shall install and maintain in

service non-resettable, totalizing, fuel meters for each unit's fuel(s) prior to the compliance determination specified in paragraph (c)(3). Owners or operators of a unit with a combustion system that operates at only one firing rate that comply with an emission limit using pounds per million BTU shall install a non-resettable, totalizing, time or fuel meter for each fuel.

(9) Meters that require electric power to operate shall be provided a permanent supply of electric power that cannot be unplugged, switched off, or reset except by the main power supply circuit for the building and associated equipment or the unit's safety shut-off switch. Any person operating a unit subject to this rule shall not shut off electric power to a unit meter unless the unit is not operating and is shut down for maintenance or safety.

(10) On or before the compliance date, the owner or operator of a unit shall demonstrate compliance with the applicable emission limit in Table 1 pursuant to the provisions of subdivisions (d) or (e).

(11) Compliance by Certification

For units that do not allow adjustment of the fuel and combustion air for the combustion system by the owner or operator, and upon approval by the Executive Officer, an owner or operator may demonstrate compliance with the emission limit and demonstration requirement of this subdivision by certification granted to the manufacturer for any model of equipment sold for use in the District. Any unit certified pursuant to subdivision (e) shall be deemed in compliance with the emission limit in Table 1 and demonstration requirement of this subdivision, unless a District source test shows non-compliance.

(12) Identification of Units

(A) New Manufactured Units

The manufacturer shall display the model number and the rated heat input capacity of the unit complying with subdivision (c) on a permanent rating plate. The manufacturer shall also display the District certification status on the unit when applicable.

(B) Modified Units

The owner or operator of a unit with a modified combustion system (new or modified burners) shall display the new rated heat input capacity on a new permanent supplemental rating plate installed in an accessible location on the unit or burner. The gross

heat input shall be based on the maximum fuel input corrected for fuel heat content, temperature and pressure. Gross heat input shall be demonstrated by a calculation based on fuel consumption recorded by an in-line fuel meter by the manufacturer or installer.

(13) The owner or operator shall maintain on site a copy of all documents identifying the unit's rated heat input capacity for as long as the unit is retained on-site. The rated heat input capacity shall be identified by a manufacturer's or distributor's manual or invoice and a permanent rating plate attached to the unit. If a unit is modified, the rated heat input capacity shall be calculated pursuant to subparagraph (c)(12)(B). The documentation of rated heat input capacity for modified units shall include the name of the company and person modifying the unit, a description of all modifications, the dates the unit was modified and calculation of rated heat input capacity. The documentation for modified units shall be signed by the highest ranking person modifying the unit.

(14) Alternate Compliance Plans

(A) Owners or operators of facilities with five or more in-use units with permit emissions greater than one pound per day NOx that will require burner modifications may submit an alternate compliance plan by January 1, 2012 to phase-in compliance of all units starting April 1, 2012 and ending before January 1, 2015. The alternate compliance plan shall identify the units included in the plan and a schedule identifying when each unit will comply with the emission limit and the compliance determination for each unit will be completed. At least one unit shall be modified to comply with the applicable emission limit of this rule by April 1, 2012. Each year thereafter, a minimum of 20 percent of additional units and no less than one unit shall be modified to comply with the applicable emission limit. All units must comply with the applicable emission limit of this rule before January 1, 2015.

(B) Owners or operators of facilities with pollution control unit(s) in series with process unit(s) (e.g., an oven and afterburner) that have NOx emissions greater than one pound per day and different compliance dates may elect to synchronize compliance of all units in the series on one date no later than December 1, 2013.

(d) Compliance Determination

(1) All compliance determinations pursuant to paragraph (c)(6) shall be calculated:

(A) Using a District approved test protocol averaged over a period of at least 15 and no more than 60 consecutive minutes;

(B) After unit start up; and

(C) In the unit's as-found operating condition.

Each compliance determination shall be made in the maximum heat input range at which the unit normally operates. An additional compliance determination shall be made using a heat input of less than 35% of the rated heat input capacity for any of the following types of units with process temperature less than 1200 °F that operate with variable heat input that falls below 50% rated heat input capacity during normal operation: Make-Up Air Heater, other Air Heater located outside of process building, Oven, Dehydrator, Dryer, Tenter-Frame Dryer, Fabric Dryer, Carpet Dryer, Heater, Cooker, Roaster, non-metallurgical Furnace, or Heated Storage Tank.

For compliance determinations after the initial approved test, the operator is not required to resubmit a protocol for approval if: there is a previously approved protocol and the unit has not been altered in a manner that requires a permit alteration; and rule or permit emission limits have not changed since the previous test.

(2) All parts per million emission limits specified in subdivision (c) are referenced at 3 percent volume stack gas oxygen on a dry basis.

(3) Compliance with the NO_X emission limits of subdivision (c) and determination of stack-gas oxygen and carbon dioxide concentrations for this rule shall be determined according to the following procedures:

(A) District Source Test Method 100.1 – Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling (March 1989); or

(B) ASTM Method D6522-00 – Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating

Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers; or

(C) United States Environmental Protection Agency Conditional Test Method CTM-030 – Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers; or

(D) District Source Test Method 7.1 – Determination of Nitrogen Oxide Emissions from Stationary Sources (March 1989); and

(E) District Source Test Method 10.1 – Carbon Monoxide and Carbon Dioxide by Gas Chromatograph/Non-Dispersive Infrared Detector (GC/NDIR) – Oxygen by Gas Chromatograph-Thermal Conductivity (GC/TCD) (March 1989); or

(F) Any alternative test method determined approved before the test in writing by the Executive Officers of the District, the California Air Resources Board and the United States Environmental Protection Agency.

(4) For any operator who chooses to comply using pound per million Btu, NO_X emissions in pounds per million Btu of heat input shall be calculated using procedures in 40 CFR Part 60, Appendix A, Method 19, Sections 2 and 3.

(5) Records of source tests shall be maintained for ten years and made available to District personnel upon request. Emissions determined to exceed any limits established by this rule through the use of any of the test methods specified in subparagraphs (d)(3)(A) through (d)(3)(F) shall constitute a violation of this rule.

(6) All compliance determinations shall be made using an independent contractor to conduct testing, which is approved by the Executive Officer under the Laboratory Approval Program for the applicable test methods.

(7) For equipment with two or more units in series or multiple units with a common exhaust or units with one dual purpose burner that both heats the process and incinerates VOC, toxics or PM, the owner or operator may demonstrate compliance with the emission limits in Table 1 by one of the following:

(A) Test each unit separately and demonstrate each unit's compliance with the applicable limit, or

(B) Test only after the last unit in the series and at the end of a common exhaust for multiple units or dual purpose burner, when all units are operating, and demonstrate that the series of units either meet:

(i) The lowest emission limit in Table 1 applicable to any of the units in series, or

(ii) A heat input weighted average of all the applicable emission limits in Table 1 using the following calculation.

$$\textbf{Weighted Limit} = \frac{\Sigma\,[\,(EL_X)*(Q_X)\,]}{\Sigma\,[\,Q_X\,]}$$

Where:

EL_X = emission limit for unit X

Q_X = total heat input for unit X during test

(e) Certification

(1) Unit Certification

For units that do not allow adjustment of the fuel and combustion air for the combustion system by the owner or operator, any manufacturer or distributor that distributes for sale or sells units or burner systems for use in the District may elect to apply to the Executive Officer to certify such units or burner systems as compliant with subdivision (c).

(2) Manufacturer Confirmation of Emissions

Any manufacturer's application to the Executive Officer to certify a model of equipment as compliant with the emission limit and demonstration requirement of subdivision (c) shall obtain confirmation from an independent contractor that is approved by the Executive Officer under the Laboratory Approval Program for the necessary test methods prior to applying for certification that each unit model complies with the applicable requirements of subdivision (c). This confirmation shall be based upon District approved emission tests of standard model units and a

District approved protocol shall be adhered to during the confirmation testing of all units subject to this rule. Emission testing shall comply with the requirements of paragraphs (d)(1) through (d)(5) except emission determinations shall be made at 100% rated heat input capacity and an additional emission determination shall be made using a heat input of less than 35% of the rated heat input capacity for any Afterburner, Degassing Unit, Remediation Unit, Thermal Oxidizer, Catalytic Oxidizer, Vapor Incinerator, Make-Up Air Heater, other Air Heater located outside of process building, Oven, Dehydrator, Dryer, Tenter-Frame Dryer, Fabric Dryer, Carpet Dryer, Heater, Kiln, Crematory, Incinerator, Calciner, Cooker, Roaster, non-metallurgical Furnace, or Heated Storage Tank.

(3) When applying for unit(s) certification, the manufacturer shall submit to the Executive Officer the following:

(A) A statement that the model is in compliance with subdivision (c). The statement shall be signed and dated by the manufacturer's responsible official and shall attest to the accuracy of all statements;

(B) General Information

(i) Name and address of manufacturer,

(ii) Brand name, if applicable,

(iii) Model number, as it appears on the unit rating plate; and

(iv) Rated Heat Input Capacity, gross output of burner(s) and number of burners;

(C) A description of each model being certified; and

(D) A source test report verifying compliance with the applicable emission limit in subdivision (c) for each model to be certified. The source test report shall be prepared by the confirming independent contractor and shall contain all of the elements identified in the District approved Protocol for each unit tested. The source test shall have been conducted no more than ninety (90) days prior to the date of submittal to the Executive Officer.

(4) When applying for unit certification, the manufacturer shall submit the information identified in paragraph (e)(3) no more than ninety (90) days after the date of the source test identified in subparagraph (e)(3)(D) and at least 120 days prior to the date of the proposed sale and installation of any District certified unit.

(5) The Executive Officer shall certify a unit model which complies with the provisions of subdivision (c) and of paragraphs (e)(2), (e)(3), and (e)(4).

(6) Certification status shall be valid for five years from the date of approval by the Executive Officer. After the fifth year, recertification shall be required by the Executive Officer according to the requirements of paragraphs (e)(2), (e)(3), and (e)(4).

(f) Enforcement

(1) The Executive Officer may inspect certification records and unit installation, operation, maintenance, repair, combustion modification and test records of owners, operators, manufacturers, distributors, retailers, and installers of units located in the District, and conduct such tests as are deemed necessary to ensure compliance with this rule. Tests shall include emission determinations, as specified in paragraph (d)(1) to (d)(4), of a random sample of any category of units subject to this rule.

(2) An emission determination specified under paragraph (f)(1) that finds emissions in excess of those allowed by this rule or permit conditions shall constitute a violation of this rule.

(g) Exemptions

(1) The provisions of this rule shall not apply to units:

(A) subject to the nitrogen oxide limits of District Rules 1109, 1110.2, 1111, 1112, 1117, 1121, 1134, 1135, 1146, 1146.1, or 1146.2; or

(B) located at RECLAIM facilities.

(2) The provisions of this rule shall not apply to charbroilers.

(3) The provisions of this rule shall not apply to:

(A) Flares subject to District Rule 1118;

(B) Flares, afterburners, degassing units, thermal or catalytic oxidizers or vapor incinerators in which a fuel, including but not limited to natural gas, propane, butane or liquefied petroleum gas, is used only to maintain a pilot for vapor ignition or is used for five minutes or less to bring a unit up to operating temperature;

(C) Municipal solid waste incinerators with a District permit operating before December 5, 2008;

(D) An afterburner or vapor incinerator with a District permit operating before December 5, 2008 that has an integrated thermal fluid heat

exchanger that captures heat from the afterburner or vapor incinerator and an oven or furnace exhaust in order to reduce fuel consumption by an oven or the afterburner or vapor incinerator; or

(E) A flare, afterburner, degassing unit, remediation unit, thermal oxidizer, catalytic oxidizer or vapor incinerator process in which a fuel, including but not limited to natural gas, propane, butane or liquefied petroleum gas, is mixed with air toxics, VOCs, landfill gas, digester gas or other combustible vapors prior to incineration in the unit, in order to maintain vapor concentration above the upper explosion limit or above a manufacturer specified limit in order to maintain combustion or temperature in the unit. This exemption does not apply to a burner with a separate fuel line used to heat up or maintain temperature of a unit or incinerate air toxics, VOCs or other combustible vapors in a gas stream moving past the burner flame.

(4) New afterburners, degassing units, thermal oxidizers, catalytic oxidizers, vapor incinerators, and spray booth make-up air heaters installed for use at a specific facility after December 5, 2008 and before March 1, 2012, are exempt from the emission limit in Table 1 until July 1 of the year the unit is 15 years old.

(5) New or relocated remediation units installed after December 5, 2008 and before March 1, 2012, are exempt from the emission limit in Table 1 until a combustion modification or change of location on or after January 1, 2012.

(6) New food ovens, fryers, heated process tanks, parts washers, and evaporators installed after December 5, 2008 and operating before January 1, 2014, are exempt from the emission limit in Table 1 until July 1 of the year the unit is 15 years old.

(7) Remediation units are exempt from the applicable emission limit in Table 1 while fueled with propane, butane or liquefied petroleum gas in a location where natural gas is not available. Remediation units must comply with the emission limit when natural gas is available and while fueled with natural gas.

(h) Technology Assessment

(1) On or before December 7, 2015, the Executive Officer shall conduct a technology assessment and shall report to the Governing Board on the availability of burner systems and units for processes with NOx emissions of one pound per day or less.

(i) Mitigation Fee Compliance Option

(1) An owner or operator of a unit with emissions of more than 1 pound per day may elect to delay the applicable compliance date in Table 2 of paragraph (c)(1) or (c)(4) three years by submitting an alternate compliance plan and paying an emissions mitigation fee to the District in lieu of meeting the applicable NOx emission limit in Table 1.

(2) Compliance Demonstration

An owner or operator of a unit electing to comply with the mitigation fee compliance option shall:

(A) Submit an alternate compliance plan and pay the mitigation fee to the Executive Officer at least 150 days prior to the applicable compliance date in Table 2 of paragraph (c)(1) or (c)(4), and

(B) Maintain on-site a copy of verification of mitigation fee payment and AQMD approval of the alternate compliance plan that shall be made available upon request to AQMD staff.

(3) Plan Submittal

The alternate compliance plan submitted pursuant to paragraphs (i)(1) and (i)(2) shall include:

(A) A completed AQMD Form 400A with company name, AQMD Facility ID, identification that application is for a compliance plan (section 7 of form), and identification that request is for the Rule 1147 mitigation fee compliance option (section 9 of form);

(B) Attached documentation of unit fuel use for previous 5 years, description of weekly operating schedule, unit permit ID, unit heat rating (Btu/hour), and fee calculation;

(C) Filing fee payment; and

(D) Mitigation fee payment as calculated by Equation 1.

Equation 1:

$MF = R \times (3 \text{ years }) \times (L_1 - L_0) \times (AF) \times (k)$

Where,

MF = Mitigation fee, $

R = Fee Rate = $12.50 per pound ($6.25 per pound for a small business with 10 or fewer employees and gross annual receipts of $500,000 or less)

L_1 = Default NOx emission factor, 0.136 lbs of NOx/mmBtu for natural gas and LPG, and 0.160 lb/mmBtu for fuel oils

L_0 = Applicable NOx emission limit specified in Table 1 in lbs/mmBtu

AF = Annual average fuel usage of unit for previous 5 years, mmscf/yr for natural gas or gallons for liquid fuel

k = unit conversion for cubic feet of natural gas to Btu = 1,050 Btu/scf, 95,500 Btu/gallon for LPG, and 138,700 Btu/gallon for fuel oil

2/3/83

11-5-82

~~September 23, 1982~~

Adopted

~~Proposed~~ Rule 1148 - Thermally Enhanced Oil Recovery Wells

(a) Definitions

(1) OPERATE means to perform any activity with or on any crude oil production well including, but not limited to pumping, venting, maintaining, or repairing.

(2) REACTIVE ORGANIC GASES (ROG) means any gaseous chemical compound which contains the element carbon; excluding carbon monoxide, carbon dioxide, carbonic acid, carbonates and metallic carbides; and excluding methane, 1,1,1-trichloroethane, methylene chloride, trifluoromethane and chlorinated-fluorinated hydrocarbons.

(3) PRODUCTION ZONE means a formation or group of formations of oil bearing material beneath the surface of the ground through which steam can travel from a steam injection well to an oil production well.

(4) STEAM DRIVE WELL means any crude oil production well that is completed in the same production zone as is a steam injection well, that is either operated by the person injecting the steam or responding to steam injection under a contractual agreement with the operator of the steam injection well, and that is within a:

(A) 250 foot radius of the steam injection well, if the steam injection well is within a 2 1/2 acre or smaller production well patern; or

(B) 350 foot radius of the steam injection well, if the steam injection well is within a production well pattern of 5 acres or small but larger than 2 1/2 acres; or

(C) 500 foot radius of the steam injection well, if the steam injection is within a production well pattern larger than 5 acres; or

(D) 1,000 foot radius of the steam injection well, if the production well is not in one of the above specified patterns.

(5) STEAM INJECTION WELL is a well into which steam is injected to increase the production of oil from adjacent wells.

(6) CYCLIC STEAM WELL is any producing well in which steam is injected and production resumes after a soaking period.

(7) BEING SERVICED means being maintained, inspected, repaired and/or adjusted.

(b) Requirements

(1) No person shall operate a steam drive well unless the ROG emissions from the well are 4.5 pounds per day or less; or

(2) If steam drive wells are connected to a vapor control system, ROG emissions from the control system shall average no more than 4.5 pounds per day per connected well.

(c) Compliance

(1) The operator of any new steam drive well, or any non-steam drive well converted to a steam drive well, who begins drive operations on or after the date of adoption of this rule shall comply with the provisions of this rule not later than 12 months after steam injection commences.

(2) The operator of any oil production well operated as a steam drive well prior to the date of adoption of this rule:

(A) Shall be in full compliance with the provisions of this rule by 19 months after adoption of this rule; and

(B) For any operator who chooses to control the emissions from the well by installing a vapor control system shall comply with the following schedule of increments of progress:

(i) Upon adoption of this rule, submit to the Executive Officer a final control plan which describes, as a minimum the steps, including construction schedules, that will be taken to achieve compliance with the provisions of this rule and an application for authority to construct the proposed vapor control system.

(ii) Three months after adoption of this rule, provided documentation to the Executive Officer that contracts or purchase orders for the control system and component parts have been issued.

(iii) Nine months after adoption of this rule, initiate on-site construction or installation of the vapor control system.

(iv) Seventeen months after adoption of this rule, complete on-site construction of the vapor control system.

(v) Nineteen months after adoption of this rule, demonstrate full compliance with the provisions of this rule.

(3) Compliance testing shall be performed annually by the operator of vapor control systems used to control emissions from steam drive wells. The testing shall be performed during June, July, August, or September of each year. The operator shall notify the Executive Officer 30 days before testing begins and shall have a record of tests available, upon request by the Executive Officer, not later than 30 days after completion of the tests.

(d) Exemptions

(1) The Executive Officer may allow an exemption from the requirements of this rule for any steam drive well during the times that the well-head is opened to the atmosphere when the well is being serviced.

(2) Any steam drive well defined by paragraph (a)(4)(D) is exempt from the provisions of this rule if the operator shows to the satisfaction of the Executive Officer that the temperature at the wellhead of produced oil and water has been increased by less than thirty Fahrenheit degrees (16.7 Celsius degrees) above the temperature at the wellhead of oil and water that was produced before steam injection was commenced.

(3) Any steam drive well defined by paragraph (a)(4)(D) into which steam has been injected is exempt from the provisions of this rule for six months from the most recent date of such steam injection, provided that the amount of steam expressed as water injected during the most recent injection is more than 2,000 barrels and that:

(A) Steam is injected more frequently than once every 45 days; or

(B) For such wells that are steamed less frequently than once every 45 days, there is no visible vapor plume when the casing vent is open and the ambient air temperature is sixty degrees Fahrenheit (33.3 Celsius degrees) or greater, 45 days after steam injection has ceased; and

(C) Records are made available, upon request, to the Executive Officer of:

(i) date of injection.

(ii) the amount of steam injected expressed as volume of water.

(4) Any vapor control system and connected steam drive wells are exempt from subsection (c)(3) if the requirements of (b)(2) have initially been met and the ROG leaving the system is vented into a fuel gas or other approved gas gathering system.

1/10/10

(Adopted March 5, 2004)

RULE 1148.1. OIL AND GAS PRODUCTION WELLS

(a) Purpose

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs) from the wellheads, the well cellars and the handling of produced gas at oil and gas production facilities.

(b) Applicability

This rule applies to onshore oil producing wells, well cellars and produced gas handling activities at onshore facilities where petroleum and processed gas are produced, gathered, separated, processed and stored. Natural gas distribution, transmission and associated storage operations are not subject to the requirements of this rule.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) ABANDONED WELL is a well that has been certified by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources as permanently closed and non-operational.

(2) FACILITY is any equipment or group of equipment or other VOC-emitting activities, which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control). Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility.

(3) OIL PRODUCING WELL is a well which produces crude oil.

(4) PRODUCED GAS is organic compounds that are both gaseous at standard temperature and pressure and are associated with the production, gathering, separation or processing of crude oil.

(5) SENSITIVE RECEPTOR is a school (kindergarten through grade 12), licensed daycare center, hospital, or convalescent home.

(6) STUFFING BOX is a packing gland, chamber or "box" used to hold packing material compressed around a moving pump rod to reduce the escape of gas or liquid.

(7) TOTAL ORGANIC COMPOUNDS (TOC) is the concentration of gaseous organic compounds determined according to the test method in paragraph (g)(1).

(8) VOLATILE ORGANIC COMPOUND is as defined in Rule 102.

(9) WELL CELLAR is a lined or unlined containment surrounding one or more oil wells, allowing access to the wellhead components for servicing and/or installation of blowout prevention equipment.

(10) WELLHEAD is an assembly of valves mounted to the casing head of an oil well through which a well is produced. The wellhead is connected to an oil production line and in some cases to a gas casing line.

(d) Requirements

(1) The operator shall not allow a concentration of a TOC greater than 500 ppm in the well cellar.

(2) Effective July 1, 2004, the operator of an oil and gas production facility shall not allow any valve to be opened at the wellhead unless a portable container is used to catch and contain organic liquid that would otherwise drop into the well cellar or onto the ground. Such container shall be kept closed to the atmosphere when it contains organic liquid and is not in use.

(3) The operator of an oil and gas production facility shall not allow organic liquid to be stored in a well cellar. During periods of equipment maintenance, well plugging, abandonment operations, or well workover, the operator shall pump out or remove organic liquid that accumulates in the well cellar no later than two (2) days after the maintenance, drilling, well plugging, abandonment or workover activity at the well is completed. The operator may store organic liquid in a portable enclosed storage vessel provided the vessel is equipped with air pollution control equipment to reduce the TOC emissions to less than 250 ppm outlet concentration according to the test method in paragraph (g)(1), except where safety requirements established in a written company safety manual or policy deem it impractical during maintenance, plugging, abandonment, well workover or drilling operations. The operator shall conduct a TOC measurement according to the test method in paragraph (g)(1) at the time of filling, and weekly thereafter to ensure that the system achieves the emission standard of 250 ppm.

(4) The operator of an oil and gas production facility shall pump out the organic liquid accumulated in the well cellar immediately before a well is steamed or after a wellhead is steam cleaned.

(5) The operator of an oil and gas production facility shall pump out or remove organic liquid accumulated in the well cellar within five (5) calendar days, or by close of the following business day if the well cellar is located within 100 meters of a sensitive receptor when the TOC concentration in the well cellar is greater than 250 ppm as determined by the test method in paragraph (g)(1). In lieu of the method in paragraph (g)(1), an operator may measure the depth of accumulated organic liquid and pump-out the liquid when the depth exceeds two (2) inches. The organic liquid depth may be measured using a "copper coat" gauge or any other measuring instrument determined to be acceptable by the Executive Officer.

(6) Effective January 1, 2006, the operator of an oil and gas production facility shall not allow natural gas or produced gas to be vented into the atmosphere. The emissions of produced gas shall be collected and controlled using one of the following:

(A) A system handling gas for fuel, sale, or underground injection; or

(B) A device, approved by the Executive Officer, with a VOC vapor removal efficiency demonstrated to be at least 95% by weight per test method of paragraph (g)(2) or by demonstrating an outlet VOC concentration of 50 ppm according to the test method in paragraph (g)(1). If the control device uses supplemental natural gas to control VOC, it shall be equipped with a device that automatically shuts off the flow of natural gas in the event of a flame-out or pilot failure.

(7) Except as Rule 1173 applies to components of produced gas handling equipment located within 100 meters of a sensitive receptor, the operator shall repair any gaseous leaks of 250 ppm TOC or greater by the close of the business day following the leak discovery or take actions to prevent the release of TOC emissions to the atmosphere until repairs have been completed.

(8) Effective March 5, 2004, unless approved in writing by the Executive Officer, CARB, and USEPA as having no significant emissions impacts, no person shall:

(A) Remove or otherwise render ineffective a well cellar at an oil and gas production well except for purposes of abandonment to be certified by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources; or

(B) Drill a new oil and gas production well unless a well cellar is installed for containment of fluids.

(e) Operator Inspection Requirements

(1) Effective July 1, 2004, the operator shall visually inspect:

(A) Any stuffing box not located in or above a well cellar daily;

(B) Any stuffing box located in or above a well cellar weekly; or

(C) Any stuffing box or produced gas handling and control equipment located 100 meters or less from a sensitive receptor daily. Receptor distance shall be determined as the distance measured from the stuffing box or produced gas handling and control equipment to the property line of the nearest sensitive receptor.

(2) Notwithstanding the requirements of subparagraphs (e)(1)(A) and (e)(1)(B), the operator shall perform monthly visual inspections of any stuffing box fitted with a stuffing box adapter, a closed crude oil collection container, and a well shut off switch that will shut down the well when the container is full.

(3) Effective, July 1, 2004, except for well cellars listed under subdivision (h), the operator shall quarterly, perform an inspection of all well cellars according to the test method in paragraph (g)(1).

(4) Within two (2) days of discovery of organic liquid leakage observed from the inspections pursuant to paragraph (e)(1)(A) or (e)(1)(B) and within 8 hours pursuant to paragraph (e)(1)(C), the operator shall conduct an inspection of the stuffing box and well cellar according to the test method in paragraph (g)(1) or measure the organic liquid depth using a "copper coat" gauge or any other measuring instrument determined to be acceptable by the Executive Officer.

(f) Recordkeeping Requirements

(1) The operator shall maintain all records that document the purchase and installation of the stuffing box adapter(s) to demonstrate compliance with

paragraph (e)(2) at the facility or facility headquarters and such records shall be made available to the Executive Officer upon request.

(2) The operator shall maintain all records of inspection, repair and pump-outs required by this rule in a form approved by the Executive Officer at the facility or facility headquarters for a period of three years or a period of five years for a Title V facility and such records shall be made available to the Executive Officer upon request.

(3) The operator shall maintain production records and other applicable information and documents sufficient to demonstrate eligibility for any exemption claimed pursuant to subdivision (h) and make them available to the Executive Officer upon request.

(g) Test Methods

(1) Measurement of TOC or VOC concentrations shall be conducted according to the United States Environmental Protection Agency (USEPA) Reference Method 21 using an appropriate analyzer calibrated with methane. The analyzer shall be calibrated before inspection each day prior to use. For the purpose of demonstrating compliance with the TOC concentration requirements in paragraphs (d)(1) and (d)(5), measurement of the TOC concentrations shall be conducted at a distance of no more than three (3) inches above the organic liquid surface in the well cellar.

(2) Determination of Efficiency of Emission Control Systems

The control equipment efficiency of an emission control system, on a mass emissions basis, and the VOC concentrations in the exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, or District Method 25.1 - Determination of Total Gaseous Non-Methane Organic Emissions as Carbon or District Method 25.3 Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources, as applicable. US EPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(3) Laboratory Approval

Sampling, analysis, and reporting shall be conducted by a laboratory that has been approved under the District Laboratory Approval Program (LAP) for the cited District reference test methods, where LAP approval is available. For District reference test methods for which no LAP program

is available, the LAP approval requirement shall become effective one year after the date that the LAP program becomes available for that District reference test method.

(4) Equivalent Test Methods

A person may use other methods to determine compliance with this rule provided it is demonstrated to be equivalent and approved in writing by the Executive Officers of the District, the California Air Resources Board, and the Regional Administrator of the USEPA, or their designees.

(h) Exemptions

(1) This rule shall not apply to well cellars associated exclusively with:

(A) Oil and gas production wells that have been idle and out of operation for more than six months with no liquid leaks or accumulation of crude oil in the well cellar as indicated by production records. All provisions of this rule shall apply upon commencement of operation of the idle well.

(B) Wells that have been certified as an abandoned well by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources.

(C) Water, gas or steam injection wells.

(2) The provisions of paragraphs (d)(5), (d)(6) and (d)(7) shall not apply to any well or produced gas handling system undergoing maintenance and repair, well drilling and well abandonment operations, provided the maintenance and repair, drilling or abandonment operation is conducted in a manner that minimizes emissions to the atmosphere, and is consistent with the written company safety manual or policy.

(3) The provisions of paragraph (d)(1), (d)(2) and (d)(5) shall not apply to any well cellar used in emergencies at oil production facilities, if clean-up procedures are implemented within 24 hours after each emergency occurrence and completed within ten (10) calendar days.

(4) The provisions of paragraph (d)(6) of this rule shall not apply to oil and gas production wells in operation as of March 5, 2004, that produce no more than 1 barrel per day of oil or 200 standard cubic feet per day of produced gas per facility, provided that such production wells are not located within 100 meters of a sensitive receptor, and provided the production can be demonstrated from annual production records.

Demonstration of produced gas production shall be based on metered measurement of the gas.

(Adopted December 4, 1987)(Amended April 1, 1988)(Amended July 14, 1995)
(Amended May 2, 2008)

RULE 1149. STORAGE TANK AND PIPELINE CLEANING AND DEGASSING

(a) Purpose and Applicability

The purpose of this rule is to reduce Volatile Organic Compounds (VOCs) and toxics emissions from roof landings, cleaning, maintenance, testing, repair and removal of storage tanks and pipelines. This rule applies to the cleaning and degassing of a pipeline opened to atmosphere outside the boundaries of a facility, stationary tank, reservoir, or other container, storing or last used to store VOCs.

(b) Definitions

(1) CLEANING is the process of washing or rinsing a stationary tank, reservoir, pipelines, or other container or removing vapor, sludge, or rinsing liquid from a stationary tank, reservoir, or other container.

(2) DEGASSING is the process of removing organic gases from a stationary tank, reservoir, pipelines, or other container.

(3) DRAIN-DRY BREAKOUT TANK is an above ground storage tank designed such that the floating roof rests on support legs no higher than one foot along the tank shell with a bottom sloped to a sump or sumps such that no product or sludge remains on the tank bottom and walls after emptying except clingage and is primarily used to receive product from pipelines and to distribute product back into pipelines.

(4) EXEMPT COMPOUNDS are defined in Rule 102 -- Definition of Terms.

(5) FACILITY means any source or group of sources or other air contaminant-emitting activities that are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right of way, and are owned by the same person (or by persons under common control).

(6) LIQUID BALANCING is a process in which an organic liquid having a Reid vapor pressure subject to this rule is replaced in a floating roof storage tank by an organic liquid with a Reid vapor pressure that is not subject to this rule without landing the floating roof on its internal supports.

(7) LIQUID LEAK is the dripping of liquid VOC at the rate of more than three drops per minute.

(8) NATURAL GAS is a mixture of hydrocarbons, with at least 80 percent methane by volume and less than 10 percent by weight VOC, determined according to the test method specified in paragraph (d)(3).

(9) REID VAPOR PRESSURE (RVP) is the vapor pressure of a product determined in a volume of air four times greater than the liquid volume at 100° F.

(10) VAPOR LEAK is the detection of gaseous volatile organic compounds in excess of 5,000 ppmv, measured as methane.

(11) VAPOR TIGHT CONDITION is a condition that exists when the reading on a portable hydrocarbon analyzer is less than 500 parts per million (ppm), measured as methane, above background, measured using EPA Reference Method 21.

(12) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(c) Requirements

(1) A stationary tank, reservoir, or container of equal or greater capacity and containing or last containing any organic liquid with a vapor pressure equal or greater than in Table 1 shall not be opened to the atmosphere unless the emissions are controlled by one of the following:

(A) Liquid balancing; or

(B) Other control techniques such that the gaseous VOC concentration within the tank, reservoir or other container is reduced to less than 5,000 ppmv, measured as methane, for at least one hour after degassing operations have ceased.

Table 1
Capacity and Vapor Pressure Rule Applicability

Capacity gallons (liters)	Vapor Pressure (RVP)
500 (1,893)	3.9 psia
26,420 (100,000)	2.6 psia
100,000 (378,500)	0.5 psia

(2) The roof of a floating storage tank containing or last containing a VOC liquid with a Reid vapor pressure greater than 25 mm Hg (0.5 psi) may not rest upon its support legs after it has been emptied unless emissions are controlled by one of the following:

(A) The vapor space created is vented to a control device approved by the Executive Officer; or

(B) The gaseous VOC concentration within the tank, reservoir or other container is reduced to less than 5,000 ppmv, measured as methane, for at least one hour after degassing operations have ceased.

(3) In lieu of meeting the requirements of paragraph (c)(2), drain-dry breakout tanks shall be maintained in a vapor tight condition outside the tank shell while the roof is resting upon its support legs and shall be monitored monthly. Records shall be maintained pursuant to paragraph (c)(11). Owners or operators of facilities requiring tank modifications to meet the drain-dry breakout tank definition and utilize this compliance option shall make the modifications according to the following schedule:

(A) At least 1/4 of the tanks subject to this provision by August 1, 2009;

(B) At least 1/2 of the tanks subject to this provision by August 1, 2010;

(C) At least 3/4 of the tanks subject to this provision by August 1, 2011; and

(D) All tanks subject to this provision by August 1, 2012.

By August 1, 2008, an owner or operator shall submit to the District a compliance plan identifying the applicable tanks and the schedule for modification completion. Applicable tanks shall be maintained in a vapor tight condition outside the tank shell while resting upon its support legs and monitored monthly.

(4) Effective June 1, 2008, pipelines with a diameter of 6 inches or greater containing or last containing a VOC liquid with a Reid vapor pressure greater than 134 mm Hg (2.6 psi) shall not be opened to the atmosphere unless emissions are controlled by one of the following:

(A) The vapor space created is vented to a control device approved by the Executive Officer; or

(B) The gaseous VOC concentration within the pipeline is reduced to less than 5,000 ppmv, measured as methane, for at least one hour after degassing operations have ceased; or

(C) The gaseous VOC concentration outside the pipeline, as measured pursuant to paragraph (d)(1) while the pipeline is open, is less than 5,000 ppmv, measured as methane.

The process of removing liquid from pipelines shall be continuous and the liquid shall be immediately transferred into a container that meets the requirements of paragraph (c)(9). During the liquid removal process, the gaseous VOC concentration standard stated in paragraph (c)(4) will not apply.

(5) Equipment used in the cleaning or degassing process shall be free of liquid and vapor leaks. This includes, but is not limited to: the degassing equipment, vacuum truck, pumps, hoses, and connections.

(6) Effective June 1, 2008, vacuum trucks used to remove liquid, sludge or vapors from tanks or pipelines subject to this rule shall not exhaust vapors to the atmosphere greater than 500 ppmv, measured as methane. Until January 1, 2009, this provision will not apply after the tank or pipeline has met the requirements of paragraphs (c)(1), (c)(3) or (c)(4).

(7) The District shall be notified of the intent to degas any tank or pipeline subject to the rule. Initial notifications shall be submitted in a written format approved by the Executive Officer at least two (2) hours and no more than two (2) days prior to the start of the degassing operation. The initial notification shall include:

(A) Start date and time;

(B) Tank or pipeline owner, address, tank location and applicable tank permit numbers;

(C) Degassing operator's name, contact person, telephone number and applicable control equipment permit numbers; and

(D) Tank or pipeline capacity, volume of space degassed and materials stored.

A follow-up notification, using a form approved by the Executive Officer which is fully completed, including associated notification fees, as set forth in Rule 301 – Permitting and Associated Fees, must be submitted to the District postmarked, received or delivered no later than three business days following the degassing activity.

(8) The VOC concentration in the exhaust stream of any control device shall be less than 500 ppmv, measured as methane. When carbon adsorption is used for degassing:

(A) An organic vapor monitor/analyzer approved by the Executive Officer or designee shall be installed and operated at any exit of the carbon adsorption device to determine the concentration of hydrocarbon discharged to the atmosphere.

(B) An owner or operator shall not regenerate any spent carbon from a carbon adsorber unless the regeneration is conducted using equipment operating under a valid permit to operate issued by the Executive Officer or designee.

(9) Any liquids or sludge removed from the tank or pipeline prior to the tank meeting the requirements of paragraphs (c)(1), (c)(3) or (c)(4), shall be handled or disposed of in closed containers that are free of liquid and vapor leaks or in a manner previously approved by the Executive Officer.

(10) A person engaged in the off-site cleaning or degassing of stationary storage tanks shall complete the cleaning and degassing operations in accordance with the requirements of subdivision (c) within 14 days of receiving the tanks.

(11) Records shall be maintained by the owner and operator for two (2) years, or five (5) years if the facility is a Title V facility, and be made available to the Executive Officer or designee upon request. The records shall include, but are not limited to:

(A) All notification requirements under paragraph (c)(7);

(B) Tank or pipeline owner, address and applicable tank permit numbers;

(C) Tank or pipeline degassing operator's name, contact person, telephone number and applicable control equipment permit numbers;

(D) Tank or pipeline capacity, volume of vapor space degassed and materials stored;

(E) The flow rate and gaseous VOC concentration vented to the degassing equipment, if applicable;

(F) The gaseous VOC concentration of the degassing equipment exhaust, if applicable;

(G) The total amount of VOC processed in the degassing equipment, if applicable; and

(H) All readings measured according to EPA Reference Test Method 21, as specified in subdivision (d).

(d) Test Methods

For the purpose of this rule, the following test methods shall be used.

(1) Measurement of gaseous VOC concentrations shall be conducted according to EPA Reference Method 21 using an appropriate analyzer calibrated with methane at a distance of 1 cm (0.4 inch) or less from the source. For pipelines, the probe inlet shall be located one foot away from the opening in the pipeline. When determining compliance with subparagraphs (c)(1)(B) or (c)(2)(B), the probe inlet of the monitoring instrument shall be located no more than 1 foot above the bottom of the tank or no more than 1 foot above the surface of the sludge material on the bottom of the tank. For upright, cylindrical aboveground tanks, the probe inlet shall be located at least 2 feet away from the inner surface of the tank wall.

(2) Reid vapor pressure is determined by ASTM D 323-90.

(3) The VOC content of gases shall be determined according to ASTM Method D 1945.

(e) Exemptions

(1) The provisions of this rule shall not apply to the degassing of less than 100 feet of a pipeline.

(2) The provisions of this rule shall not apply to the degassing of less than 0.25 miles of a pipeline that contained or previously contained any organic liquid having a Reid vapor pressure less than 202 mm Hg (3.9 psi).

(3) The provisions of subdivision (c) shall not apply to natural gas pipelines.

(4) The provisions of subdivision (c) shall not apply while connecting or disconnecting degassing equipment, sampling emissions, purging inert gas from pipelines when reintroducing product or while connecting or disconnecting pipelines and associated control techniques or control equipment.

(Adopted April 5, 1985)(Amended April 10, 1998)
(Amended March 17, 2000)(Amended April 1, 2011)

RULE 1150.1. CONTROL OF GASEOUS EMISSIONS FROM MUNICIPAL SOLID WASTE LANDFILLS

(a) Purpose

The purpose of this rule is to reduce non-methane organic compounds (NMOC), volatile organic compound (VOC) and toxic air contaminant (TAC) emissions from Municipal Solid Waste (MSW) landfills to prevent public nuisance and possible detriment to public health caused by exposure to such emissions. This rule also reduces methane emissions, a greenhouse gas.

(b) Applicability

This rule is applicable to any owner or operator of an active or inactive MSW landfill.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) ACTIVE COLLECTION SYSTEM as defined by 40 CFR 60.751 means a gas collection system that uses gas mover equipment.

(2) ACTIVE MSW LANDFILL means a Municipal Solid Waste landfill that has received solid waste on or after November 8, 1987.

(3) BACKGROUND means the local ambient concentration of total organic compounds (TOC) measured as methane determined by holding the instrument probe approximately 5 to 6 feet above the landfill surface.

(4) CLOSED MSW LANDFILL means a Municipal Solid Waste landfill that has ceased accepting solid waste for disposal and was conducted in accordance with all applicable federal, state and local statutes, regulations, and ordinances in effect at the time of closure.

(5) COMPONENT LEAK means the concentration of methane measured one half an inch or less from a component source that exceeds 500 parts per million by volume (ppmv), other than non-repeatable, momentary readings.

(6) COMPONENT means any equipment that is part of the gas collection system or gas control system and that contains landfill gas including, but

not limited to, wells, pipes, flanges, fittings, valves, flame arresters, knock-out drums, sampling pots, blowers, compressors, or connectors.

(7) CONSTRUCTION AND DEMOLITION WASTE means waste building materials, packing and rubble resulting from construction, remodeling, repair and demolition operations on pavements, houses, commercial building and other structures.

(8) CONTINUOUS OPERATION means that the gas collection and gas control systems are operated continuously, the existing gas collection wells are operating under vacuum while maintaining landfill gas flow, and the collected landfill gas is processed by a gas control system 24 hours per day.

(9) DESTRUCTION EFFICIENCY means a measure of the ability of a gas control device to combust, transform, or otherwise prevent emissions of methane from entering the atmosphere.

(10) ENCLOSED COMBUSTOR means an enclosed flare, steam generating boiler, internal combustion engine or gas turbine.

(11) ENERGY RECOVERY DEVICE means any combustion device that uses landfill gas to recover energy in the form of steam or electricity including, but not limited to gas turbines, internal combustion engines, boilers, and boiler-to-steam turbine systems.

(12) EXECUTIVE OFFICER means the Executive Officer or designee of the South Coast Air Quality Management District

(13) GAS COLLECTION SYSTEM means any system that employs various gas collection wells and connected piping and mechanical blowers, fans, pumps or compressors to create a pressure gradient and actively extract landfill gases.

(14) GAS CONTROL DEVICE means any device used to dispose of or treat collected landfill gas including, but not limited to, enclosed flares, open flares, internal combustion engines, boilers and boiler-to-steam systems, process heaters, fuel cells, and gas turbines.

(15) GAS CONTROL SYSTEM means any system that disposes of or treats collected landfill gas by one or more of the following means: combustion, gas treatment for subsequent sale, or sale for processing offsite, including for transportation fuel and injection into natural gas pipelines.

(16) INACTIVE MSW LANDFILL means a Municipal Solid Waste landfill that has not accepted solid waste after November 8, 1987 and

subsequently no further solid waste disposal activity has been conducted within the disposal facility.

(17) LANDFILL GAS means any untreated, raw gas derived through a natural process from the decomposition of organic waste deposited in a MSW landfill from the evolution of volatile species in the waste, or from chemical reactions of substances in the waste.

(18) LANDFILL SURFACE means the area of the landfill under which decomposable solid waste has been placed, excluding the working face.

(19) MUNICIPAL SOLID WASTE or MSW LANDFILL means an entire disposal facility in a contiguous geographical space where solid waste is placed in or on land. An MSW landfill may be active, inactive or closed.

(20) NON-DECOMPOSABLE SOLID WASTE means materials that do not degrade biologically to form landfill gases. Examples include, but are not limited to, earth, rock, concrete, asphalt, paving fragments, clay products, inert slag, asbestos-containing waste, and demolition material containing minor amounts (less than 10 percent by volume) of wood and metals. Materials that do not meet this definition are considered decomposable solid waste.

(21) NON-REPEATABLE MOMENTARY READINGS means indications of the presence of methane, total organic compounds, or toxic air contaminants, which persist for less than five seconds and do not recur when the sampling probe of a portable gas detector is placed in the same location.

(22) OPERATOR means the person:

(A) Operating the MSW landfill, or

(B) Operating the MSW landfill gas collection or gas control system.

(23) OWNER means the person holding title to the property.

(24) PASSIVE COLLECTION SYSTEM means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment, or uses the natural pressure gradient established between the encapsulated waste and the atmosphere to move the gas through the collection system.

(25) PERIMETER means the outer boundary of the entire waste disposal property.

(26) PROFESSIONAL ENGINEER means an engineer holding a valid certificate issued by the State of California Board of Registration for

Professional Engineers and Land Surveyors or a state offering reciprocity with California.

(27) SOLID WASTE means all decomposable and non-decomposable solid, semisolid and liquid wastes including garbage, trash, refuse, paper, rubbish, ashes, industrial waste, manure, vegetable or animal solid and semisolid waste. Solid waste also includes any material meeting the definition of solid waste in 40 CFR 60.751 (as last amended by 64 Fed. Reg. 9262, Feb. 24, 1999), as incorporated by reference herein.

(28) SUBSURFACE GAS MIGRATION means underground landfill gases that are detected at any point on the perimeter, pursuant to California Code of Regulation Title 27, section 20921.

(29) TOXIC AIR CONTAMINANT (TAC) means an air contaminant which has been identified as a hazardous air pollutant pursuant to Section 7412 of Title 42 of the United States Code; or has been identified as a TAC by the Air Resources Board pursuant to Health and Safety Code Section 39655 through 39662, or which may cause or contribute to an increase in mortality or an increase in serious illness, or potential hazard to human health.

(30) WASTE IN PLACE means the total amount of solid waste placed in an MSW landfill, estimated in tons. The refuse density is assumed to be 1,300 pounds per cubic yard and the decomposable fraction is assumed to be 70 percent by weight.

(31) WELL RAISING means a MSW landfill activity where an existing gas collection well is temporarily disconnected from a vacuum source; and the non-perforated pipe attached to the well is extended vertically to allow the addition of a new layer of solid waste or the final cover or is extended horizontally to allow extension of an existing layer of solid waste or cover material. The extended pipe is then reconnected to vacuum source in order to continue collecting gases from that well.

(32) WORKING FACE means that open area where solid waste is deposited daily and compacted with landfill equipment.

(d) Active Landfill Design and Operation Requirements

The MSW landfill owner or operator shall comply with the provisions of paragraphs (d)(1) through (d)(20):

(1) If a valid Permit to Construct or Permit to Operate for the gas collection and gas control systems that meets the requirements of subparagraphs (d)(1)(A) through (d)(1)(C) has not been issued by the District, the owner or operator shall submit a site-specific gas collection and gas control systems design plan. The design plan shall be prepared by a Professional Engineer and submitted to the Executive Officer with applications for Permits to Construct or Permits to Operate for the gas collection and gas control systems. The Executive Officer shall review the gas collection and gas control systems design and either approve it, disapprove it, or request that additional information be submitted. An approved design plan may be revised and submitted for review and approval by the Executive Officer. Revisions shall be prepared by a Professional Engineer.

(A) The gas collection and gas control systems shall be designed to handle the maximum expected gas flow rate from the entire area of the MSW landfill that requires control, to minimize migration of subsurface gas to comply with paragraph (d)(10), and to collect gas at an extraction rate to comply with paragraphs (d)(11) and (d)(12). For the purposes of calculating the maximum expected gas generation flow rate from the landfill, the 2006 Intergovernmental Panel on Climate Change Guidelines for National Greenhouse Gas Inventories, Chapter 3 (IPCC Model), using landfill gas capture factor of 75 percent shall be used. Any other method used to determine the maximum gas generation flow rate, must be submitted in writing and approved by the Executive Officer, prior to use.

(B) If a valid Permit to Construct or Permit to Operate has not been issued by the District for the gas collection and gas control systems, the gas collection and gas control systems design plan shall either conform with specifications for active collection systems in 40 CFR, Part 60, Section 60.759 or include a demonstration to the Executive Officer’s satisfaction of the sufficiency of the alternative provisions describing the design and operation of the gas collection and gas control systems, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. Alternatives to this rule shall be submitted as specified in subdivision (i).

(C) The design plan shall provide for the control of collected MSW landfill emissions through the use of gas collection and gas control systems meeting the applicable requirements in clauses (d)(1)(C)(i), (d)(1)(C)(ii), (d)(1)(C)(iii), and (d)(1)(C)(iv), or provide for the collection and subsequent sale of collected MSW landfill emissions as specified in clause (d)(1)(C)(v).

(i) Route all collected landfill gas to a gas control system designed to be operated continuously to reduce methane by at least 99 percent by weight and reduce NMOC by at least 98 percent by weight or reduce the outlet NMOC concentration to less than 20 parts per million by volume (ppmv), dry basis as hexane at 3 percent oxygen. The required reduction efficiency or ppmv shall be established by an initial source test, required under 40 CFR, Part 60, Section 60.8 and annually thereafter using the test methods specified in paragraph (j)(1). The annual source test shall be conducted no later than 45 days after the anniversary date of the initial source test.

(ii) If an enclosed flare is used as the gas control device, the following requirements shall be met:

(I) The enclosed flare shall achieve a methane destruction efficiency of at least 99 percent by weight.

(II) The enclosed flare shall be equipped with an automatic damper, an automatic shutdown device, a flame arrestor, and a continuous recording temperature sensor.

(III) During restart or startup, an enclosed flare shall have sufficient flow of propane or commercial natural gas to the burners to prevent unburned collected methane from being emitted to the atmosphere.

(IV) The enclosed flare shall be operated within the parameter ranges established during the initial or the most recent source test. The operating

parameters to be monitored are specified in paragraph (e)(7).

(iii) If an open flare is used as the gas control device, the following requirements shall be met:

(I) An open flare installed and operated prior to August 1, 2008 may operate until January 1, 2018.

(II) Operation of an open flare on or after January 1, 2018 may be allowed if the owner or operator can demonstrate to the Executive Officer that the landfill gas heat input capacity is less than 3.0 MMBtu/hr and is insufficient to support the continuous operation of an enclosed flare or other gas control device.

(III) The owner or operator seeking to temporarily operate an open flare during the maintenance or repair of a gas control system or while waiting for the installation on an enclosed flare or to offset gas mitigation issues must submit a written request to the Executive Officer and operate an open flare only after approval.

(iv) If a gas control device is an enclosed combustor other than a flare and is used as a gas control device, the following requirements shall be met:

(I) The gas control device shall achieve a methane destruction efficiency of at least 99 percent by weight. Lean burn combustion engines shall reduce the outlet methane concentration to less than 3,000 ppmv, dry basis, corrected to 15 percent oxygen.

(II) If a boiler or process heater is used as the gas control device, the landfill gas stream shall be introduced into the flame zone. Where the landfill gas is the primary fuel for the boiler or process heater, introduction of the landfill gas stream into the flame zone is not required.

(III) The gas control device shall be operated within the operating parameter ranges established during the

initial or most recent compliant source test. The operating parameters to be monitored are specified in paragraph (e)(7).

(v) Route the collection gas to a treatment system that processes the collection gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to requirements of clause (d)(1)(C)(i).

(2) New and Active MSW Landfills shall install and operate the gas collection and gas control systems no later than 18 months after the submittal of the design plan.

(3) Any owner or operator of existing gas collection and gas control systems who modifies those systems to meet the requirements of this rule shall submit for approval to the Executive Officer an amendment of the existing design plan to include any necessary updates or addenda. Design plan amendments shall be prepared by a professional engineer.

(4) The owner or operator of a closed or inactive landfill shall install and operate the gas collection and gas control systems no later than 30 months after the approval of the design plan.

(5) The owner or operator of an active MSW Landfill shall identify in their design plan the areas of the landfill that are closed or inactive.

(6) Any area of the landfill that contains asbestos-containing waste or non-decomposable solid waste may be excluded from collection provided that the owner or operator submits documentation to the Executive Officer regarding the nature of the material, and the date of its deposit in the area. This documentation may be included as part of the design plan.

(7) The design plan shall include a description of potential mitigation measures to be used to prevent the release of methane or other pollutants into the atmosphere during the installation or preparation of wells, piping, or other related components during repairs or the temporary shutdown of the gas collection system components; or to be used when solid waste is excavated and moved.

(8) The gas collection device and gas control systems shall be operated, maintained and expanded in accordance with the procedures and schedules set forth in the approved design plan.

(9) If the District has not issued prior written approval for subsurface refuse boundary sampling probes, the owner or operator shall design and install subsurface refuse boundary sampling probes as specified in Section 1.1 Attachment A, to determine whether landfill gas migration exists. Installation of the refuse boundary probes shall be no later than 18 months after the submittal of the gas collection and gas control systems design plan as specified in paragraph (d)(1).

(10) Operate the gas collection system to prevent the concentration of TOC measured as methane from exceeding five percent by volume in the subsurface refuse boundary sampling probes constructed for the purposes of detecting lateral migration of landfill gas away from the waste mass, as determined from collected samples.

(11) Operate the gas collection system to prevent the concentration of TOC measured as methane from exceeding 25 ppmv as determined by integrated samples taken on numbered 50,000 square foot landfill grids.

(12) Operate the gas collection system to prevent the concentration of TOC measured as methane from exceeding 500 ppmv above background as determined by instantaneous monitoring at any location on the landfill, except at the outlet of any gas control device.

(13) Operate the gas collection and gas control systems so that there are no leaks that exceed 500 ppmv TOC measured as methane at any component under positive pressure. Any component leak exceeding 500 ppmv must be tagged and repaired within 10 calendar days from the time of the first exceedance.

(14) Operate the gas collection and gas control systems at all times for landfills with an Active Collection System. In the event the gas collection or gas control systems are inoperable, the active collection systems shall be shut down and all valves in the gas collection and gas control systems contributing to venting of the gas to the atmosphere shall be closed no later than one hour after such breakdown or no later than one hour after the time the owner or operator knew or reasonably should have known of its occurrence.

(15) Operate the gas collection and gas control systems until all the exemption criteria under subdivision (k) have been met and the reports specified in subparagraph (f)(2)(D) have been submitted to the Executive Officer.

(16) Operate all Wellheads so the gauge pressure is under a constant vacuum (negative pressure), except under the following conditions:

(A) During wellhead raising: When a new fill is being added or compacted in the immediate vicinity around the well and once installed, while a gas collection well extension is sealed or capped until the raised well is reconnected to vacuum source.

(B) During repair and temporary shutdown of the gas collection system due to a catastrophic event, such as an earthquake, or to extinguish landfill fires; and as a result of these events, during repair efforts to connect new landfill gas collection system components to the existing gas collection system, and to do required permitted component connection for the gas collection system, and to perform permitted construction activities provided the following requirements are met:

(i) Any new gas collection system components required to maintain compliance with this subparagraph must be included in the most recent Design Plan pursuant to paragraph (d)(3).

(ii) Methane and other landfill gas emissions are minimized during shutdown pursuant to subdivision (d).

(17) Design, install, and operate a wind speed and direction monitoring system with a continuous recorder of the requirements in subparagraphs (d)(17)(A) and (d)(17)(B), at a site which is representative of the wind speed and direction in the areas being sampled. The wind velocity shall be recorded throughout the sampling period. The wind direction transmitter shall be oriented to true north using a compass.

(A) For wind speed use a 3 cup assembly, with a range of 0 to 50 miles per hour, with a threshold of 0.75 mile per hour or less.

(B) For wind direction, use a vane with a range of 0 to 540 degrees azimuth, with a threshold of plus-minus 2 degrees.

(18) Comply with the requirements of Section 21140 – Final Cover, of California Code of Regulations Title 27, Subchapter 5 – Closure and Post-Closure Maintenance, upon closure of a MSW landfill unit, incorporated herein as Attachment B.

(19) Comply with the requirement of Section 20200 – State Water Resources Conservation Board (SWRCB) Applicability and Classification Criteria of

California Code of Regulations Title 27, Article 2 – SWRCB, Waste Classification and Management, with respect to the disposal of liquids and semi-solid waste at Class III landfills, incorporated herein as Attachment C.

(20) Comply with the requirements of National Emissions Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63 Subpart AAAA, as applicable.

(e) Active Landfill Sampling and Monitoring Requirements

The MSW landfill owner or operator shall comply with the provisions of paragraphs (e)(1) through (e)(7), after installation of the landfill gas control system:

(1) Monitor and collect samples for analysis as specified in Section 1.0, Attachment A, to determine the concentrations of TOC and TAC each month from the subsurface refuse boundary sampling probes, to assure continued compliance. Any measurement of 5 percent TOC by volume or greater shall be recorded as an exceedance and the actions specified in subparagraphs (e)(1)(A) through (e)(1)(C) shall be taken.

(A) The probe shall be identified and the location recorded as specified in Section 1.6, Attachment A.

(B) Adjustments to the vacuum of adjacent wells to increase the gas collection in the vicinity of the probe with the exceedance, shall be made and the probe resampled no later than 10 calendar days after detecting the exceedance.

(C) If the resampling of the probe shows a second exceedance, additional corrective action shall be taken and the probe shall be resampled again no later than 10 calendar days after the second exceedance. If the resampling shows a third exceedance, it is a violation unless the owner or operator determines that a new or replacement gas collection well is needed. The owner or operator must install and operate the new or replacement well no later than 45 days after detecting the third exceedance.

(2) Collect monthly integrated samples for analysis as specified in Section 2.0, Attachment A, to determine the concentrations of TOC and TAC from the landfill surface, and to assure continued compliance. Any reading of

25 ppmv or greater shall be recorded as an exceedance and the actions specified in subparagraphs (e)(2)(A) through (e)(2)(C) shall be taken.

(A) The grid shall be identified and the location recorded as specified in Section 2.8, Attachment A.

(B) If the sample shows an exceedance, the gas collection equipment and the landfill cover shall be serviced to ensure the exceedance is repaired. If adjustments to the vacuum of adjacent wells are made to increase the gas collection in the vicinity of the grid with the exceedance resample the grid no later than 10 calendar days after detecting the exceedance. If measurable precipitation occurs within the 10 calendar days, all resamples and analysis shall comply with Section 2.2.2, Attachment A.

(C) If the resample of the grid shows a second exceedance, additional corrective action shall be taken and the grid shall be resampled again no later than 10 calendar days after the second exceedance. If the resample shows a third exceedance, it is a violation unless the owner or operator determines that a new or replacement gas collection well is needed. The owner or operator must install and operate the new or replacement well no later than 45 days after detecting the third exceedance.

(3) Instantaneous surface monitoring as specified in Section 3.0, Attachment A, shall be conducted to determine the concentration of TOC each calendar quarter, to assure continued compliance. Any reading of 500 ppmv TOC or greater other than non-repeatable momentary readings, shall be recorded as an exceedance and the actions specified in subparagraphs (e)(3)(A) through (e)(3)(C) shall be taken. Any closed or inactive MSW landfill that meets the definitions in (c)(4) or (c)(16) and has no observed monitoring readings that exceed 500 ppmv for the last four consecutive quarterly monitoring periods may, upon approval of the Executive Officer, monitor annually. Any reading of 500 ppmv TOC or more detected during the annual monitoring or an SCAQMD compliance inspection that cannot be remediated within 10 days shall result in a return to quarterly monitoring for the landfill.

(A) The location of each exceedance shall be clearly marked and identified on a topographic map of the MSW landfill or identified

by using a global positioning system and the location recorded as specified in Section 3.4, Attachment A.

(B) Corrective action must be taken by the owner or the operator, including, but not limited to one or more of the following: cover maintenance or repair, or well vacuum adjustments. The location shall be remonitored no later than 10 calendar days after detecting the exceedance.

(C) If the remonitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be remonitored again no later than 10 days after the second exceedance. If the remonitoring shows a third exceedance, it is a violation unless the owner or operator determines that a new or replacement gas collection well is needed. The owner or operator must install and operate the new or replacement well no later than 45 days after detecting the third exceedance.

(4) Wellheads shall each be monitored monthly to determine the gauge pressure. If there is any positive pressure reading, other than as provided in subparagraphs (d)(16)(A) and (d)(16)(B), the owner or operator shall take the following actions:

(A) Initiate corrective action within 5 calendar days of the positive pressure measurement.

(B) If the problem cannot be corrected within 15 days of the first positive pressure measurement, the owner or operator must initiate further action, including but not limited to, any necessary expansion of the gas collection system to mitigate any positive pressure readings.

(C) All corrective actions, including any expansion of the gas collection and gas control systems, must be completed and any new wells must be in operation within 120 days of the date of the first positive pressure measurement.

(D) Determination of gauge pressure must be determined using a hand-held manometer, magnahelic gauge or other pressure measuring device approved by the Executive Officer. The device must be calibrated and operated in accordance with the manufacturer's specifications.

(5) Collect a monthly landfill gas sample for analysis as specified in Section 4.0, Attachment A, to determine the concentrations of TOC and TAC from the main gas collection header line entering any gas control systems.

(6) Collect monthly ambient air samples for analysis as specified in Section 5.0, Attachment A, to determine the concentrations of TOC and TAC from the landfill property boundary.

(7) Monitor the gas collection and gas control systems equipment specified under subparagraphs (e)(7)(A), (e)(7)(B) and (e)(7)(C) in order to comply with subparagraph (d)(1)(C).

(A) For enclosed combustors and enclosed flares, the following equipment must be installed, calibrated, maintained, and operated according to the manufacturer's specifications:

(i) A temperature monitoring device equipped with a continuous recorder and having an accuracy of plus-minus 1 percent of the temperature being measured expressed in degrees Celsius or Fahrenheit. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity greater than 44 megawatts.

(ii) At least one gas flow rate measuring device that shall record the flow to the gas control device(s) at least every 15 minutes.

(B) For open flares and other non-combustion systems, demonstrate compliance with subparagraph (d)(1)(C) by providing information satisfactory to the Executive Officer describing the operation of the gas control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. Alternatives to this rule shall be submitted as specified in subdivision (i). The Executive Officer may specify additional appropriate monitoring procedures.

(C) All components containing landfill gas that are under positive pressure shall be monitored for leaks on a quarterly basis. Any component leak must first be tagged and then repaired within 10 calendar days. Component leak testing at MSW landfills having landfill gas-to-energy facilities may conduct testing for leaks prior to scheduled maintenance or during planned outage periods.

(f) Active Landfill Recordkeeping and Reporting Requirements

The MSW landfill owner or operator shall keep all records on paper, electronic or in other suitable data formats approved by the Executive Officer, kept up-to-date, readily accessible and maintained for at least a period of 5 years. Such records shall be made available to the Executive Officer upon request. Records older than 2 years may be maintained off-site, if they are retrievable no later than 4 hours after request.

(1) The records required in subparagraphs (f)(1)(A) through (f)(1)(L) shall be maintained and be accessible by the facility.

(A) For the life of the gas control system, as measured during the initial source test or compliance determination:

(i) The gas control device vendor specifications.

(ii) The maximum expected gas generation flow rate as calculated pursuant to subparagraph (d)(1)(A).

(iii) When demonstrating compliance with subparagraph (d)(1)(C) through the use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity greater than 44 megawatts:

(I) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the source test.

(II) The reduction of NMOC and the reduction of methane determined as specified in clause (d)(1)(C)(i) achieved by the gas control device.

(iv) When demonstrating compliance with subclause (d)(1)(C)(i) through the use of a boiler or process heater of any size: a description of the location at which the collected gas vent stream is introduced into the boiler or process heater and is established during the initial or most recent source test.

(v) When demonstrating compliance with subparagraph (d)(1)(A) though the use of a non-enclosed combustion device, the owner or operator shall maintain records of measurement from the initial source test and from each annual performance test as specified in 40 CFR 60.18. If the combustion device is an open flare, the owner or

operator shall maintain records of the flare flame monitoring and records of all periods of operation during which the pilot flame of the flare is absent.

(B) The data required to be recorded under Section 1.6, Attachment A, for subsurface refuse boundary sampling probes and all remedial actions taken for exceedances of the 5 percent TOC standard required in paragraph (d)(10) and all actions taken and recorded to comply with Title 27 sec. 20937 (a)(2)(B)(i) through (a)(2)(B)(iv).

(C) The data required to be recorded under Section 2.8, Attachment A, for integrated samples and all remedial actions taken for exceedances of the 25 ppmv TOC standard required in paragraph (d)(11).

(D) The data required to be recorded under Section 3.4, Attachment A, for instantaneous monitoring and all remedial actions taken for exceedances of the 500 ppmv TOC standard required in paragraph (d)(12). Instantaneous monitoring exceedances from 200 to 499 ppmv shall also be recorded but remedial action is not required.

(E) The data required to be recorded under Section 4.5, Attachment A, for landfill gas samples collected from the main gas collection header line entering the gas treatment and/or gas control systems.

(F) The data required to be recorded under Section 5.7, Attachment A, from ambient air collected at the landfill property boundary.

(G) A description and the duration of all periods when the gas collection or gas control system was not operating for a period exceeding one hour and the length of time the system was not operating.

(H) During construction that requires exposing solid waste material to the atmosphere, the following records are required:

(i) A description of actions taken, the affected area of the MSW Landfill, the reason the actions are required and a list of the landfill gas collection system components affected by actions;

(ii) Construction start and finish dates, projected equipment installation dates, and projected shut down times for individual gas collection system components; and

(iii) A description of the mitigation measures taken to minimize methane emissions and other potential air quality impacts during the construction period.

(I) All records pertaining to solid waste acceptance, solid waste acceptance rate, and the current amount of waste in place.

(J) All records pertaining to non-degradable waste acceptance, including the nature, location, amount, and the deposition for any landfill area excluded from the gas collection system.

(K) All records of positive wellhead gauge pressure measurements, the date of the measurements, the well identification number, and the corrective action taken.

(L) Continuous records of the equipment operating parameters specified to be monitored under paragraph (e)(7) as well as records for periods of operation during which the parameter boundaries established during the most recent source test are exceeded.

(i) The following constitute exceedances that shall be recorded:

(I) For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28^{o} C (82^{o} F) below the average combustion temperature during the most recent source test at which compliance with subparagraph (d)(1)(C) was determined.

(II) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under clause (f)(1)(A)(iv).

(ii) Records of the indication of flow to the gas control device specified in clause (e)(7)(A)(ii).

(iii) Each owner or operator who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with subparagraph (d)(1)(C) shall keep records of all periods of operation of the boiler or process

heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements.)

(2) The reports required in subparagraphs (f)(2)(A) through (f)(2)(D) shall be submitted to the Executive Officer.

(A) The initial source test report no later than 180 days after start-up and each succeeding complete annual source test report no later than 45 days after the anniversary date of the initial source test, for all gas control systems required in subparagraph (d)(1)(C).

(B) A report no later than 45 days after the last day of each calendar quarter with the information required in clauses (f)(2)(B)(i) and (f)(2)(B)(ii).

(i) All exceedances of the emission standards required in paragraphs (d)(10), (d)(11) and (d)(12) in the format required under Sections 1.6, 2.8 and 3.4, Attachment A. All exceedances resampled/remonitored and each corrective action required under paragraphs (e)(1), (e)(2) and (e)(3). If there are no exceedances, submit a letter stating there were no exceedances for that quarter.

(ii) All TAC analyses required in paragraphs (e)(1) through (e)(6).

(C) Any owner or operator of a MSW landfill which has ceased accepting waste shall submit a closure report to the Executive Officer no later than 30 days after waste acceptance cessation. The report should include the last day solid waste was accepted, the projected date of closure for the MSW Landfill, and the estimated amount of waste-in-place. The Executive Officer may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR, Part 258, Section 258.60 or the applicable federal, state and local statutes, regulations, and ordinances in effect at the time of closure. If a closure report has been submitted to the Executive Officer, no additional wastes shall be placed into the landfill without filing a notification of modification as described under 40 CFR, Part 60, Section 60.7(a)(4).

(D) Any owner or operator of a MSW landfill which has ceased operation of a gas collection or gas control system shall submit a decommissioning report to the Executive Officer 30 days prior to well capping, removal or cessation of operation of the collection, treatment or control equipment. The decommissioning report shall contain all of the items as specified in clauses (f)(2)(D)(i) through (f)(2)(D)(iii):

(i) A copy of the closure report submitted in accordance with subparagraph (f)(2)(C).

(ii) A copy of the initial source test report demonstrating that the gas collection and gas control systems have been installed for a minimum of 15 years.

(iii) All records needed to verify that the landfill meets the exemption criteria under subdivision (k).

(3) An Annual Report shall be submitted by any owner or operator subject to the requirements of this rule. The Annual Report shall cover the period of January 1 through December 31 of each year. Each Annual Report shall be submitted by March 15 of the following year to the District. The Annual Report shall contain the following:

(A) MSW Landfill name, owner and operator, address, solid waste information system (SWIS) identification number, landfill status (active, closed, inactive) and estimated waste-in–place in tons;

(B) Total volume of landfill gas collected (reported in standard cubic feet);

(C) Average composition of the landfill gas collected over the reporting period (reported in percent methane and percent carbon dioxide by volume);

(D) Gas control device type, year of installation, rating, fuel type, and total amount of landfill gas combusted in each gas control device;

(E) The date that the gas collection and gas control systems were installed and in full operation;

(F) The percent methane destruction efficiency of each gas control device;

(G) Type and amount of supplemental fuels burned with the landfill gas in each device;

(H) Total volume of landfill gas shipped off-site, the composition of the landfill gas collected (reported in percent methane and percent carbon dioxide by volume), and the recipient of the gas;

(I) Most recent topographic map of the site showing the areas with final cover and a geomembrane, and areas with final cover without a geomembrane, with corresponding percentages over the landfill surface; and

(J) The records required by paragraph (f)(1) except for records required by subparagraphs (f)(1)(B), (f)(1)(E) and (f)(1)(F).

(4) Any report or information required in paragraph (f)(2) or (f)(3) must be certified by a responsible official that the statements and information in the report are true, accurate, and complete.

(g) Active Landfill Compliance Schedule

The MSW landfill owner or operator shall comply with the active landfill requirements of this rule or an approved Rule 1150.1 Compliance Plan as specified in subdivision (i). An MSW landfill owner or operator that requires one or more alternatives to comply with this rule due to the April 1, 2011 rule amendment, shall submit a request for such alternatives as specified in subdivision (i) by May 6, 2011 that demonstrates compliance no later than July 1, 2011, and shall comply with any previously approved Rule 1150.1 Compliance Plan until July 1, 2011 or until the owner or operator has received an approved revised Rule 1150.1 Compliance Plan. On and after July 1, 2011, the MSW landfill owner or operator shall operate pursuant to an approved Rule 1150.1 Compliance Plan or, if plan approval is pending, the revised Rule 1150.1 Compliance Plan submitted on or before May 6, 2011.

(h) Inactive Landfill Requirements

The MSW landfill owner or operator shall comply with either the applicable requirements in paragraphs (h)(1) and (h)(2) or submit alternatives to this rule as specified in subdivision (i).

(1) Inactive landfills that have a landfill gas collection system shall meet all of the active landfill requirements. For those inactive landfills without a gas collection system and determined to need one, meet all of the active landfill requirements, except the gas collection and gas control systems

design plan. Applications for permits shall be submitted no later than one year after notification by the Executive Officer.

(2) Inactive landfills without a gas collection system:

(A) Upon discovery of TOC measured as methane exceeding 200 ppmv at any location on the landfill surface, apply mitigation measures such as compaction, additional cover, and/or watering to reduce the emissions to less than 200 ppmv. The procedure used for measurement of TOC shall meet the requirements of Section 3.0, Attachment A.

(B) Submit the following data and/or meet the required action in paragraph (h)(1):

(i) No later than 30 days after the receipt of a request, submit to the Executive Officer a screening questionnaire pursuant to California Air Resources Board Health and Safety Code (H & S) 41805.5.

(ii) No later than 90 days after the date of a second request, submit to the Executive Officer a solid waste air quality assessment test (SWAT) report pursuant to H & S 41805.5, to determine whether or not a landfill gas collection and gas control systems and/or a subsurface refuse boundary probe sampling system shall be required to be installed.

(iii) If additional time is needed to provide the information required in clauses (h)(2)(B)(i) and (h)(2)(B)(ii), a written request for an extension may be submitted in writing to the Executive Officer, indicating the amount of time that is needed to obtain such information. Such a request for an extension may be submitted to the Executive Officer no later than 30 days after the receipt of the Executive Officer's requests as specified in clauses (h)(2)(B)(i) and (h)(2)(B)(ii).

(iv) Upon notification by the Executive Officer that a landfill gas collection and gas control systems and/or a subsurface refuse boundary probe sampling system shall be required, comply with paragraph (h)(1).

(i) Alternatives

The owner or operator of a MSW landfill may request alternatives to the compliance requirements, monitoring requirements, test methods, and test procedures of this rule. All requests for alternatives to the requirements of this rule shall be submitted to the Executive Officer in a Rule 1150.1 Compliance Plan. The Executive Officer shall review the Rule 1150.1 Compliance Plan and either approve it, disapprove it, or request that additional information be submitted. Unless a determination is made by the Executive Officer that the Rule 1150.1 Compliance Plan will provide equivalent levels of emission control and enforceability, as would compliance with the requirements of this rule, the Executive Officer will deny the plan. Criteria that the Executive Officer may use to evaluate requests for alternatives include, but are not limited to: compliance history, documentation, containment of the landfill gas flow rate measured methane concentrations for individual gas collection wells or components, permits, component testing and surface monitoring results, gas collection and gas control systems operations, maintenance and inspection records, and historical meteorological data. Requests for alternatives may include, but are not limited to, the following:

(1) Semi-continuous operation of the gas collection and gas control systems due to insufficient landfill gas flow rates.

(2) Additional time for leak repairs for landfills having consistent issues related to the procurement and delivery of necessary parts to complete the repairs.

(3) Alternative wind speed requirements for landfills consistently having wind speed in excess of the limit specified in Sec.2.2.1 of Attachment A.

(j) Test Methods

(1) Methods of Analysis

(A) Either U.S. EPA Reference Method 25 or U.S. EPA Reference Method 18 (inlet only), 40 CFR, Part 60, Appendix A, SCAQMD Method 25.1 or SCAQMD Method 25.3 shall be used to determine the efficiency of the gas control system in reducing NMOC. If using Method 18, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The equation in subparagraph (j)(1)(B) shall be used to calculate efficiency.

(B) U.S. EPA Reference Method 25, 40 CFR, Part 60, Appendix A, SCAQMD Method 25.1, or SCAQMD Method 25.3 shall be used to determine the efficiency of the gas control system in reducing the outlet NMOC concentration to less than 20 ppmv, dry basis as hexane at 3 percent oxygen. The following equation shall be used to calculate efficiency:

$$\text{Control Efficiency (\%)} = \frac{(\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}})}{(\text{NMOC}_{\text{in}})} \times 100\%$$

where,

NMOC_{in} = mass of NMOC entering control device

NMOC_{out} = mass of NMOC exiting control device

(C) Either U.S. EPA Reference Method 25, U.S. EPA Reference Method 18, 40 CFR, Part 60, Appendix A, SCAQMD Method 25.1, SCAQMD Method 25.3, ASTM Method D1945, or ASTM Method D1946 shall be used to determine the efficiency of the gas control system in reducing methane. The equation in subparagraph (j)(1)(D) shall be used to calculate efficiency.

(D) U.S. EPA Reference Method 25, U.S. EPA Reference Method 18, 40 CFR, Part 60, Appendix A, SCAQMD Method 25.1, SCAQMD Method 25.3, ASTM Method D1945, or ASTM Method D1946 shall be used to determine the efficiency of the gas control system in reducing the outlet methane concentration to less than 20 ppmv, dry basis as hexane at 3 percent oxygen. The following equation shall be used to calculate efficiency:

$$\text{Control Efficiency (\%)} = \frac{(\text{Methane}_{\text{in}} - \text{Methane}_{\text{out}})}{(\text{Methane}_{\text{in}})} \times 100\%$$

where,

$\text{Methane}_{\text{in}}$ = mass of Methane entering control device

$\text{Methane}_{\text{out}}$ = mass of Methane exiting control device

(2) Equivalent Test Methods

Any other method demonstrated to be equivalent and approved in writing by the Executive Officers of the District, the California Air Resources Board (CARB), and the Regional Administrator of the United States

Environmental Protection Agency (U.S. EPA), Region IX, or their designees, may be used to determine compliance with this rule.

(3) Approval for Conducting Test and Analysis

The owner or operator shall use a test laboratory approved under the SCAQMD Laboratory Approval Program for source test methods cited in subdivision (j). If there is no approved laboratory, then approval of the testing procedures used by the laboratory shall be granted by the Executive Officer on a case-by-case basis based on SCAQMD protocols and procedures. In addition, when more than one source test method or set of source test methods are specified for any testing, the application of these source test methods to a specific set of test conditions is subject to approval by the Executive Officer.

(4) Violation of Test Methods

A violation established by any one of the specific source test methods or set of source test methods shall constitute a violation of this rule.

(k) Exemptions

An MSW landfill may be temporarily exempt from all or any portion of the requirements of this rule if the owner or operator can demonstrate to the Executive Officer that the MSW landfill emissions meet the requirements of paragraphs (k)(1) through (k)(5), temporary exemptions may be independently determined by the Executive Officer, if the MSW landfill emissions meet the requirements of paragraphs (k)(1) through (k)(5). MSW landfills issued temporary exemption letters by the Executive Officer shall remain exempt, subject to periodic review, provided:

(1) The MSW landfill complies with the requirements of paragraphs (d)(10), (d)(11) and (d)(12).

(2) The MSW landfill emits less than 55 tons per year of NMOC as specified in 40 CFR, Part 60, Section 60.752(b) or, for a closed landfill, as specified in 40 CFR, Part 60, Section 60.752(b)(2)(v)(C).

(3) The MSW landfill constitutes a less than significant health risk. In making this determination the Executive Officer shall consider the listed factors in subparagraphs (k)(3)(A) through (k)(3)(G). Where not specified, in evaluating the cancer risks and hazard indices, the Executive Officer shall be guided by the definitions in District Rule 1401 - New

Source Review of Carcinogenic Air Contaminants, and Rule 1402 - Control of Toxic Air Contaminants from Existing Sources.

(A) The proximity to, and any adverse impacts on, residences, schools, hospitals or other locations or structures which have children, or elderly or sick persons.

(B) The emission migration beyond the landfill property boundary.

(C) The complaint history.

(D) The age and closure date.

(E) The amount and type of waste deposited.

(F) That the emissions of carcinogenic air contaminants, specified in Tables 1 & 2, Attachment A, from the landfill will not result in a maximum individual cancer risk greater than one in one million (1×10^{-6}) at any receptor location.

(G) That the emissions of TAC, specified in Tables 1 & 2, Attachment A, from the landfill will not result in a total acute or chronic Hazard Index of greater than 1.

(4) The MSW landfill is in compliance with District Nuisance Rule 402.

(5) The MSW landfill does not generate sufficient gas to support a gas control system. In making this determination, the Executive Officer shall apply the requirements of subparagraphs (k)(5)(A) and (k)(5)(B), and shall only consider temporary exemptions from the requirements of subdivision (d).

(A) If the MSW landfill is closed or inactive and has a landfill gas heat input capacity equal to or greater than 3.0 MMBtu/hr, the owner or operator must demonstrate to the satisfaction of the Executive Officer that after four consecutive quarterly instantaneous monitoring periods there are no surface methane leaks exceeding 200 ppmv, and submit a waste-in-place report and all instantaneous surface monitoring records from the previous year to the Executive Officer.

(B) If the MSW landfill is active and has 450,000 tons of waste-in-place or greater and a landfill gas heat input capacity greater than or equal to 3.0 MMBTU/hr, the owner or the operator must demonstrate to the satisfaction of the Executive Officer that after four consecutive quarterly instantaneous monitoring periods there

are no surface methane leaks exceeding 200 ppmv and re-calculate the heat capacity annually.

Such a temporary exemption shall be reviewed periodically by the Executive Officer, to consider the land use surrounding the landfill and gaseous emissions, and the impact on the public. Depending upon the results of the review, the Executive Officer may extend or terminate the exemption.

(l) Loss of Exemption

If an MSW landfill should have its temporary exemption terminated, the owner or operator shall comply with the active landfill requirements of this rule.

(m) The amendments to this rule adopted April 1, 2011 implementing the State Air Resources Board Landfill Rule Cal. Code Regs. Tit. 17 §95460 et seq. shall not become effective until the State Air Resources Board Executive Officer or designee provides a letter to the District stating that the enforcement of these requirements shall be in lieu of the State Air Resources Board rule, which shall not be enforced within the District.

ATTACHMENT A

1.0 SUBSURFACE REFUSE BOUNDARY SAMPLING PROBES
Paragraphs (d)(9) and (e)(1) Requirements of Rule 1150.1

1.1 Subsurface Probe Design and Installation

Landfills which are subject to Rule 1150.1 must install and maintain a subsurface refuse boundary probe sampling system of adequate design to determine if gas migration exists for the ultimate purpose of preventing surface emissions. CalRecycle also requires the installation of refuse boundary probes for purposes of detecting and ultimately preventing subsurface migration of landfill gas past the permitted property boundary of the landfill/disposal site as well as the prevention of the accumulation of landfill gas in on-site structures. It is the District's intent that the subsurface refuse boundary probes required by paragraph (d)(9) of Rule 1150.1 be designed and installed in such a manner as to comply with the requirements of CalRecycle (whenever possible) and Sections 1.1.1 through 1.1.4.

1.1.1 The probes shall be installed within the landfill property line and outside the refuse disposal area.

1.1.2 Wherever accessible, the probes shall be located no further than 100 feet from the refuse boundary.

1.1.3 The spacing between probes shall be based on the adjacent land use no further than 1320 feet (1/4 mile) from the refuse boundary and shall be determined as follows:

LAND USE	SPACING
Residential/Commercial	100 feet
Public Access	500 feet
Undeveloped Open Space, (No Public Access)	650 feet
Landfill with Liners	1000 feet

1.1.4 Each probe shall be capped, sealed, have a sampling valve and be of multiple-depth design for which the depth shall be determined based on the depth of refuse no further than 500 feet from the probe as follows:

First Depth	10 feet below surface.
Second Depth	25% of refuse depth or 25 feet below surface, whichever is deeper.

Third Depth	50% of refuse depth or 50 feet below surface, whichever is deeper.
Fourth Depth	75% of refuse depth or 75 feet below surface, whichever is deeper.

Second, third, or fourth depth probes may be deleted if the required depth of such probe is deeper than the depth of the refuse.

1.2 Number of Samples

All refuse boundary gas probes at each depth shall be monitored monthly for TOC measured as methane using a portable flame ionization detector (FID) meeting the requirements of Section 3.2 and with a tube connected to the probe sampling valve. In addition, samples shall be taken as specified in Section 1.2.1 or 1.2.2 to determine the concentration of both TOC and TAC. The Executive Officer may require additional probes to be sampled upon written request.

1.2.1 If the TOC concentration measured with the FID does not exceed 5% by volume in any of the probes, collect one bag sample from one probe with the highest concentration, or

1.2.2 If the TOC concentration measured with the FID for any of the probes exceeds 5% by volume, collect one bag sample per probe from the probes with the highest concentrations above 5% by volume, from at least five probes.

1.3 Subsurface Refuse Boundary Probe Sampling Procedure

1.3.1 Prior to collecting gas samples, evacuate the probe (the probes must be sealed during evacuation) until the TOC concentration remains constant for at least 30 seconds.

1.3.2 The constant TOC concentration shall be measured using an FID that meets the requirements in Section 3.2.

1.3.3 Collect approximately a 10-liter gas sample in a Tedlar (DuPont trade name for polyvinyl) bag or equivalent container over a continuous ten-minute period using the evacuated container sampling procedure described in Section 7.1.1 of EPA Method 18 or direct pump sampling procedure described in Section 7.1.2 of EPA Method 18. The container shall be LIGHT-SEALED.

1.4 Subsurface Refuse Boundary Probe Analytical Procedures

All samples collected shall be analyzed no later than 72 hours after collection for TOC using U.S. EPA Method 25, 40 CFR, Part 60, Appendix A analysis or a portable FID that meets the requirements in Section 3.2 and for the TAC specified in Table 1 and upon written request, Table II, using U.S. EPA Compendium Method TO-14.

1.5 Chain of Custody (Required for samples sent to the lab)

A custody sheet shall accompany the bag samples. Each time a bag changes hands, it shall be logged on the custody sheet with the time of custody transfer recorded. Laboratory personnel shall record the condition of the sample (full, three-fourths full, one-half full, one-fourth full, or empty). An example of a custody sheet is shown in Figure 4.

1.6 Recording the Results

1.6.1 Record the volume concentration of TOC measured as methane for each individually identified refuse boundary probe (at each depth) and the volume concentration of TAC for selected probes on a quality control sheet as shown in Figure 3. Include a topographic map drawn to scale with the location of both the refuse boundary probes and the gas collection system clearly marked and identified.

1.6.2 Maintain and submit the results as specified in subdivision (f) of Rule 1150.1.

2.0 INTEGRATED LANDFILL SURFACE SAMPLING
Paragraph (d)(11) and (e)(2) Requirements of Rule 1150.1

2.1 Number of Samples

The number of samples collected will depend on the area of the landfill surface. The entire landfill disposal area shall be divided into individually identified 50,000 square foot grids. One monthly sample shall be collected from each grid for analysis. Any area that the Executive Officer deems inaccessible or dangerous for a technician to enter may be excluded from the sampling grids monitored by the landfill owner or operator. To exclude an area from monitoring, the landfill owner or operator shall file a written request with the Executive Officer. Such a request shall include an explanation of the requested exclusion and photographs of the area. The Executive Officer shall notify the landfill owner or operator in

writing of the decision. Any exclusion granted shall apply only to the monitoring requirement. The 25 ppmv limit specified in paragraph (d)(11) of Rule 1150.1 applies to all areas.

2.2 Integrated Surface Sampling Conditions

2.2.1. The average wind speed during this sampling procedure shall be five miles per hour or less. Surface sampling shall be terminated when the average wind speed exceeds five miles per hour or the instantaneous wind speed exceeds ten miles per hour. Average wind speed is determined on a 15-minute average.

2.2.2. Surface sampling shall be conducted when the landfill is dry. The landfill is considered dry when there has been no measurable precipitation for the preceding 72 hours prior to sampling. Most major newspapers report the amount of precipitation that has fallen in a 24-hour period throughout the Southern California area. Select the nearest reporting station that represents the landfill location or provide for measurable precipitation collection at the MSW landfill wind monitoring station.

2.3 Integrated Surface Sampler Equipment Description

An integrated surface sampler is a portable self-contained unit with its own internal power source. The integrated sampler consists of a stainless steel collection probe, a rotameter, a pump, and a 10-liter Tedlar bag enclosed in a LIGHT-SEALED CONTAINER to prevent photochemical reactions from occurring during sampling and transportation. The physical layout of the sampler is shown in Figure 1.

An alternate integrated surface sampler may be used, provided that the landfill owner or operator can show an equivalency with the sampler specifications in Section 2.4 and shown in Figure 1. All alternatives shall be submitted as specified in subdivision (i) of Rule 1150.1.

2.4 Integrated Surface Sampler Equipment Specifications

2.4.1 Power: Batteries or any other power source.

2.4.2 Pump: The diaphragm shall be made of non-lubricated Viton (Dupont trade name for co-polymer of hexafluoropropylene and vinylidene fluoride) rubber.

2.4.3 Bag: One 10-liter Tedlar bag with a valve. The Tedlar bag shall be contained in a LIGHT-SEALED CONTAINER. The valve shall be leak free and constructed of aluminum, stainless steel, or non-reactive plastic with a Viton or Buna-N (butadiene acrylonitrile co-polymer) o-ring seal.

2.4.4 Rotameter: The rotameter shall be made of borosilicate glass or other non-reactive material and have a flow range of approximately 0-to-1 liter per minute. The scale shall be in milliliters or an equivalent unit. The graduations shall be spaced to facilitate accurate flow readings.

2.4.5 Air Flow Control Orifice: Needle valve in the rotameter.

2.4.6 Funnel: 316 stainless steel.

2.4.7 Fittings, Tubing and Connectors: 316 stainless steel or Teflon.

2.5 Integrated Surface Sampling Procedure

2.5.1 An integrated surface sampler as described in Section 2.4 shall be used to collect a surface sample approximately 8-to-10 liters from each grid.

2.5.2 During sampling, the probe shall be placed 0-to-3 inches above the landfill surface.

2.5.3 The sampler shall be set at a flow rate of approximately 333 cubic centimeters per minute

2.5.4 Walk through a course of approximately 2,600 linear feet over a continuous 25-minute period. Figure 2 shows a walk pattern for the 50,000 square foot grid.

2.6 Integrated Surface Sample Analytical Procedures

All samples collected shall be analyzed no later than 72 hours after collection for TOC using U.S. EPA Method 25, 40 CFR, Part 60, Appendix A analysis or a portable FID that meets the requirements in Section 3.2. In addition, the samples specified in Section 2.6.1 or 2.6.2 must be analyzed no later than 72 hours after collection for the TAC specified in Table 1 and upon written request, Table II, using U.S. EPA Compendium Method TO-14.

2.6.1 Ten percent of all samples which have a concentration of TOC greater than 25 ppmv as methane, or

2.6.2 Two samples if all samples are 25 ppmv or less of TOC or two samples if there are less than 20 samples above 25 ppmv.

The Executive Officer may require more samples to be tested for TAC if he determines there is a potential nuisance or public health problem.

2.7 Chain of Custody (Required for samples sent to the lab)

A custody sheet shall accompany the bag samples. Each time a bag changes hands, it shall be logged on the custody sheet with the time of custody transfer recorded. Laboratory personnel shall record the condition of the sample (full, three-fourths full, one-half full, one-fourth full, or empty). An example of a custody sheet is shown in Figure 4.

2.8 Recording the Results

2.8.1 Record the volume concentration of both TOC measured as methane for each grid and the volume concentration for the required TAC on a quality control sheet as shown in Figure 3. Include a topographic map drawn to scale with the location of the grids and the gas collection system clearly marked and identified.

2.8.2 Record the wind speed during the sampling period using the wind speed and direction monitoring system required in paragraph (d)(17) of Rule 1150.1.

2.8.3 Maintain and submit the results as specified in subdivision (f) of Rule 1150.1.

3.0 INSTANTANEOUS LANDFILL SURFACE MONITORING
Paragraphs (d)(12) and (e)(3) Requirements of Rule 1150.1

3.1 Monitoring Area

The entire landfill disposal area shall be monitored once each calendar quarter. Any area of the landfill that the Executive Officer deems as inaccessible or dangerous for a technician to enter may be excluded from the area to be monitored by the landfill owner or operator. To exclude an area from monitoring, the landfill owner or operator shall file a petition with the Executive Officer. Such a request shall include an explanation of why the area should be excluded and photographs of the area. Any excluded area granted shall only apply to the monitoring requirement. The 500 ppmv limit specified in paragraph (d)(12) of Rule 1150.1 applies to all areas.

3.2 Equipment Description and Specifications

A portable FID shall be used to instantaneously measure the concentration of TOC measured as methane at any location on the landfill. The FID shall meet the

specifications listed in Sections 3.2.1 through 3.2.4 and shall be kept in good operating condition.

3.2.1 The portable analyzer shall meet the instrument specifications provided in Section 3 of U.S. EPA Method 21, except that:

3.2.1.1 "Methane" shall replace all references to VOC.

3.2.1.2 A response time of 15 seconds or shorter shall be used instead of 30 seconds.

3.2.1.3 A precision of 3% or better shall be used instead of 10%.

In addition the instrument shall meet the specifications in Sections 3.2.1.4 through 3.2.1.6.

3.2.1.4 A minimum detectable limit of 5 ppmv (or lower).

3.2.1.5 A flame-out indicator, audible and visual.

3.2.1.6 Operate at an ambient temperature of 0 - 50^{o} C.

3.2.2 The calibration gas shall be methane, diluted to a nominal concentration of 10,000 ppmv in air for subsurface refuse boundary probe monitoring and sample analysis to comply with paragraph (e)(1) of Rule 1150.1, 25 ppmv in air for integrated sample analyses to comply with paragraph (e)(2) of Rule 1150.1 and 500 ppmv in air for instantaneous monitoring to comply with paragraph (e)(3) of Rule 1150.1.

3.2.3 To meet the performance evaluation requirements in Section 3.1.3 of U.S. EPA Method 21, the instrument evaluation procedures of Section 4.4 of U.S. EPA Method 21 shall be used.

3.2.4 The calibration procedures provided in Section 4.2 of U.S. EPA Method 21 shall be followed at the beginning of each day before commencing a surface monitoring survey.

3.3 Monitoring Procedures

3.3.1 The owner or operator shall monitor the landfill disposal area for TOC measured as methane using the described portable equipment.

3.3.2 The sampling probe shall be placed at a distance of 0-3 inches above any location of the landfill to take the readings.

3.3.3 At a minimum, an individually identified 50,000 square foot grid shall be used and a walk pattern similar to that illustrated in Figure 2 shall be implemented including areas where visual observations indicate elevated

concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover.

3.4 Recording the Results

3.4.1 Record the location and concentration of TOC measured as methane for any instantaneous reading of 200 ppmv or greater on a topographic map of the landfill, drawn to scale with the location of both the grids and the gas collection system clearly marked and identified.

3.4.2 Maintain and submit the results as specified in subdivision (f) of Rule 1150.1.

4.0 LANDFILL GAS SAMPLE FROM GAS COLLECTION SYSTEM Paragraph (e)(5) Requirement of Rule 1150.1

4.1 Number of Samples

Collect one monthly sample of landfill gas for analysis from the main gas collection header line entering the gas treatment and/or gas control system(s).

4.2 Sampling Procedure

Collect approximately a 10-liter sample in a Tedlar bag or equivalent container over a continuous ten-minute period.

4.3 Analytical Procedures

Samples collected shall be analyzed no later than 72 hours after collection for TOC using U.S. EPA Method 25, 40 CFR, Part 60, Appendix A analysis and for the TAC specified in Table 1 and upon written request, Table II, using U.S. EPA Compendium Method TO-14.

4.4 Chain of Custody (Required for samples sent to the lab)

A custody sheet shall accompany the bag samples. Each time a bag changes hands, it shall be logged on the custody sheet with the time of custody transfer recorded. Laboratory personnel shall record the condition of the sample (full, three-fourths full, one-half full, one-fourth full, or empty). An example of a custody sheet is shown in Figure 4.

4.5 Recording the Results

4.5.1 Record the volume concentration of both TOC measured as methane and the volume concentration for the required TAC on a quality control sheet as shown in Figure 3. Include a topographic map drawn to scale with the

location of the gas collection and gas control systems clearly marked and identified.

4.5.2 Maintain and submit the results as specified in subdivision (f) of Rule 1150.1.

5.0 AMBIENT AIR SAMPLES AT THE LANDFILL PROPERTY BOUNDARY

Paragraph (e)(6) Requirement of Rule 1150.1

5.1 Number of Samples

Monthly ambient air samples shall be collected for analysis at the landfill property boundary from both an upwind and downwind sampler sited to provide good meteorological exposure to the predominant offshore (drainage land breeze) and onshore (sea breeze) wind flow patterns. The upwind and downwind samples shall be collected simultaneously over two 12 hour periods beginning between 9:00 a.m. and 10:00 a.m., and 9:00 p.m. and 10:00 p.m. on the same day or different days.

5.2 Ambient Air Sampling Conditions

Ambient air sampling shall be conducted on days when stable (offshore drainage) and unstable (onshore sea breeze) meteorological conditions are representative for the season. Preferable sampling conditions are characterized by the following meteorological conditions:

5.2.1 Clear cool nights with wind speeds of two miles per hour or less, and

5.2.2 Onshore sea breezes with wind speeds ten miles per hour or less.

No sampling will be conducted if the following adverse meteorological conditions exist:

5.2.3 Rain,

5.2.4 Average wind speeds greater than 15 miles per hour for any 30-minute period, or

5.2.5 Instantaneous wind speeds greater than 25 miles per hour.

Continuously recorded on-site wind speed and direction measurements required in paragraph (d)(17) of Rule 1150.1 will characterize the micrometeorology of the site and serve to verify that the meteorological criteria have been met during sampling.

5.3 Ambient Air Sampler Equipment Description

An ambient air sampling unit consists of a 10-liter Tedlar bag, a DC-operated pump, stainless steel capillary tubing to control the sample rate to the bag, a bypass valve to control the sample flow rate (and minimize back pressure on the pump), a Rotameter for flow indication to aid in setting the flow, a 24-hour clock timer to shut off the sampler at the end of the 24-hour sampling period, and associated tubing and connections (made of stainless steel, Teflon, or borosilicate glass to minimize contamination and reactivity). The physical layout of the sampler is shown in Figure 5.

An alternate ambient air sampler may be used, provided that the landfill owner or operator can show an equivalency with the sampler specifications in Section 5.3 and shown in Figure 5. All alternatives shall be submitted as specified in subdivision (i) of Rule 1150.1.

5.4 Ambient Air Sampler Equipment Specifications

The equipment used when conducting air samples at any landfill property boundary shall meet the following specifications:

5.4.1 Power: one 12V DC marine battery. The marine battery provides 12V DC to the pump and the clock.

5.4.2 Pump: one 12V DC pump. The diaphragm shall be made of non-lubricated Viton rubber. The maximum pump unloaded flow rate shall be 4.5 liters per minute.

5.4.3 Bag: One 10-liter Tedlar bag with a valve. The Tedlar bag shall be enclosed in a LIGHT-SEALED CONTAINER. The valve is a push-pull type constructed of aluminum and stainless steel, with a Viton or Buna-N (butadiene acrylonitrile co-polymer) o-ring seal.

5.4.4 Rotameter: made of borosilicate glass and has a flow range of 3-to-50 cubic centimeters per minute. The scale is in millimeters (mm) with major graduations (labeled) every 5 mm and minor graduations every 1 mm.

5.4.5 Air flow control orifice: 316 stainless steel capillary tubing.

5.4.6 Bypass valve.

5.4.7 Fittings, tubing, and connectors: 315 stainless steel or Teflon.

5.4.8 Clock timer with an accuracy of better than 1%.

5.5 Ambient Air Sample Analytical Procedures

Samples collected must be analyzed no later than 72 hours after collection for TOC using U.S. EPA Method 25, 40 CFR, Part 60, Appendix A analysis or a portable FID that meets the requirements in Section 3.2 and for the TAC specified in Table 1 and upon written request, Table II, using U.S. EPA Compendium Method TO-14.

5.6 Chain of Custody (Required for samples sent to the lab)

A custody sheet shall accompany the bag samples. Each time a bag changes hands, it shall be logged on the custody sheet with the time of custody transfer recorded. Laboratory personnel shall record the condition of the sample (full, three-fourths full, one-half full, one-fourth full, or empty). An example of a custody sheet is shown in Figure 4.

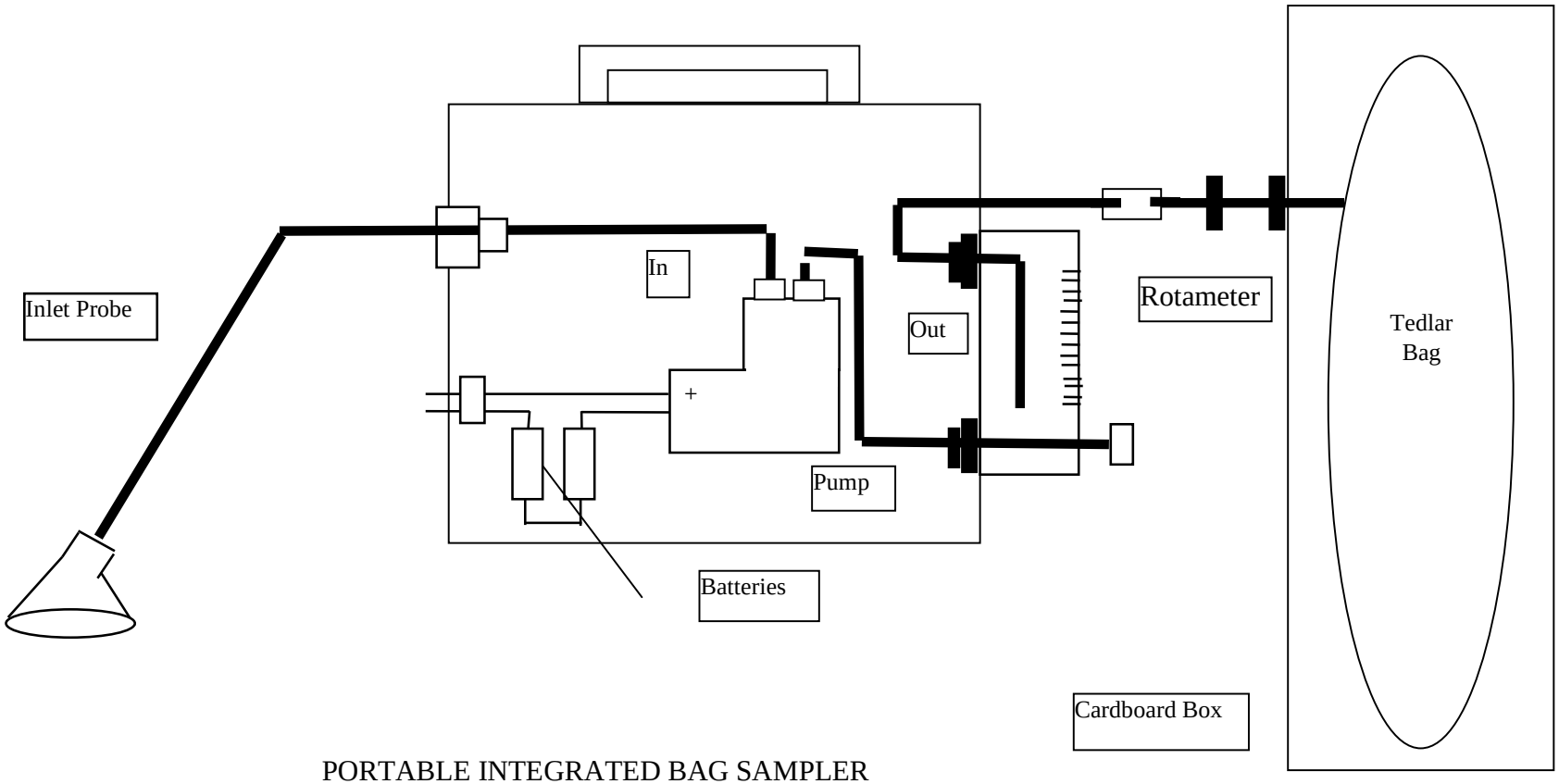
5.7 Recording the Results

5.7.1 Record the volume concentration of TOC measured as methane and the volume concentration of TAC for each sample on a quality control sheet as shown in Figure 3. Include a topographic map drawn to scale with the location of both the upwind and downwind samplers and the gas collection and gas control systems clearly marked and identified.

5.7.2 Record the wind speed and direction during the 24-hour sampling period using the wind speed and direction monitoring system required in paragraph (d)(17) of Rule 1150.1.

5.7.3 Maintain and submit the results as specified in subdivision (f) of Rule 1150.1.

Rule 1150.1 (Cont.) **(Amended April 1, 2011)**
(Attachment A Continued)



PORTABLE INTEGRATED BAG SAMPLER
Physical Layout

Figure 1

Rule 1150.1 (Cont.) **(Amended April 1, 2011)**
(Attachment A Continued)

Typical Landfill Walk Pattern
for a 50,000 Square Foot Grid

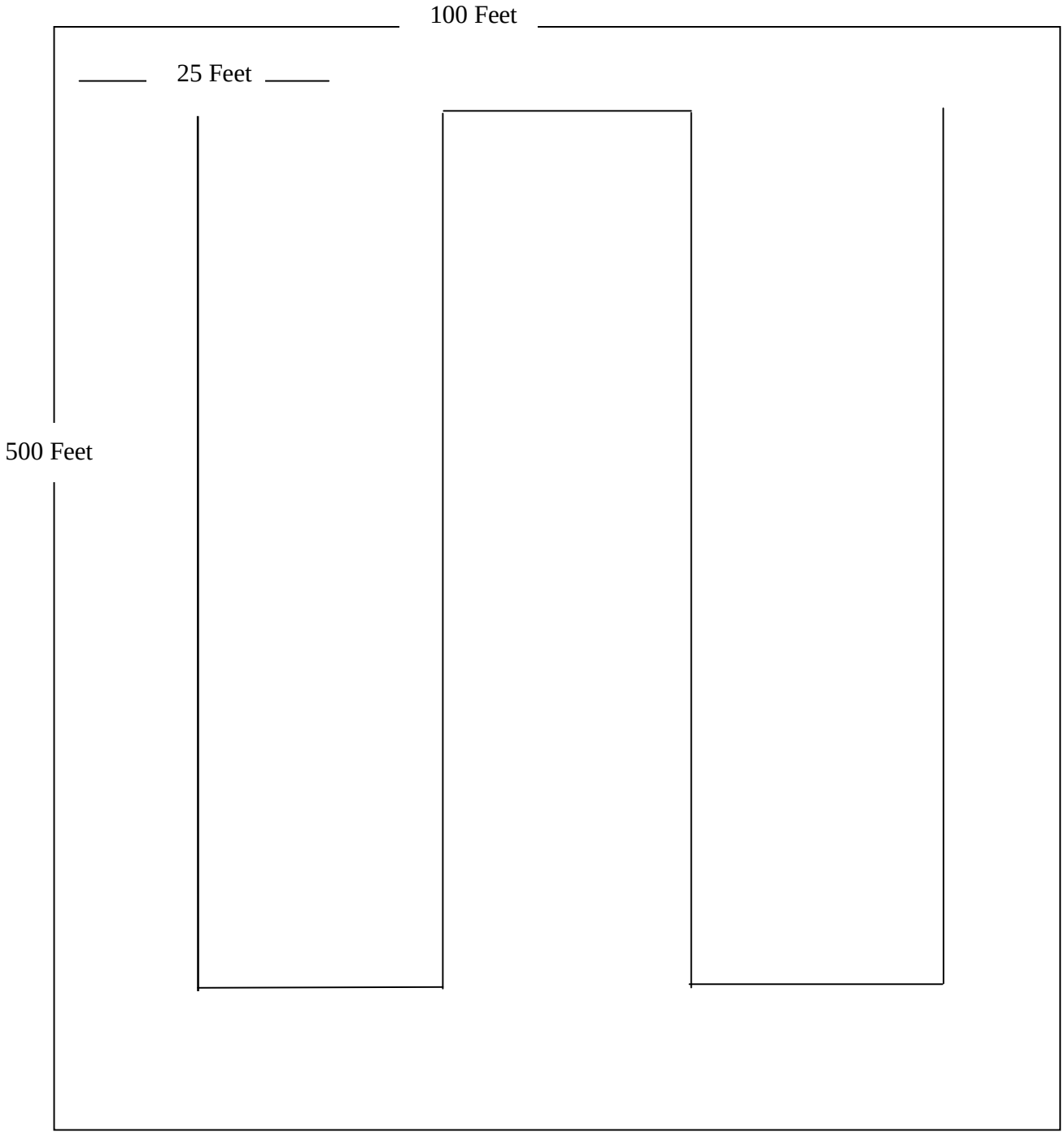


Figure 2

TYPICAL QUALITY CONTROL SHEET

- Prior to use, the Tedlar bag system shall be leak checked, evacuated and filled with purified nitrogen three times to flush out the old sample.
- All samples must be kept in LIGHT-SEALED CONTAINERS to avoid photochemical reactions.

OPERATION					BAG SAMPLES				COMMENTS
Grid or probe #	Date	Wind Speed	Time On	Time Off	I.D.#	Valve Open	Rotameter Reading	Pump (On/Off)	
Signature:									

Figure 3

BAG SAMPLE CUSTODY FORM

Project _____ Date: _____

Bag (I.D. #)									
Condition Received in Lab*									

Bags Prepared By: _____ Time: _____
Date: _____
Bags Taken Out By: _____ Time: _____
Bags Taken to Lab By _____
Bags Received In Lab By: _____ Time _____

* F = 1/2 full to full, 0 = Overfull (Bulging), L = 1/4 to 1/2 full,
E = Less than 1/4 full but contains some sample, N = No sample at all.

Figure 4

Rule 1150.1 (Cont.) **(Amended April 1, 2011)**
(Attachment A Continued)

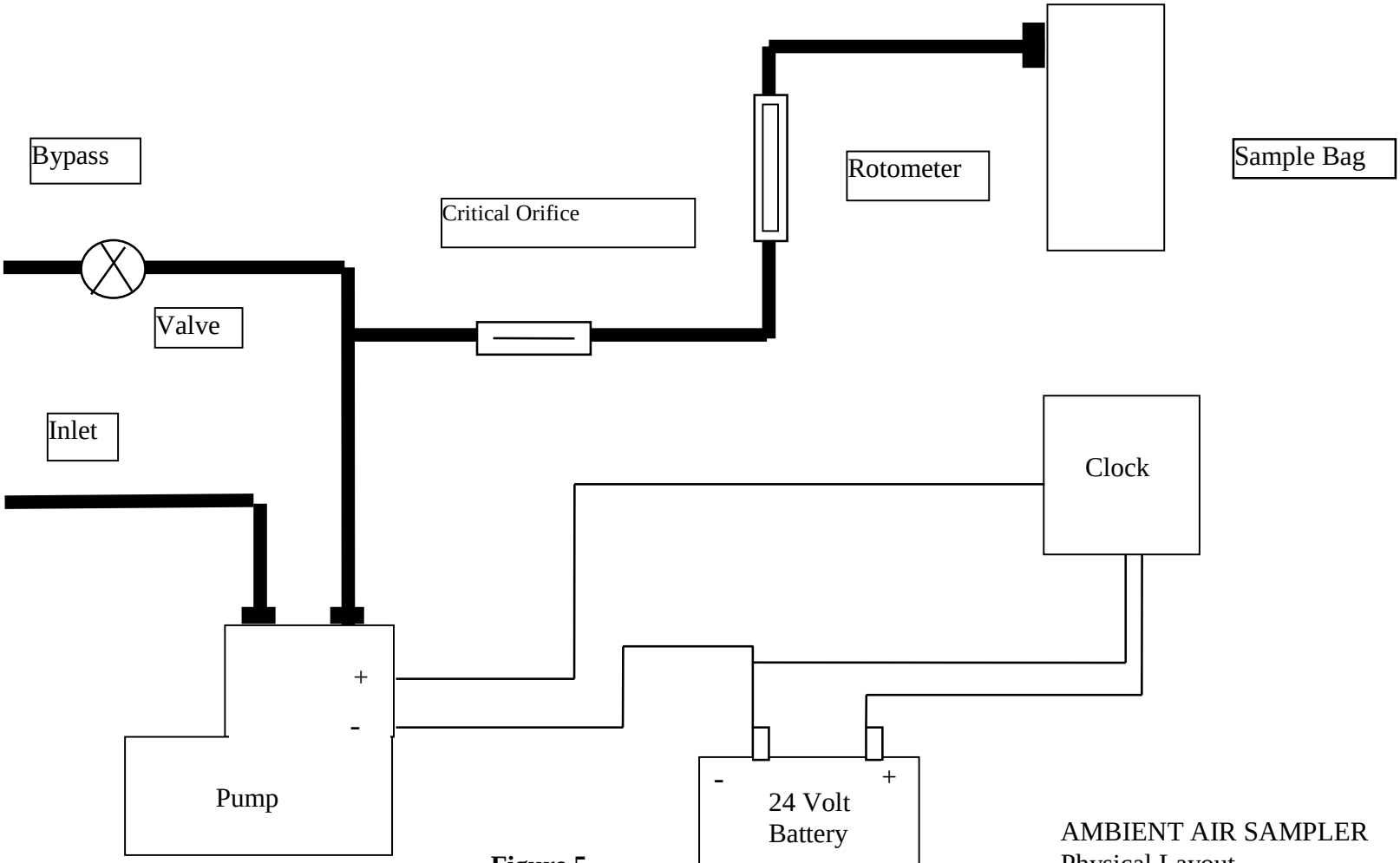


Figure 5

AMBIENT AIR SAMPLER
Physical Layout

TABLE 1 - CARCINOGENIC AND TOXIC AIR CONTAMINANTS (Core Group)

Paragraph (e)(2), Subparagraphs (k)(3)(F) and (k)(3)(G) Requirements of Rule 1150.1

1.	Benzene	C_6H_6
2.	Benzyl Chloride	$C_6H_5H_2C1$
3.	Chlorobenzene	C_6H_5C1
4.	1,2 Dibromoethane (Ethylene Dibromide)	$BrCH_2CH_2Br$
5.	Dichlorobenzene	$C_6H_4C1_2$
6.	1,1 Dichloroethane (Ethylidene Chloride)	CH_3CHC1_2
7.	1,2 Dichloroethane (Ethylene Dichloride)	$C1H_2H_2C1$
8.	1,1 Dichloroethene (Vinylidene Chloride)	$CH_2 : CC1_2$
9.	Dichloromethane (Methylene Chloride)	CH_2C1_2
10.	Hydrogen Sulfide	H_2S
11.	Tetrachloroethylene (Perchloroethylene)	$C1_2C : CC1_2$
12.	Tetrachloromethane (Carbon Tetrachloride)	$CC1_4$
13.	Toluene	$C_6H_5CH_3$
14.	1,1,1 Trichloroethane (Methyl Chloroform)	CH_3CC1_3
15.	Trichloroethylene	$CHC1 : CC1_2$
16.	Trichloromethane (Chloroform)	$CHC1_3$
17.	Vinyl Chloride	$CH_2 : CHC1$
18.	Xylene	$C_6H_4(CH_3)_2$

TABLE 2 - CARCINOGENIC AND TOXIC AIR CONTAMINANTS
(Supplemental Group)
Paragraph (e)(2), Subparagraphs (k)(3)(F) and (k)(3)(G) Requirements of Rule 1150.1

1.	Acetaldehyde	CH3CHO
2.	Acrolein	CH2CHCHO
3.	Acrylonitrile	H2C : CHCN
4.	Allyl Chloride	H2C : CHCH2C1
5.	Bromomethane (Methyl Bromide)	CH3Br
6.	Chlorinated Phenols	
7.	Chloroprene	H2C : CHCC1 : CH2
8.	Cresol	CH3C6H4OH
9.	Dialkyl Nitrosamines	
10.	1,4 - Dioxane	OCH2CH2OCH2CH2
11.	Epichlorohydrin	CH2OCHCH2C1
12.	Ethylene Oxide	CH2CH2O
13.	Formaldehyde	HCHO
14.	Hexachlorocyclopentadiene	C5C16
15.	Nitrobenzene	C6H5NO2
16.	Phenol	C6H5OH
17.	Phosgene	COC12
18.	Polychlorinated Dibenzo-P-Dioxin	
19.	Polychlorinated Dibenzo Furan	
20.	Polychlorinated Biphenols	
21.	Polynuclear Aromatic Hydrocarbons	
22.	Propylene Oxide	CH2-CH-CH3
23.	Tetrahydrothiophene	CH2CH2CH2CH2S
24.	Thiophene	CHCHCHCHS

Attachment B

TITLE 27. Environmental Protection

Division 2. Solid Waste

Subdivision 1. Consolidated Regulations for Treatment, Storage, Processing or Disposal of Solid

Chapter 3. Criteria for All Waste Management Units, Facilities, and Disposal Sites

Subchapter S. Closure and Post-Closure Maintenance

Article 2. Closure and Post-Closure Maintenance Standards for Disposal Sites and Landfills

§21140. Section CIWMB -- Final Cover. (Tl4:§17773)

(a) The final cover shall function with minimum maintenance and provide waste containment to protect public health and safety by controlling at a minimum, vectors, fire, odor, litter and landfill gas migration. The final cover shall also be compatible with postclosure land use.

(b) In proposing a final cover design meeting the requirements under §21090, the owner or operator shall assure that the proposal meets the requirements of this section. Alternative final cover designs shall meet the performance requirements of ¶(a) and for MSWLF units, 40 CFR 258.60(b); shall be approved by the enforcement agency for aspects of ¶(a).

(c) The EA may require additional thickness, quality, and type of final cover depending on, but not limited to the following:

(1) a need to control landfill gas emissions and fires;

(2) the future reuse of the site; and

(3) provide access to all areas of the site as needed for inspection of monitoring and control facilities, etc.

NOTE

Authority cited: Sections 40502 and 43020, Public Resources Code; and Section 66796.22 (d), Government Code. Reference: Sections 43021 and 43103, Public Resources Code; and Section 66796.22(d), Government Code.

HISTORY

1. New section filed 6-18-97; operative 7-18-97 (Register 97, No. 25).

Attachment C

TITLE 27. Environmental Protection

Division 2. Solid Waste

Subdivision 1. Consolidated Regulations for Treatment, Storage, Processing or Disposal of Solid

Chapter 3. Criteria for All Waste Management Units, Facilities, and Disposal Sites

Subchapter 2. Siting and Design

Article 2. SWRCB -- Waste Classification and Management

§20200. SWRCB -- Applicability and Classification Criteria. (CI5: §2520)

(a) Concept--This article contains a waste classification system which applies to solid wastes that cannot be discharged directly or indirectly to waters of the state and which therefore must be discharged to waste management units (Units) for treatment, storage, or disposal in accordance with the requirements of this division. Wastes which can be discharged directly or indirectly *(e.g., by percolation)* to waters of the state under effluent or concentration limits that implement applicable water quality control plans *(e.g., municipal or industrial effluent or process wastewater)* are not subject to the SWRCB-promulgated provisions of this division. This waste classification system shall provide the basis for determining which wastes may be discharged at each class of Unit. Waste classifications are based on an assessment of the potential risk of water quality degradation associated with each category of waste.

(1) The waste classifications in this article shall determine where the waste can be discharged unless the waste does not consist of or contain municipal solid waste (MSW) and the discharger establishes to the satisfaction of the RWQCB that a particular waste constituent or combination of constituents presents a lower risk of water quality degradation than indicated by classification according to this article.

(2) Discharges of wastes identified in §20210 or §20220 of this article shall be permitted only at Units which have been approved and classified by the RWQCB in accordance with the criteria established in Article 3 of this subchapter, and for which WDRs have been prescribed or waived pursuant to Article 4, Subchapter 3, Chapter 4 of this subdivision (§21710 et seq.). Table 2.1 (of this article) presents a summary of discharge options for each waste category.

(b) Dedicated Units/Cells For Certain Wastes--The following wastes shall be discharged only at dedicated Units [or dedicated landfill cells *(e.g., ash monofill cell*)] which are designed and constructed to contain such wastes:

(1) wastes which cause corrosion or decay, or otherwise reduce or impair the integrity of containment structures;

(2) wastes which, if mixed or commingled with other wastes can produce a violent reaction (including heat, pressure, fire or explosion), can produce toxic byproducts, or can produce any reaction product(s) which:

(A) requires a higher level of containment;

(B) is a restricted waste; or

(C) impairs the integrity of containment structures.

(c) Waste Characterization--Dischargers shall be responsible for accurate characterization of wastes, including determinations of whether or not wastes will be

compatible with containment features and other wastes at a Unit under ¶(b), and whether or not wastes are required to be managed as hazardous wastes under Chapter 11 of Division 4.5 of Title 22 of this code.

(d) Management of Liquids at Landfills and Waste Piles--The following requirements apply to discharges of liquids at Class II waste piles and at Class II and Class III landfills, except as otherwise required for MSW landfills by more-stringent state and federal requirements under SWRCB Resolution No. 93-62 section 2908 of Title 23 of this Code (see 40CFR258.28) *[Note: see also definitions of "leachate" and "landfill gas condensate"* in §20164*]:*

(1) [Reserved.];

(2) wastes containing free liquids shall not be discharged to a Class II waste pile. Any waste that contains liquid in excess of the moisture-holding capacity of the waste in the Class II landfill, or which contains liquid in excess of the moisture-holding capacity as a result of waste management operations, compaction, or settlement shall only be discharged to a surface impoundment or to another Unit with containment features equivalent to a surface impoundment; and

(3) liquids or semi-solid waste (i.e., waste containing less than 50 percent solids, by weight), other than dewatered sewage or water treatment sludge as described in §20220(c), shall not be discharged to Class III landfills. Exceptions may be granted by the RWQCB if the discharger can demonstrate that such discharge will not exceed the moisture-holding capacity of the landfill, either initially or as a result of waste management operations, compaction, or settlement, so long as such discharge is not otherwise prohibited by applicable state or federal requirements.

4/7/15

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted July 8, 1988)(Amended May 5, 1989)(Amended March 2, 1990)
(Amended June 28, 1990)(Amended November 2, 1990)(Amended December 7, 1990)
(Amended August 2, 1991)(Amended September 6, 1991)
(Amended December 9, 1994)(Amended March 8, 1996)
(Amended June 13, 1997)(Amended December 11, 1998)(Amended December 2, 2005)
(Amended September 5, 2014)

RULE 1151. MOTOR VEHICLE AND MOBILE EQUIPMENT NON-ASSEMBLY LINE COATING OPERATIONS

(a) Purpose

The purpose of this rule is to reduce volatile organic compound (VOC) emissions, toxic air contaminants, stratospheric ozone-depleting compounds, and global-warming compound emissions from automotive coating applications performed on motor vehicles, mobile equipment, and associated parts and components.

(b) Applicability

This rule is applicable to any person who supplies, sells, offers for sale, markets, manufactures, blends, packages, repackages, possesses or distributes any automotive coating or associated solvent for use within the District, as well as any person who uses, applies, or solicits the use or application of any automotive coating or associated solvent within the District.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) ADHESION PROMOTER means any automotive coating, specifically labeled and formulated to be applied to uncoated plastic surfaces to facilitate bonding of subsequent automotive coatings, and on which, a subsequent automotive coating is applied.

(2) AEROSOL COATING PRODUCT means a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic/marking applications.

(3) ASSEMBLY LINE means an arrangement of industrial equipment and workers in which the product passes from one specialized operation to another until complete, by either automatic or manual means.

(4) ASSOCIATED PARTS AND COMPONENTS means structures, devices, pieces, modules, sections, assemblies, subassemblies, or elements of any

motor vehicle or mobile equipment that are designed to be a part of any motor vehicle or mobile equipment but which are not attached to any motor vehicle or mobile equipment at the time of the application of an automotive coating to such structure, device, piece, module, section, assembly, subassembly, or element. Associated parts and components do not include circuit boards.

(5) AUTOMOTIVE COATING means any coating used or recommended for use in motor vehicles, mobile equipment or associated parts and components in refinishing, service, maintenance, repair, restoration, or modification, except metal plating activities. Any reference to automotive refinishing or automotive coating on the container or in product literature constitutes a recommendation for use in motor vehicle, mobile equipment and associated parts and components refinishing.

(6) AUTOMOTIVE COATING COMPONENT means any portion of a coating, including, but not limited to, a reducer or thinner, toner, hardener, and additive, which is recommended for use in an automotive coating, or which is used in an automotive coating. The raw materials used to produce the components are not considered automotive coating components.

(7) AUTOMOTIVE GRAPHIC ARTS OPERATION means the application of logos, letters, designs, numbers, or graphics to a painted surface by brush, roller or airbrush.

(8) AUTOMOTIVE REFINISHING FACILITY means any shop, business, location, or parcel of land where motor vehicles or mobile equipment or their associated parts and components are coated, including autobody collision repair shops. Automotive refinishing facility does not include the original equipment manufacturing plant where the motor vehicle or mobile equipment is completely assembled.

(9) CLEAR COATING means any automotive coating that is formulated with materials that do not impart color and is specifically labeled and formulated for application over a color coating or clear coating.

(10) COATING means a material which is applied to a surface and forms a film in order to beautify, preserve, repair, or protect such a surface.

(11) COLOR COATING means any pigmented automotive coating, excluding automotive adhesion promoters, primers, and multi-color coatings, that require a subsequent clear coating and which is applied over a primer,

adhesion promoter or color coating. Color coatings include metallic/iridescent color coatings.

(12) ELECTROSTATIC SPRAY APPLICATION means any method of spray application of automotive coatings where an electrostatic attraction is created between the part to be coated and the paint particles.

(13) EMISSION CONTROL SYSTEM means any combination of capture systems and control devices used to reduce VOC emissions from automotive coating operations.

(14) EXEMPT COMPOUNDS are as defined in Rule 102-Definition of Terms.

(15) GRAMS OF VOC PER LITER OF COATING LESS WATER AND LESS EXEMPT COMPOUNDS, OR REGULATORY VOC, is the weight of VOC per combined volume of VOC and coating solids and shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters

(16) GRAMS OF VOC PER LITER OF MATERIAL, OR ACTUAL VOC, is the weight of VOC per volume of material and shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters

(17) HIGH-VOLUME, LOW-PRESSURE (HVLP) means spray application equipment designed to atomize 100 percent by air pressure only and is operated between 0.1 and 10 pounds per square inch, gauge, (psig) air

atomizing pressure measured dynamically at the center of the air cap and at the air horns.

(18) METALLIC/IRIDESCENT COLOR COATING means any automotive coating that contains more than 0.042 pounds per gallon (5 grams per liter) of metal or iridescent particles as applied, where such particles are visible in the dried film.

(19) MOBILE EQUIPMENT means any device that may be drawn and/or driven on rails or a roadway including, but not limited to, trains, railcars, truck trailers, mobile cranes, bulldozers, street cleaners, and implements of husbandry or agriculture.

(20) MOTOR VEHICLE means any self-propelled vehicle, including, but not limited to, motorcycles, passenger cars, light-duty trucks and vans, medium-duty and heavy-duty vehicles as defined in Section 1900, Title 13, of the California Administrative Code. Additional examples include, but are not limited to, buses, golf carts, tanks, and armored personnel carriers.

(21) MULTI-COLOR COATING means any automotive coating that exhibits more than one color in the dried film after a single application, is packaged in a single container, and hides surface defects on areas of heavy use, and which is applied over a primer or adhesion promoter.

(22) PRETREATMENT COATING means any automotive coating that contains a minimum of one-half (0.5) percent acid by weight and not more than 16 percent solids by weight necessary to provide surface etching and that is specifically labeled and formulated for application directly to bare metal surfaces to provide corrosion resistance and adhesion.

(23) PRIMER means any automotive coating that is specifically labeled and formulated for application to a substrate to provide 1) a bond between the substrate and subsequent coats, 2) corrosion resistance, 3) a smooth substrate surface, or 4) resistance to penetration of subsequent coats, and on which a subsequent coating is applied. Primers may be pigmented and include weld-through primers.

(24) SINGLE-STAGE COATING means any pigmented automotive coating, (excluding automotive adhesion promoters, primers and multi-color coatings), specifically labeled and formulated for application without a subsequent clear coating and that are applied over an adhesion promoter, a

primer, or a color coating. Single-stage coatings include single-stage metallic/iridescent coatings.

(25) SOLVENT CLEANING is as defined in Rule 1171 – Solvent Cleaning Operations.

(26) SPOT REPAIR means repair of an area on a motor vehicle, mobile equipment, or associated parts or components of less than one square foot (929 square centimeters).

(27) TEMPORARY PROTECTIVE COATING means any automotive coating specifically labeled and formulated for the purpose of temporarily protecting areas from overspray or mechanical damage.

(28) TRANSFER EFFICIENCY means the amount of coating solids adhering to the object being coated divided by the total amount of automotive coating solids sprayed, expressed as a percentage.

(29) TRUCK BED LINER COATING means any automotive coating, excluding color, multi-color, and single stage coatings, specifically labeled and formulated for application to a truck bed to protect it from surface abrasion.

(30) UNDERBODY COATING means any automotive coating specifically labeled and formulated for application to wheel wells, the inside of door panels or fenders, the underside of a trunk or hood, or the underside of the motor vehicle.

(31) UNIFORM FINISH COATING means any automotive coating specifically labeled and formulated for application to the area around a spot repair for the purpose of blending a repaired area's color or clear coat to match the appearance of an adjacent area's existing coating.

(32) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102-Definition of Terms. For the purpose of this rule, tertiary butyl acetate (TBAc) is not a VOC when used in automotive coatings other than color coatings and clear coatings.

The Executive Officer shall conduct a technical assessment on the use of TBAc as a non-VOC by December 31, 2016. In conducting the technical assessment, the Executive Officer shall consider all information available to the SCAQMD on TBAc including, toxicity, carcinogenic and health risk assessment studies. The Executive Office shall report to the Governing Board as to the appropriateness of maintaining TBAc as a non-VOC.

(33) WELD-THROUGH PRIMER means an automotive coating designed and labeled exclusively to provide a bridging or conducting effect for corrosion protection following welding.

(d) Requirements

(1) A person shall not apply any automotive coating to a motor vehicle, mobile equipment, or associated parts or components of a motor vehicle or mobile equipment that contains VOC in excess of the limits specified in the Table of Standards below. Compliance with the applicable VOC content limits shall be based on VOC content, including any material added to the original automotive coating supplied by the manufacturer, as applied, less water and exempt compounds.

TABLE OF STANDARDS

VOC CONTENT LIMITS Grams per Liter of Coating, Less Water and Less Exempt Compounds		
AUTOMOTIVE COATING CATEGORIES	**Current Limit**	
	g/L	Lb/Gal
Adhesion Promoter	540	4.5
Clear Coating	250	2.1
Color Coating	420	3.5
Multi-Color Coating	680	5.7
Pretreatment Coating	660	5.5
Primer	250	2.1
Single-Stage Coating	340	2.8
Temporary Protective Coating	60	0.5
Truck Bed Liner Coating	310	2.6
Underbody Coating	430	3.6
Uniform Finishing Coating	540	4.5
Any Other Coating Type	250	2.1

(2) Most Restrictive VOC Limit

If any representation or information on the container of any automotive coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature that indicates that the automotive coating meets the definition of or is recommended for use for more than

one of the automotive coating categories listed in paragraph (d)(1), then the lowest VOC content limit shall apply.

(3) Alternative Compliance

(A) Emission Control System

A person may comply with the provisions of paragraph (d)(1), by using an approved emission control system, consisting of collection and control devices, provided such emission control system is approved pursuant to Rule 203 – Permit to Operate, in writing, by the Executive Officer for reducing emissions of VOC. The Executive Officer shall approve such emission control system only if the VOC emissions resulting from the use of non-compliant automotive coatings will be reduced to a level equivalent to or lower than that which would have been achieved by the compliance with the terms of paragraph (d)(1). The required efficiency of an emission control system at which an equivalent or greater level of VOC emission reduction will be achieved shall be calculated by the following equation:

$$C.E. = \left[1 - \left\{ \frac{(VOC_{LWc})}{(VOC_{LWn,Max})} \times \frac{1 - (VOC_{LWn,Max}/D_{n,Max})}{1 - (VOC_{LWc}/D_c)} \right\}\right] \times 100$$

Where:

C.E. = Control Efficiency, percent

VOC_{LWc} = VOC Limit of Rule 1151, less water and less exempt compounds, pursuant to paragraph (d)(1).

$VOC_{LWn,Max}$ = Maximum VOC content of non-compliant automotive coating used in conjunction with a control device, less water and exempt compounds.

$D_{n,Max}$ = Density of VOC solvent, reducer, or thinner contained in the non-compliant automotive coating containing the maximum VOC.

D_c = Density of corresponding VOC solvent, reducer, or thinner used in the compliant automotive coating system = 880 g/L.

(B) Alternative Emission Control Plan

A person may comply with the provisions of paragraph (d)(1) by means of an Alternative Emissions Control Plan, pursuant to Rule 108 – Alternative Emissions Control Plans.

(4) Exempt Compounds

A person shall not manufacture, sell, offer for sale, distribute for use in the District, or apply any automotive coating which contains any Group II Exempt Compounds as defined in Rule 102.

(5) Carcinogenic Materials

A person shall not manufacture automotive coatings for use in the SCAQMD in which cadmium or hexavalent chromium was introduced as a pigment or as an agent to impart any property or characteristic to the automotive coatings during manufacturing, distribution, or use of the applicable automotive coatings.

(6) Transfer Efficiency

(A) A person shall not apply automotive coatings to any motor vehicle, mobile equipment or any associated parts or components to a motor vehicle or mobile equipment except by the use of one of the following methods:

(i) electrostatic application, or

(ii) high-volume, low-pressure (HVLP) spray, or

(iii) brush, dip, or roller, or

(iv) Spray gun application, provided the owner or operator demonstrates that the spray gun meets the HVLP definition in paragraph (c)(17) in design and use. A satisfactory demonstration must be based on the manufacturer's published technical material on the design of the spray gun and by a demonstration of the operation of the spray gun using an air pressure tip gauge from the manufacturer of the spray gun.

(v) Any such other automotive coating application methods as demonstrated, in accordance with the provisions of subparagraph (h)(1)(F), to be capable of achieving equivalent or better transfer efficiency than the automotive coating application method listed in clause (d)(6)(A)(ii),

provided written approval is obtained from the Executive Officer prior to use.

(B) A person shall not apply any automotive coating by any of the methods listed in subparagraph (d)(6)(A) unless the automotive coating is applied with properly operating equipment, operated according to procedures recommended by the manufacturer and in compliance with applicable permit conditions, if any.

(7) Solvent Cleaning, Storage and Disposal of VOC-Containing Materials

Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in cleaning operations shall be carried out pursuant to SCAQMD Rule 1171 – Solvent Cleaning Operations.

(e) Prohibition of Possession, Specification and Sale

(1) For the purpose of this rule, no person that applies automotive coatings subject to this rule shall possess any automotive coating that is not in compliance with requirements of paragraph (d)(1), unless one or more of the following conditions apply:

(A) The automotive coating is for use at a facility that utilizes an approved emission control device pursuant to subparagraph (d)(3)(A) and the coating meets the limits specified in permit conditions.

(B) The automotive coating is for use at a facility that operates in compliance with an approved Alternative Emissions Control Plan pursuant to subparagraph (d)(3)(B), and the automotive coating is specified in the plan.

(C) The automotive coating is for use at a training center and the automotive coating is used for educational purposes, provided that the VOC emissions from automotive coatings not meeting the VOC limits of paragraph (d)(1) do not exceed twelve (12) pounds per day.

(D) The automotive coating is for use at a prototype motor vehicle manufacturing facility and the automotive coating is supplied by an assembly-line motor vehicle manufacturer specifically for use in the refinishing of a prototype motor vehicle, provided that the VOC emissions from all automotive coatings not meeting the VOC

limits of paragraph (d)(1) do not exceed twenty-one (21) pounds per day and 930 pounds in any one calendar year.

(2) For the purpose of this rule, no person shall solicit from, specify, or require any other person to use in the District any automotive coating which, when applied as supplied or thinned or reduced according to the manufacturer's recommendation for application, does not meet the:

(A) Applicable VOC limits required by paragraph (d)(1) for the specific application unless:

(i) The automotive coating is located at a facility that utilizes an approved emission control device pursuant to subparagraph (d)(3)(A), and the automotive coating meets the limits specified in permit conditions; or,

(ii) The automotive coating is located at a facility that operates in compliance with an approved Alternative Emissions Control Plan pursuant to subparagraph (d)(3)(B), and the automotive coating is specified in the plan; or

(iii) The automotive coating is specifically exempt pursuant to subdivision (j) of this rule.

(B) The requirements of paragraphs (d)(4) and (d)(5).

(3) For the purpose of this rule, no person shall supply, sell, offer for sale, market, blend, package, repackage or distribute any automotive coating for use within the District subject to the provisions in this rule which, when applied as supplied or thinned or reduced according to the manufacturer's recommendation for application, does not meet the:

(A) Applicable VOC limits required by paragraph (d)(1) for the specific application, unless:

(i) The automotive coating is for use at a facility that utilizes an approved emission control device pursuant to subparagraph (d)(3)(A), and the coating meets the limits specified in permit conditions; or,

(ii) The automotive coating is specifically exempt under subdivision (j) of this rule; or,

(iii) The automotive coating is for use at a facility that operates in accordance with an approved Alternative Emissions Control Plan pursuant to subparagraph (d)(3)(B), and the automotive coating is specified in the plan; and,

(iv) The person that supplies, sells, offers for sale, markets, blends, packages, repackages or distributes the automotive coating keeps the following records for at least five years and makes them available to the Executive Officer upon request:

(I) Automotive coating name and manufacturer;

(II) Application method as recommended;

(III) Automotive coating category and mix ratio specific to the automotive coating;

(IV) VOC content of the automotive coating;

(V) Documentation such as manufacturer specification sheets, material safety data sheets, technical data sheets, or any other air quality data sheets that demonstrate that the material is intended for use as an automotive coating;

(VI) Current manufacturer specification sheets, material safety data sheets, technical data sheets, or air quality data sheets, which list the VOC content of each ready-to-spray automotive coating (based on the manufacturer's stated mix ratio) and automotive coating components and VOC content of each solvent; and

(VII) Purchase records identifying the automotive coating category, name, and volume of automotive coatings.

(VIII) In addition, for sale to an end-user, the name and address of the person receiving the automotive coating, an acknowledgement warranting that the sale to an end-user will comply with this paragraph, including if use is for outside the District, and acknowledgement by the purchaser that this statement is correct.

(B) The requirements of paragraphs (d)(4) and (d)(5).

(4) For the purpose of this rule, no person shall solicit from, specify, require, offer for sale, sell, or distribute to any other person for use in the District any automotive coating application equipment which does not meet the requirements of subparagraph (d)(6)(A).

(5) For the purpose of this rule, no person shall offer for sale, sell, supply, market, offer for sale or distribute an HVLP spray gun for use within the SCAQMD unless the person offering for sale, selling, marketing or distributing the HVLP spray gun for use within the SCAQMD provides accurate information to the spray gun recipient on the maximum inlet air pressure to the spray gun which would result in a maximum air pressure of 10 pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns based on the manufacturer's published technical material on the design of the spray application equipment and by a demonstration of the operation of the spray application equipment using an air pressure tip gauge from the manufacturer of the gun. The information shall either be permanently marked on the gun, or provided on the company's letterhead or in the form of technical literature which clearly identifies the spray gun manufacturer, the seller, or the distributor.

(6) For the purpose of this rule, the requirements of paragraphs (e)(1), (e)(2), (e)(3) or (e)(4) shall apply to all written or oral agreements executed and entered into under the terms of which an automotive coating or an automotive coating application equipment shall be used at any location within the District.

(f) Recordkeeping Requirements

(1) Recordkeeping for VOC Emissions

Records of automotive coating usage shall be maintained pursuant to SCAQMD Rule 109 – Recordkeeping for Volatile Organic Compound Emissions, and shall at a minimum include the following information:

(A) Material name and manufacturer;

(B) Application method;

(C) Automotive coating category and mix ratio specific to the coating;

(D) Actual VOC and regulatory VOC, for the automotive coating;

(E) Documentation such as manufacturer specification sheets, material safety data sheets, technical data sheets, or any other air quality data sheets that indicate the material is intended for use as an automotive coating or solvent;

(F) Current manufacturer specification sheets, material safety data sheets, technical data sheets, or air quality data sheets, which list

the actual VOC and regulatory VOC, for each ready-to-spray automotive coating (based on the manufacturer's stated mix ratio), automotive coating components, and the VOC content for each solvent; and,

(G) Purchase records identifying the automotive coating category, name, and the total volume of all coatings and solvents used.

(2) Recordkeeping Requirements for Emission Control System

Any person using an emission control system shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of VOC emission producing activities. "Key system operating parameters" are those parameters necessary to ensure or document compliance with subparagraph (d)(3)(A), including, but not limited to, temperatures, pressure drops, and air flow rates.

(g) Administrative Requirements for Automotive Coating Manufacturers

(1) Compliance Statement Requirement

For each individual automotive coating, automotive coating component, and ready to spray mixture (based on the manufacturers stated mix ratio), the manufacturer shall include the following information on a product data sheet, or an equivalent medium:

(A) The actual VOC and regulatory VOC for automotive coatings (in grams per liter);

(B) The weight percentage of volatiles, water, and exempt compounds; and;

(C) The density of the material (in grams per liter).

(2) Labeling Requirements

(A) The manufacturer of automotive coatings or automotive coating components, including hardeners, with the exception of solvents such as reducers and thinners, shall include on all containers the applicable use automotive coating category, and the actual VOC and regulatory VOC content, as supplied (in grams of VOC per liter of material and in grams of VOC per liter of material, less water and exempt compounds).

(B) The manufacturer of solvents, including reducers and thinners, subject to this rule shall include on all containers the actual VOC for solvents, as supplied (in grams of VOC per liter of material).

(h) Test Methods

(1) Methods of Analysis

For the purpose of this rule, the following test methods shall be used:

(A) VOC Content of Automotive Coatings

(i) United States Environmental Protection Agency (U.S. EPA) Reference Test Method 24, (Determination of Volatile Matter Content, Water Content, Volume Solids and Weight Solids of Surface Coatings, Code of Federal Regulations, Title 40 Part 60, Appendix A). The exempt compounds' content shall be determined by South Coast Air Quality Management District (SCAQMD) Laboratory Test Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Method of Analysis for Enforcement Samples" manual; or

(ii) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Method of Analysis for Enforcement Samples" manual.

(B) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;
cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

shall be analyzed as exempt compounds for compliance with paragraph (d)(1), only at such time as manufacturers specify which individual compounds are used in the formulation of the automotive coatings and identify the test methods, which have been approved by the U.S. EPA, CARB and the SCAQMD prior to

such analysis, that can be used to quantify the amounts of each exempt compound.

(C) Determination of Iridescent Particles in Metallic/Iridescent Coatings

The metal and silicon content of metallic/iridescent coatings shall be determined by SCAQMD Method 311 (Determination of Percent Metal in Metallic Coatings by Spectrographic Method) contained in the SCAQMD "Laboratory Method of Analysis for Enforcement Samples" manual.

(D) Acid Content in Pretreatment Automotive Coatings

The acid content of pretreatment automotive coatings shall be determined by ASTM Test Method D1613-06 (2012) (Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and related products).

(E) Reflectance of Anti-Glare Safety Automotive Coatings

The reflectance of anti-glare safety automotive coatings shall be determined by ASTM Test Method D-523-08 (Specular Gloss).

(F) Transfer Efficiency

The transfer efficiency of alternative automotive coating application methods, as defined by clause (d)(6)(A)(v), shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989," and SCAQMD "Guidelines for Demonstrating Equivalency With District Approved Transfer Efficiency Spray Gun September 26, 2002."

(G) Equivalent Test Methods

Other test methods determined to be equivalent by the Executive Officer, CARB, and the U.S. EPA, and approved in writing by the Executive Officer may also be used.

(2) Determination of Efficiency of Emission Control Systems

(A) The efficiency of the collection device of an emission control system as specified in subparagraph (d)(3)(A) shall be determined by the methods specified below:

(i) U.S. EPA method cited in 55 Federal Register (FR) 26865, June 29, 1990; or

(ii) SCAQMD's "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency"; or

(iii) Any other method approved by the U.S. EPA, CARB, and the District Executive Officer.

(B) The efficiency of the control device of an emission control system as specified in subparagraph (d)(3)(A) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. U.S. EPA Test Method 18, or CARB Method 422 shall be used to determine emissions of exempt compounds.

(3) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(i) Rule 442 Applicability

Any automotive coating, automotive coating operation or facility which is exempt pursuant to subdivision (j) from all or a portion of the VOC limits of subdivision (d) shall comply with the provisions of Rule 442 – Usage of Solvents.

(j) Exemptions

(1) This rule shall not apply to:

(A) Any automotive coating applied to motor vehicles or mobile equipment, or their associated parts and components, during manufacture on an assembly line that is subject to Rule 1115 - Motor Vehicle Assembly Line Coating Operations;

(B) Any automotive coating that is expressly offered for sale, sold, or manufactured for use outside of the District or that is for shipment to other manufacturers for reformulation or repackaging;

(C) Any aerosol coating product; and

(D) Any automotive coating that is supplied, sold, offered for sale, marketed, manufactured, blended, packaged or repackaged for use in the District in 0.5 fluid ounces or smaller containers.

(2) The requirements of paragraph (d)(1) shall not apply to automotive coatings applied for educational purposes at automotive coating training centers, which are owned and operated by automotive coating manufacturers, provided that the VOC emissions emitted at a automotive coating training center from automotive coatings not complying with paragraph (d)(1) do not exceed twelve (12) pounds per day.

(3) The requirements of paragraph (d)(1) shall not apply to automotive coatings supplied by an assembly-line motor vehicle manufacturer for use by a prototype motor vehicle manufacturing facility in the finishing of a prototype motor vehicle, provided that the VOC emissions at the prototype motor vehicle manufacturing facility from such topcoats do not exceed 21 pounds in a calendar day and 930 pounds in a calendar year.

(4) The requirements of subparagraph (d)(6)(A) shall not apply to automotive graphic arts operations, truck bed liner coatings, or underbody coatings.

SOUTH COAST
2/24/95

2-24-95

(Adopted January 4, 1991)(Amended January 13, 1995)

RULE 1153. COMMERCIAL BAKERY OVENS

(a) Applicability

This rule controls volatile organic compound (VOC) emissions from commercial bakery ovens with a rated heat input capacity of 2 million BTU per hour or more and with an average daily emission of 50 pounds or more of VOC.

(b) Definitions

For the purpose of this rule the following definitions shall apply:

(1) AVERAGE DAILY EMISSIONS is the product of the total calendar year emissions (in tons/year) divided by the number of days the oven was employed for production during that year.

(2) BAKERY OVEN is an oven for baking bread or any other yeast leavened products by convection.

(3) BASE YEAR is the calendar 1989 or any subsequent calendar year in which the average daily emissions are 50 pounds or more per day.

(4) EMISSIONS are any VOC formed and released from the oven as a result of the fermentation and baking processes of yeast leavened products.

(5) EXEMPT COMPOUNDS are any of the following compounds which have been determined to be non-precursors of ozone:

(A) Group I (General)

chlorodifluoromethane (HCFC-22)
dichlorotrifluoroethane (HCFC-123)
tetrafluoroethane (HFC-134a)
dichlorofluoroethane (HCFC-141b)
chlorodifluoroethane (HCFC-142b)
trifluoromethane (HFC-23)
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)
pentafluoroethane (HFC-125)
1,1,2,2-tetrafluoroethane (HFC-143)
1,1,1-trifluoroethane (HFC-143a)
1,1-difluoroethane (HFC-152a)
cyclic, branched, or linear, completely fluorinated alkanes
cyclic, branched, or linear, completely fluorinated ethers with no unsaturations

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations
sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

(B) Group II

methylene chloride
1,1,1-trichloroethane (methyl chloroform)
trichlorotrifluoroethane (CFC-113)
dichlorodifluoromethane (CFC-12)
trichlorofluoromethane (CFC-11)
dichlorotetrafluoroethane (CFC-114)
chloropentafluoroethane (CFC-115)

The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, production of chlorofluorocarbons (CFC), 1,1,1-trichloroethane (methyl chloroform), and carbon tetrachloride will be phased out in accordance with the Code of Federal Regulation Title 40, Part 82 (December 10, 1993).

(6) EXISTING OVEN is an oven that was constructed and commenced operation prior to January 1, 1991.

(7) FERMENTATION TIME is the elapsed time between adding yeast to the dough or sponge and placing it into the oven, expressed in hours.

(8) LEAVEN is to raise a dough by causing gas to permeate it.

(9) VOLATILE ORGANIC COMPOUNDS (VOC) is any volatile compound containing the element carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, methane, and exempt compounds.

(10) YEAST PERCENTAGE is the pounds of yeast per hundred pounds of total recipe flour, expressed as a percentage.

(c) Requirements

(1) No person shall operate an existing bakery oven unless VOC emissions are reduced by at least:

(A) 70 percent by weight (as carbon) for an oven with a base year average daily VOC emissions of 50 pounds or more, but less than 100 pounds.

(B) 95 percent by weight (as carbon) for an oven with a base year average daily VOC emissions of 100 pounds or more.

(2) No person shall operate a new bakery oven unless VOC emissions are reduced by at least 95 percent by weight (as carbon) if the uncontrolled average daily VOC emissions are 50 pounds or more.

(d) Compliance Schedule

No person shall operate a bakery oven subject to this rule unless the following increments of progress are met:

(1) For bakery ovens subject to subparagraph (c)(1)(A):

(A) By January 1, 1992, submit required applications for permits to construct and operate.

(B) By July 1, 1993, demonstrate compliance with subparagraph (c)(1)(A).

(2) For bakery ovens subject to subparagraph (c)(1)(B):

(A) By January 1, 1993, submit required applications for permits to construct and operate.

(B) By July 1, 1994, demonstrate compliance with subparagraph (c)(1)(B).

(3) For bakery ovens subject to paragraph (c)(2) be in compliance by July 1, 1992 or by the date of installation, whichever is later.

(e) Alternate Compliance Schedule

The paragraph (d)(1) and (d)(2) compliance deadlines may be postponed by one year if the owner of a bakery oven elects to replace the existing oven with a new one. Such election must be made by January 1, 1992 via a compliance plan submitted to, and subject to approval of, the Executive Officer or his designee. In approving such an election, the Executive Officer may impose interim conditions or control measures on the existing oven in order to assure compliance pending the installation or construction of the new, replacement oven.

(f) Exemptions

The provisions of subdivisions (c) and (d) do not apply to any existing bakery oven that emits less than 50 pounds of VOC per operating day on an uncontrolled basis. Daily VOC emissions shall be determined according to the calculation procedures of Attachment A, or according to any test methods specified in subdivision (h).

(g) Recordkeeping Requirements

Any person operating a bakery oven subject to this rule and claiming an exemption under subdivision (f) shall maintain a daily record of operations, including, but not limited to, the amount of raw material processed, yeast percentage, fermentation time, and the type of product baked. Such records shall be retained in the owner's or operator's files for a period of not less than two years.

(h) Determination of Efficiency of Emission Control System

(1) USEPA Test Method 25, or SCAQMD Test Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) shall be used to determine compliance with this rule. Other test methods reviewed by the staffs of the SCAQMD, California Air Resources Board, and the USEPA, and approved in writing by the District Executive Officer may also be used to determine the efficiency of the emission control system.

(2) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(3) All test methods referenced in this section shall be the most recent approved version.

SOUTHCOAST

ATTACHMENT A

Yt*	Pounds VOC/ton Bakery Product	Yt*	Pounds VOC/ton Bakery Product
1.0	0.8488	16.0	7.5176
1.5	1.0711	16.5	7.7399
2.0	1.2934	17.0	7.9622
2.5	1.5157	17.5	8.1845
3.0	1.7380	18.0	8.4068
3.5	1.9603	18.5	8.6291
4.0	2.1826	19.0	8.8514
4.5	2.4049	19.5	9.0737
5.0	2.6272	20.0	9.2959
5.5	2.8495	20.5	9.5182
6.0	3.0718	21.0	9.7405
6.5	3.2941	21.5	9.9628
7.0	3.5163	22.0	10.1851
7.5	3.7386	22.5	10.4074
8.0	3.9609	23.0	10.6297
8.5	4.1832	23.5	10.8520
9.0	4.4055	24.0	11.0743
9.5	4.6278	24.5	11.2966
10.0	4.8501	25.0	11.5189
10.5	5.0724	25.5	11.7412
11.0	5.2947	26.0	11.9635
11.5	5.5170	26.5	12.1857
12.0	5.7393	27.0	12.4080
12.5	5.9616	27.5	12.6303
13.0	6.1839	28.0	12.8526
13.5	6.4061	28.5	13.0749
14.0	6.6284	29.0	13.2972
14.5	6.8507	29.5	13.5195
15.0	7.0730	30.0	13.7418
15.5	7.2953		

* Yt = (yeast percentage) x (fermentation time)
If yeast is added in 2 steps, Yt = (initial yeast percentage) (total fermentation time) + (remaining Yeast percentage) (remaining fermentation time)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted November 7, 2014)

RULE 1153.1 EMISSIONS OF OXIDES OF NITROGEN FROM COMMERCIAL FOOD OVENS

(a) Purpose and Applicability

The purpose of this rule is to reduce nitrogen oxide emissions from gaseous and liquid fuel-fired combustion equipment as defined in this rule. This rule applies to in-use ovens, dryers, smokers, and dry roasters with nitrogen oxide (NOx) emissions from fuel combustion that require South Coast Air Quality Management District (SCAQMD) permits and are used to prepare food or products for making beverages for human consumption. As of November 7, 2014, the equipment subject to this rule is no longer subject to SCAQMD Rule 1147 except for the compliance determination option set forth in Rule 1147 (d)(7).

(b) Definitions

(1) ANNUAL HEAT INPUT means the amount of heat released by fuels burned in a burner or unit during a calendar year, based on the fuel's higher heating value.

(2) BTU means British thermal unit(s).

(3) COMBUSTION MODIFICATION means replacement of a burner, burners, fuel or combustion air delivery system(s), or burner control system(s).

(4) COMBUSTION SYSTEM means a specific combination of burner, fuel supply, combustion air supply, and control system components as identified in a permit application to the SCAQMD, application for certification pursuant to subdivision (e) of this rule, or SCAQMD permit, if applicable.

(5) FOOD OVEN means an oven used to heat, cook, dry, or prepare food or products for making beverages for human consumption.

(6) GASEOUS FUEL means natural gas; compressed natural gas (CNG); liquefied petroleum gases (LPG), including but not limited to propane and butane; synthetic natural gas (SNG); or other fuel that is a gas at ambient temperature and atmospheric pressure.

(7) HEAT INPUT means the higher heating value of the fuel to the burner or UNIT measured as BTU per hour.

(8) HEAT OUTPUT means the enthalpy of the working fluid output of a burner or UNIT.

(9) INFRARED BURNER means a burner with ceramic, metal fiber, sintered metal, or perforated metal flame-holding surface; with more than 50% of the heat output as infrared radiation; that is operated in a manner where the zone including and above the flame-holding surface is red and does not produce observable blue or yellow flames in excess of ½ inch (13 mm) in length; and with a RATED HEAT INPUT CAPACITY per square foot of flame holding surface of 100,000 BTU per hour or less.

(10) IN-USE UNIT means any UNIT that is demonstrated to the Executive Officer that it was in operation at the current location prior to November 7, 2014.

(11) NOx EMISSIONS means the sum of nitrogen oxide and nitrogen dioxide in flue gas, collectively expressed as nitrogen dioxide.

(12) PROTOCOL means a SCAQMD approved set of test procedures for determining compliance with emission limits for applicable equipment.

(13) RADIANT TUBE HEATING means an indirect heating system with a tube or tubes; with burner(s) that fire(s) within the tube(s); and where heat is transferred by conduction, radiation, and convection from the burner flame and combustion gases to the tube(s) and the heat is then transferred to the process by radiation and convection from the heated tube(s) without any direct contact of process materials with burner flames and combustion gasses.

(14) RATED HEAT INPUT CAPACITY means the gross HEAT INPUT of the combustion UNIT specified on a permanent rating plate attached by the manufacturer to the device. If the UNIT or COMBUSTION SYSTEM has been altered or modified such that its gross HEAT INPUT is higher or lower than the rated HEAT INPUT capacity specified on the original manufacturer's permanent rating plate, the modified gross HEAT INPUT shall be considered as the RATED HEAT INPUT CAPACITY.

(15) RESPONSIBLE OFFICIAL means:

(A) For a corporation: a president or vice-president of the corporation in charge of a principal business function or a duly authorized person who performs similar policy-making functions for the corporation; or

(B) For a partnership or sole proprietorship: general partner or proprietor, respectively;

(C) For a government agency: a duly authorized person.

(16) ROASTER means an oven used to dry roast nuts, coffee beans, or other plant seeds. ROASTER includes coffee roasting units with an integrated afterburner that is the only heat source, which also provides heat to roast the coffee beans.

(17) THERM means 100,000 BTU.

(18) UNIT means any oven, dryer, smoker, or ROASTER requiring a SCAQMD permit and used to prepare food or products for making beverages for human consumption.

(c) Requirements

(1) In accordance with the compliance schedule in Table 2, any person owning or operating an in-use unit subject to this rule shall not operate the unit in a manner that exceeds carbon monoxide (CO) emissions of 800 ppm by volume, referenced to 3% oxygen (O2), and the applicable nitrogen oxide emission limit specified in Table 1.

Table 1 – NO_x Emission Limit for In-Use Units

NOx Emission Limit PPM @ 3% O_2, dry or Pound/mmBTU heat input	
Process Temperature	
≤ 500° F	*> 500° F*
40 ppm or 0.042 lb/mmBTU	60 ppm or 0.073 lb/mmBTU

Table 2 – Compliance Schedule for In-Use Units

Equipment Category(ies)	Permit Application Shall be Submitted By	Unit Shall Be in Compliance On and After
Ovens used solely for making pita bread manufactured prior to 1999	October 1, 2017	July 1, 2018
Griddle ovens manufactured prior to 1999	October 1, 2017	July 1, 2018
Ovens heated solely by indirect-fired radiant tubes manufactured prior to 2002	October 1, 2021	July 1, 2022
Other unit manufactured prior to 1992	October 1, 2015	July 1, 2016
Other unit manufactured from 1992 through 1998	October 1, 2018	July 1, 2019
Ovens heated solely by indirect-fired radiant tubes manufactured after 2001 and any other unit manufactured after 1998	October 1 of the year prior to the compliance date	July 1 of the year the unit is 20 years old

(2) Unit age shall be based on:

(A) The original date of manufacture of the unit as determined by:

(i) Original manufacturer's identification or rating plate permanently fixed to the equipment. If not available, then:

(ii) Invoice from manufacturer or distributor for purchase of equipment. If not available, then:

(iii) Information submitted to SCAQMD with prior permit applications for the specific unit sufficient to establish the manufacture date. If not available, then:

(iv) Unit shall be deemed by SCAQMD to be 20 years old.

(3) Owners or operators of units shall determine compliance with the emission limit specified in Table 1 pursuant to the provisions of subdivisions (d) or (e) using a SCAQMD approved test protocol. The test protocol shall be submitted to the SCAQMD at least 150 days prior to the scheduled test and approved by the SCAQMD Source Testing Division.

(4) Identification of Units

(A) Unmodified Units

The owner or operator shall display the model number and the rated heat input capacity of the unit complying with subdivision (c) on a permanent rating plate. The owner or operator shall also display the SCAQMD certification status on the unit when applicable.

(B) Modified Units

The owner or operator of a unit with a combustion modification shall display the modified rated heat input capacity for the unit and individual burners on new permanent supplemental rating plates installed in an accessible location on the unit and every burner. The gross heat input shall be defined by the maximum fuel input corrected for fuel heat content, temperature, and pressure. Gross heat input shall be demonstrated by a calculation based on fuel consumption recorded by an in-line fuel meter. The permanent supplemental rating plates shall include the date the unit and burners were modified and the date any replacement burners were manufactured. The documentation of rated heat input capacity for modified units shall include the name of the company and person modifying the unit, a description of all modifications, the dates the unit was modified, and calculation of rated heat input capacity. The documentation for modified units shall be signed by the highest ranking person modifying the unit.

(5) The owner or operator shall maintain on site a copy of all documents identifying the unit's rated heat input capacity. The rated heat input capacity shall be identified by a manufacturer's or distributor's manual or invoice and permanent rating plates attached to the unit and individual burners pursuant to paragraph (c)(4).

(6) On or after November 7, 2014, any person owning or operating a unit subject to this rule shall perform combustion system maintenance in accordance with the manufacturer's schedule and specifications as identified in the manual or other written materials supplied by the manufacturer or distributor. The owner or operator shall maintain on site at the facility where the unit is being operated a copy of the manufacturer's, distributor's, installer's, or maintenance company's written maintenance schedule and instructions and retain a record of the maintenance activity for a period of not less than three years. The owner or operator shall maintain on site at the facility where the unit is being operated a copy of the SCAQMD certification or SCAQMD approved source test reports, conducted by an independent third party, demonstrating that the specific unit complies with the emission limit. The source test report(s) must identify that the source test was conducted

pursuant to a SCAQMD approved protocol. The model and serial numbers of the specified unit shall clearly be indicated on the source test report(s). The owner or operator shall maintain on the unit in an accessible location a permanent or permanent supplemental rating plate. The maintenance instructions, maintenance records, and the source test report(s) or SCAQMD certification shall be made available to the Executive Officer upon request.

(7) Any person owning or operating a unit subject to this rule complying with an emission limit in Table 1 expressed as pounds per million BTU shall install and maintain in service non-resettable, totalizing fuel meters for each unit's fuel(s) prior to the compliance determination specified in paragraph (c)(3). Owners or operators of a unit with a combustion system that operates at only one firing rate that complies with an emission limit using pounds per million BTU shall install a non-resettable, totalizing time or fuel meter for each fuel.

(8) Unit fuel and electric use meters that require electric power to operate shall be provided a permanent supply of electric power that cannot be unplugged, switched off, or reset except by the main power supply circuit for the building or the unit's safety shut-off switch. Any person owning or operating a unit subject to this rule shall not shut off electric power to a unit meter unless the unit is not operating or is shut down for safety.

(9) Compliance by Certification

For units that do not allow adjustment of the fuel and combustion air for the combustion system by the owner or operator, and upon approval by the Executive Officer, an owner or operator may demonstrate compliance with the emission limit and demonstration requirement of this subdivision by certification granted to the manufacturer for any model of unit or specific combustion system sold for use in the SCAQMD. Any unit or combustion system certified pursuant to subdivision (e) shall be deemed in compliance with the emission limit in Table 1 of paragraph (c)(1) and demonstration requirement of paragraph (c)(3) of this subdivision, unless a SCAQMD conducted or required source test shows non-compliance.

(10) Alternate Compliance Plan For Multiple Units

Owners or operators of facilities with three or more in-use units with compliance dates in the same year or two consecutive years may request a delay and phase-in of the compliance dates in Table 2 for the affected units. The term of the alternate compliance plan shall be no more than 3 years for 3 or 4 units and no more than 5 years for 5 or more units. At least one unit shall comply with the applicable emission limit by July 1 of the first applicable compliance date specified in Table 2 for the affected units and at least one unit shall comply with the applicable emission limit by July 1 of each year thereafter. The alternate compliance plan shall identify the units included in the plan and commit to a schedule showing when the compliance testing for each unit will be completed and when each unit will demonstrate compliance with the emission limit. All owners or operators of these units shall demonstrate compliance with the applicable emission limit of this rule in accordance with the schedule in the plan and before the end of the term of the alternate compliance plan. The alternate compliance plan submitted pursuant to this paragraph shall include:

(A) A cover letter submitted to the SCAQMD identifying that the application is for a Rule 1153.1 (c)(10) Alternate Compliance Plan for Multiple Units and signed by the responsible official;

(B) A completed SCAQMD Form 400A with company name, SCAQMD Facility ID, identification that the application is for a compliance plan (section 7 of form), identification that the request is for a Rule 1153.1 (c)(10) Alternate Compliance Plan for Multiple Units (section 9 of the form), and signature of the responsible official;

(C) Documentation of the applicable units' permit IDs, equipment descriptions, and heat ratings (BTU/hour), and the proposed alternate compliance schedule;

(D) Filing fee payment (Rule 306 (c)); and

(E) Initial plan evaluation fee payment (Rule 306 (i)(1)).

(11) Compliance Plan for Burner Replacement Prior to Rule Adoption

Notwithstanding the requirements of paragraph (c)(1), units with combustion modifications completed prior to November 7, 2014 that resulted in replacement of 100% of the unit's burners during a one time

period of less than 31 consecutive days, shall comply with the applicable emission limit specified in Table 1 of paragraph (c)(1) on either (1) July 1 of the year the modification is ten years old if the unit operates no more than 8 hours per day on all days of operation or (2) July 1 of the year the modification is 5 years old if the unit operates greater than 8 hours on any day. The hours of operation shall be documented by daily recordkeeping starting January 1, 2015 or the date the plan is submitted, whichever is earlier. To qualify for this time extension, the owner/operator must submit an alternate compliance plan to the SCAQMD no later than 90 days after November 7, 2014 with documentation of the purchase, replacement, and identification of each new burner installed. The alternate compliance plan submittal to the SCAQMD shall include:

(A) A letter submitted to the SCAQMD stating the application is for a Rule 1153.1 (c)(11) Burner Replacement Prior to Rule Adoption Alternate Compliance Plan; identifying the applicable unit, unit permit ID, dates the emissions test protocol and emissions test results shall be submitted to the SCAQMD, and proposed alternate compliance schedule (5 or 10 years) with beginning and ending dates; and signed by the responsible official;

(B) A completed SCAQMD form 400A with company name, identification that application is for an alternate compliance plan (section 7 of form), identification that the request is for the Rule 1153.1 (c)(11) Burner Replacement Prior to Rule Adoption Compliance Plan (section 9 of form), and signature of the responsible official;

(C) Documentation of the date of replacement of the burners with invoices for burner purchase, burner installation, and tuning, and a listing of each new burner installed in the unit with each burner's manufacturer, model number, serial number, date of manufacture on burner rating plate or date stamp on burner, and each burner's rated heat input capacity;

(D) Documentation of the applicable unit's permit ID, description, and heat rating (BTU/hour);

(E) Filing fee payment (Rule 306 (c)); and

(F) Initial plan evaluation fee payment (Rule 306 (i)(1)).

(12) Owners or operators of units operating with an alternate compliance plan pursuant to paragraph (c)(11) shall install, prior to submittal of the compliance plan application, a non-resettable time meter on the applicable unit and document and maintain records of unit use every day of operation for the duration of the alternate compliance plan.

(13) Owners or operators of units operating with an alternate compliance plan pursuant to paragraph (c)(11) that replace more than 50% of the burners identified in the alternate compliance plan more than 365 days before the ending date of the alternate compliance plan shall submit an emissions testing protocol for the applicable unit to the SCAQMD within 30 days of the date when more than 50% of the burners are replaced. Owners and operators of these units shall conduct emissions testing and demonstrate compliance with the emission limits in Table 1 of paragraph (c)(1) within 270 days of the date they replace more than 50% of the burners identified in the alternate compliance plan.

(d) Compliance Determination

(1) All compliance determinations pursuant to paragraphs (c)(1), (c)(3), (c)(9), (c)(10) and this subdivision shall be calculated:

(A) Using a SCAQMD approved test protocol averaged over a period of at least 15 and no more than 60 consecutive minutes; and

(B) After unit start up.

Each compliance determination shall be made in the maximum heat input range at which the unit normally operates. An additional compliance determination shall be made using a heat input of less than 35% of the rated heat input capacity.

For compliance determinations after the initial approved test, the owner or operator is not required to resubmit a protocol for approval if: there is a previously approved protocol and the unit has not been altered in a manner that requires a permit alteration, and rule or permit emission limits have not changed since the previous test.

(2) All parts per million emission limits specified in subdivision (c) shall be referenced at 3 percent volume stack gas oxygen on a dry basis.

(3) Compliance with the NO_X and CO emission limits of subdivision (c) and determination of stack-gas oxygen and carbon dioxide concentrations for this rule shall be determined according to the following procedures:

(A) SCAQMD Source Test Method 100.1 – Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling (March 1989);

(B) ASTM Method D6522-00 – Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers;

(C) United States Environmental Protection Agency Conditional Test Method CTM-030 – Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers;

(D) SCAQMD Source Test Method 7.1 – Determination of Nitrogen Oxide Emissions from Stationary Sources (March 1989);

(E) SCAQMD Source Test Method 10.1 – Carbon Monoxide and Carbon Dioxide by Gas Chromatograph/Non-Dispersive Infrared Detector (GC/NDIR) – Oxygen by Gas Chromatograph-Thermal Conductivity (GC/TCD) (March 1989);

(F) Any alternative test method determined approved before the test in writing by the Executive Officers of the SCAQMD, and the California Air Resources Board, and by the United States Environmental Protection Agency.

(4) For any owner or operator who chooses to comply using pound per million BTU, NO_X emissions in pounds per million BTU of heat input shall be calculated using procedures in 40 CFR Part 60, Appendix A, Method 19, Sections 2 and 3.

(5) Records of source tests shall be maintained on site and made available to SCAQMD personnel upon request. Emissions determined to exceed any limits established by this rule through the use of any of the test methods specified in subparagraphs (d)(3)(A) through (d)(3)(F) and paragraph (d)(4) shall constitute a violation of this rule.

(6) All compliance determinations shall be made by SCAQMD or using an independent contractor to conduct testing, which is approved by the Executive Officer under the Laboratory Approval Program for the applicable test methods.

(7) For equipment with two or more units in series or multiple units with a common exhaust, the owner or operator may demonstrate compliance with the emission limits in Table 1 by one of the following:

(A) Test each unit separately and demonstrate each unit's compliance with the applicable limit; or

(B) Test only after the last unit in the series and at the end of a common exhaust for multiple units, when all units are operating, and demonstrate that the series of units meet either:

(i) The lowest emission limit in Table 1 applicable to any of the units in series; or

(ii) A heat input weighted average of all the applicable emission limits in Table 1 using the following calculation.

$$\textbf{Weighted Limit} = \frac{\sum_{1}^{N} [\ (EL_X)*(Q_X)\ ]}{\sum_{1}^{N} [\ Q_X\ ]}$$

Where:

N = total number of units or processes

X = each individual unit or process

EL_X = emission limit for unit or process X

Q_X = heat input for unit or process X during test

(e) Certification

(1) Unit Certification

For units that do not allow adjustment of the fuel and combustion air for the combustion system by the owner or operator, any manufacturer or distributor that distributes for sale or sells units or combustion systems for use in the SCAQMD may elect to apply to the Executive Officer to certify such units or combustion systems as compliant with subdivision (c).

(2) Confirmation of Emissions

Any manufacturer's or distributor's application to the Executive Officer to certify a model of unit or combustion system as compliant with the emission limit and demonstration requirement of subdivision (c) shall obtain confirmation from an independent contractor that is approved by the Executive Officer under the Laboratory Approval Program for the necessary test methods prior to applying for certification that each unit

model complies with the applicable requirements of subdivision (c). This confirmation shall be based upon SCAQMD approved emission tests. A SCAQMD approved protocol shall be adhered to during the confirmation testing of all units and combustion systems subject to this rule. Emission testing shall comply with the requirements of paragraphs (d)(1) through (d)(6) except that emission testing shall be conducted at greater than 90% rated heat input capacity and additional emission testing shall be conducted at a heat input of less than 35% of the rated heat input capacity.

(3) When applying for unit(s) or combustion system(s) certification, the manufacturer or distributor shall submit to the Executive Officer the following:

(A) A statement that the model of unit or combustion system is in compliance with subdivision (c). The statement shall be signed and dated by the manufacturer's or distributor's responsible official and shall attest to the accuracy of all statements;

(B) General Information

(i) Name and address of manufacturer or distributor;

(ii) Brand name, if applicable;

(iii) Model number(s), as it appears on the unit or combustion system rating plate(s);

(iv) List of all combustion system components; and

(v) Rated Heat Input Capacity, gross output of burner(s), and number of burners;

(C) A description of each model of unit or combustion system being certified; and

(D) A source test report verifying compliance with the applicable emission limit in subdivision (c) for each model to be certified. The source test report shall be prepared by the confirming independent contractor and shall contain all of the elements identified in the SCAQMD approved Protocol for each unit tested.

(4) When applying for unit or combustion system certification, the manufacturer or distributor shall submit the information identified in paragraph (e)(3) no more than ninety (90) days after the date of the source test identified in subparagraph (e)(3)(D) and at least 120 days prior to the date of the proposed sale and installation of any SCAQMD certified unit or combustion system.

(5) The Executive Officer shall certify a unit or combustion system model or models which complies with the provisions of subdivision (c) and of paragraphs (e)(2), (e)(3), and (e)(4).

(6) Certification status shall be valid for seven years from the date of approval by the Executive Officer. After the seventh year, recertification shall be required by the Executive Officer according to the requirements of paragraphs (e)(2), (e)(3), and (e)(4).

(f) Enforcement

(1) The Executive Officer may inspect certification records and unit installation, operation, maintenance, repair, combustion system modification, and test records of owners, operators, manufacturers, distributors, retailers, and installers of units located in the SCAQMD, and conduct such tests as are deemed necessary to ensure compliance with this rule. Tests shall include compliance determinations, as specified in paragraphs (d)(1) through (d)(4), (d)(6), and (d)(7).

(2) A compliance determination specified under paragraph (f)(1) that finds emissions in excess of those allowed by this rule shall constitute a violation of this rule.

(g) Exemptions

(1) The provisions of this rule shall not apply to:

(A) Boilers, water heaters, thermal fluid heaters, or process heaters subject to SCAQMD Rules 1146, 1146.1, or 1146.2, including but not limited to those that provide heat to a unit through a heat exchange system;

(B) Units subject to registration pursuant to SCAQMD Rule 222;

(C) Units regulated under Regulation XX;

(D) Solid fuel-fired combustion equipment;

(E) Charbroilers;

(F) Fryers, including fryers used for nut, seed, or other food product oil roasting; and

(G) Emission control equipment including but not limited to afterburners.

(2) The provisions of paragraphs (c)(1) and (c)(3) of this rule shall not apply to units with daily NOx emissions of 1 pound per day or less as documented by:

(A) A rated heat input capacity of less than 325,000 BTU per hour;

(B) Compliance with a permit condition that limits NOx emissions to 1 pound per day or less;

(C) Daily recordkeeping of unit operation, an installed unit specific non-resettable time meter, and the following specified rated heat input capacities operating the specified number of hours every day:

(i) Less than or equal to 400,000 BTU per hour and operating less than or equal to 16 hours per day; or

(ii) Less than or equal to 800,000 BTU per hour and operating less than or equal to 8 hours per day; or

(iii) Less than or equal to 1,200,000 BTU per hour and operating less than or equal to 5 hours per day.

(D) Daily recordkeeping of unit use, including but not limited to time records of unit operation using a unit-specific non-resettable time meter, daily fuel consumption documented using an non-resettable fuel meter, or daily process rate; or

(E) Daily use of natural gas less than or equal to 7,692 cubic feet per day at standard temperature and pressure, documented by daily recordkeeping of fuel gas consumption with a non-resettable fuel meter and a test protocol, calculations, and results of a test of the gas pressure to the meter conducted by the local utility or an independent contractor. The documentation of gas pressure to the meter shall include a letter stating that the test was performed using the included protocol and the letter shall be signed by the person performing the test.

(3) The provisions of paragraph (c)(3) of this rule shall not apply to units heated solely with infrared burners.

(h) Mitigation Fee Compliance Option

(1) An owner or operator of a unit may elect to delay the applicable compliance date in Table 2 three years by submitting an alternate compliance plan and paying an emissions mitigation fee to the SCAQMD in lieu of meeting the applicable NOx emission limit in Table 1.

(2) Compliance Demonstration

An owner or operator of a unit electing to comply with the mitigation fee compliance option shall:

(A) Submit an alternate compliance plan and pay the mitigation fee to the Executive Officer at least 150 days prior to the applicable compliance date in Table 2; and

(B) Maintain on-site verification of mitigation fee payment and SCAQMD approval of the alternate compliance plan that shall be made available upon request to SCAQMD staff.

(3) Plan Submittal

The alternate compliance plan submitted pursuant to paragraphs (h)(1) and (h)(2) shall include:

(A) A cover letter submitted to the SCAQMD identifying that the application is for a Rule 1153.1 (h) Mitigation Fee Compliance Plan, listing the applicable unit(s), and signed by the responsible official;

(B) A completed SCAQMD Form 400A with company name, SCAQMD Facility ID, identification that the application is for a compliance plan (section 7 of form), identification that the request is for a Rule 1153.1 (h) Mitigation Fee Compliance Plan (section 9 of the form), and signature of the responsible official;

(C) Attached documentation of unit fuel use for previous 3 years, description of weekly operating schedule, unit permit ID, unit heat rating (BTU/hour), and fee calculation;

(D) Filing fee payment; and

(E) Mitigation fee payment as calculated by Equation 1.

Equation 1:

$$MF = R * (3 \text{ years }) * (L_1 - L_0) * (AF) * (k)$$

Where,

MF = Mitigation fee, $

R = Fee Rate = $12.50 per pound ($6.25 per pound for a small business with 10 or fewer employees and gross annual receipts of $500,000 or less)

L_1 = Default NOx emission factor: 0.136 lbs of NOx/mmBTU for gaseous fuels and 0.160 lb/mmBTU for fuel oils

L_0 = Applicable NOx emission limit specified in Table 1 in lbs/mmBTU

AF = Annual average fuel usage of unit for previous 5 years, mmscf/yr for natural gas or gallons for liquid fuel

k = unit conversion for cubic feet of natural gas to BTU = 1,050 BTU/scf; 95,500 BTU/gallon for LPG; and 138,700 BTU/gallon for fuel oil

(4) Rule 1147 Mitigation Fee Plan Submittal

A mitigation fee compliance plan submitted pursuant to SCAQMD Rule 1147 may be used to comply with the requirements of this paragraph so long as the owner/operator of the unit notifies the Executive Officer at least 150 days prior to the applicable compliance date specified in Table 2.

(Adopted December 4, 2009)(Amended May 2, 2014)

RULE 1155. PARTICULATE MATTER (PM) CONTROL DEVICES

(a) Purpose

The purpose of this rule is to establish requirements for permitted particulate matter (PM) air pollution control devices, including, but not limited to, baghouses, high efficiency particulate air (HEPA) systems, bin vents, or other dust collectors using high efficiency or other air filters, cyclones, electrostatic precipitators, and wet scrubbers.

(b) Applicability

This rule applies to the operator of permitted PM air pollution control device(s) venting processes that have direct (non-combustion) PM emissions. A summary of key rule elements is provided in Table 1 of this rule.

(c) Definitions

(1) BEST AVAILABLE CONTROL TECHNOLOGY (BACT) is as defined in South Coast Air Quality Management District (SCAQMD) Rule 1302 – Definitions, subdivision (h).

(2) BAGHOUSE means an air pollution control device designed to remove PM from a gas stream using fabric filters in the shape of a tube or an envelope, or other air filters that are built into a frame or cartridge. For the purpose of this rule, baghouses are separated into three tiers based on the following characteristics:

(A) Tier 1: Baghouses for which the filter surface area is less than or equal to 500 square feet;

(B) Tier 2: Baghouses for which the filter surface area is greater than 500 square feet but less than or equal to 7,500 square feet; or

(C) Tier 3: Baghouses for which the filter surface area is greater than 7,500 square feet.

(3) BAG LEAK DETECTION SYSTEM (BLDS) means a system that monitors electrical charge transfer based on triboelectricity or electrostatic induction to continuously monitor bag leakage and similar failures by detecting changes in particle mass loading in the exhaust.

(4) BIN VENT means an air filtration dust collector designed to remove PM from the air that is displaced by materials filling silos and bins.

(5) CONTINUOUS OPACITY MONITORING SYSTEM (COMS) means a system that meets minimum requirements specified under U.S. EPA 40 CFR Part 60, Appendix B, to continuously monitor opacity.

(6) CYCLONE means an air pollution control device designed to remove PM from a gas stream by inertia.

(7) ELECTROSTATIC PRECIPITATOR (ESP) means an air pollution control device designed to remove PM from a gas stream by imparting a high voltage direct current (DC) charge to the particles while simultaneously ionizing the carrier gas, producing an electric corona.

(8) EXISTING PM CONTROL DEVICE means a PM air pollution control device installed or for which an application for a permit has been deemed complete on or before December 4, 2009.

(9) FACILITY means any source or group of sources or other air contaminant-emitting activities which are subject to this rule and are located on one or more contiguous properties within the SCAQMD, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility. Sources or installations involved in crude oil and gas production in Southern California Coastal or OCS Waters and transport of such crude oil and gas in Southern California Coastal or OCS Waters shall be included in the same facility which is under the same ownership or use entitlement as the crude oil and gas production facility on-shore.

(10) NEW PM CONTROL DEVICE means a PM air pollution control device for which an application for a permit has been deemed complete after December 4, 2009.

(11) NON-CONTINUOUS PROCESS means an emissions generating activity vented to a PM air pollution control device that operates no more than once per week or for periods of less than one hour, not to cumulatively exceed 4 hours during any single day.

(12) VERIFIED FILTRATION PRODUCT means a filtration product that has been verified under the U.S. EPA Environmental Technology Verification (ETV) program at the time of purchase. Manufacturers whose filtration

product verification has expired must demonstrate at the time of purchase that the product is the same as was previously tested and verified under the ETV program.

(13) WET SCRUBBER means an air pollution control device designed to remove PM from a gas stream by using a finely atomized stream of liquid to capture particulate matter pollutants.

(d) General Requirements

(1) Beginning April 1, 2010, the operator of a facility shall not cause or allow any visible emissions (excluding condensed water vapor) from any PM air pollution control device required to have a permit.

(2) No later than January 1, 2011, the operator of any Tier 3 baghouse shall meet an outlet PM concentration of less than or equal to 0.01 grains per dry standard cubic foot (gr/dscf).

(A) Notwithstanding the above, the operator of hot mix asphalt production equipment shall comply with the 0.01 gr/dscf limit no later than January 1, 2013, unless the operator has documentation that demonstrates that new fabric filters have been installed within 12 months prior to December 4, 2009, in which case the hot mix asphalt production equipment shall comply by January 1, 2014 or at the end of the filter useful life, whichever occurs sooner.

(3) No later than April 1, 2010, all permitted PM control devices shall be operated and maintained in accordance with the manufacturer's operation and maintenance manual or other similar written materials supplied by the manufacturer or distributor of a control device to ensure that the control device remains in proper operating condition. If such documents are not available, the operator shall provide and follow written operation and maintenance procedures for the PM control device(s). Such documentation shall be made available to the Executive Officer immediately upon request.

(4) No later than January 1, 2012 or after the end of the useful life of a manual shaker unit, whichever occurs sooner, the operator of an existing manual shaker baghouse shall upgrade or replace it with, at a minimum, an automated shaker unit.

(5) An operator shall not install a manual shaker baghouse after December 4, 2009.

(6) If the PM emission limit in paragraph (d)(2) is exceeded, the operator shall file a permit application to use verified filtration products, as defined in paragraph (c)(12), or other technologies or methods demonstrated through source test pursuant to paragraph (e)(6) to comply with the requirement in paragraph (d)(2), within three months of discovery by the operator or of notification by the Executive Officer, to replace the existing filter bags or cartridges. The operator shall install the verified filtration products within three months of issuance of the permit.

(7) If the operator discovers the exceedance of the PM limit in paragraph (d)(2) and resolves the problem that led to the exceedance, within 24 hours of discovery, the operator would not be subject to the requirements in paragraph (d)(6).

(8) When a new process is vented to a new baghouse, the operator shall install and maintain a ventilation system that meets a minimum capture velocity requirement specified in the applicable standards of the most current Edition of the U.S. Industrial Ventilation Handbook, American Conference of Governmental Industrial Hygienists, at the time of installation.

(9) The operator shall discharge material collected in a permitted PM control device for disposal or bring the material back to the process through a controlled material transfer system to prevent fugitive emissions during material transfer, including, but not limited to, shrouding or use of dust suppressants to stabilize the material.

(10) Until more stringent requirements of this rule are effective and after, if still applicable, the operator shall operate and maintain all existing PM air pollution control devices according to existing SCAQMD permit conditions.

(11) For any new or modified PM air pollution control device subject to BACT, the operator of such device shall meet the more stringent BACT level established for that device (pursuant to SCAQMD BACT Guidelines) at the time of evaluation of the permit application for the device.

(e) Monitoring Requirements

(1) No later than March 31, 2010, the operator shall have a minimum of one person trained in the reading of visible emissions pursuant to EPA Method

22. Beginning April 1, 2010, the operator of any baghouse or other PM control device shall have the trained person conduct a continuous five-minute visible emissions observation using EPA Method 22 once a week and shall maintain records for each observation and any necessary subsequent action(s) taken to eliminate visible emissions pursuant to subdivision (f). The provisions of this paragraph shall apply to Tier 3 baghouse units up to and until compliance with the provisions of paragraph (e)(3).

(A) If the operator observes any visible emissions exiting at any time, including during a scheduled Method 22 test, the operator shall implement, within 24 hours, all necessary corrective actions to eliminate the visible emissions.

(B) To verify corrective actions were effective, the operator must restart the operations and complete a new Method 22 test to ensure no visible emissions are present. If visible emissions are still present, further corrective actions pursuant to subparagraph (e)(1)(C) must be taken. If no visible emissions are present, normal operations may resume.

(C) If the operator, after taking all corrective actions, subsequently observes visible emissions, the operator shall shut down the PM emitting equipment that vents into the control device, unless the baghouse operation can be adjusted to ensure no visible emissions, until necessary steps are taken to prevent the visible emissions. Baghouse adjustments include, but are not limited to, closing off specific baghouse chambers.

(D) If the activity being observed is consistently a duration of less than five minutes, then the Method 22 observation shall be for the period in which the activity takes place.

(E) An operator shall not be considered in violation of this paragraph and (d)(1), if the operator complies with subparagraphs (e)(1)(A) through (e)(1)(D).

(F) To the extent that multiple Method 22 tests can be conducted simultaneously, the operator may observe multiple sources contemporaneously at a single time as long as all of the sources are located in the field of view of the observer and appropriate records are kept for each observation. If the operator observes a visible

emissions problem during the reading, each source shall then be monitored separately.

(2) Notwithstanding the requirements of paragraph (e)(1), any baghouse outfitted completely with verified filtration products shall only be required to conduct visible emission observations once per month, pursuant to paragraph (e)(1), and shall maintain records for each Method 22 observation and any subsequent actions taken to eliminate visible emissions.

(3) The operator of any Tier 3 baghouse shall install, operate, calibrate and maintain a BLDS pursuant to the manufacturer's written recommendations, to monitor baghouse performance and ensure compliance with in paragraphs (d)(1) and (d)(2).

(A) The provisions of this paragraph shall apply to any new Tier 3 baghouse installed and operated as of December 4, 2009. For an existing baghouse, the facility operator shall file a permit application for a BLDS no later than May 1, 2010 and shall install the BLDS within three months of issuance of the permit.

(B) The BLDS system shall meet the following minimum requirements:

(i) The BLDS sensor must provide output of relative PM emissions; and

(ii) The BLDS must have an alarm that will activate automatically when it detects significant increase in relative PM emissions greater than a preset level and the presence of an alarm condition should be clearly apparent to the facility operator.

(C) The operator shall install a BLDS that has been certified by the manufacturer to be capable of alarming automatically before visible emissions can be seen in the exhaust of a baghouse and shall set the BLDS to operate at such level. The baseline output for the system must be established as follows:

(i) Adjust and maintain the range and the averaging period of the device for the specific application per the manufacturer's written specifications and recommendations; and

(ii) Establish and maintain the alarm set points and the alarm delay time per the manufacturer's written specifications and recommendations.

(D) The operator shall perform adequate maintenance and inspections of a BLDS, according to the written specifications and recommendations of the manufacturer, to ensure that the monitor is operating properly at all times and shall maintain the records pursuant to subdivision (f).

(E) If the operator receives an alarm from the BLDS, the operator shall investigate the baghouse and the BLDS, and take all necessary corrective actions to eliminate the cause of the alarm.

(F) The operator shall maintain filters and operate the baghouse such that the BLDS alarm activation is minimized and the cumulative number of hours of alarm activation within any continuous six-month rolling period do not exceed more than five percent of the total operating hours in that period after following the procedures of subparagraph (e)(3)(G), including, but not limted to, shut down of the equipment as specified.

(G) Each time the alarm activates, the operator shall count the alarm time as the actual length of time of the elevated emissions that caused the alarm and record it. If the inspection of the baghouse, pursuant to subparagraph (e)(3)(E), demonstrates that no visible emissions are occuring in conjunction with the alarm and that no corrective actions are necessary to the baghouse equipment, no alarm time will be counted. If cumulative alarm time exceeds five percent of the total operating hours based on any continuous six-month rolling period, the operator shall shut down the equipment that vents into the baghouse until necessary actions are taken to eliminate the elevated emissions.

(4) Notwithstanding the provisions of paragraph (e)(1) and subparagraph (e)(3)(A) applicable to Tier 3 units, the operator of hot mix asphalt production equipment may conduct daily visible emissions monitoring, as described in paragraph (e)(1), in lieu of BLDS installation, provided the facility operator notifies the Executive Officer in writing no later than May 1, 2010, files a permit application for a BLDS no later than June 1, 2011, and installs the BLDS within three months of issuance of the permit,

at which time the operator shall comply with the provisions of paragraph (e)(3). Daily visible emissions monitoring shall begin no later than January 1, 2011 and continue until such time the BLDS is installed. The operator shall maintain records for each observation and any subsequent actions taken to eliminate visible emissions during the time in which daily visible emissions monitoring is conducted.

(5) No later than January 1, 2015 or after the end of the useful life of a COMS, whichever occurs sooner, a COMS installed at an existing Tier 3 baghouse shall be changed to a BLDS.

(6) Source tests conducted to demonstrate compliance with paragraph (d)(2) shall follow SCAQMD Methods 5.1, 5.2, or 5.3, as applicable.

(A) For a baghouse located at a Title V facility, the facility operator shall conduct an initial source test no later than January 1, 2011 to demonstrate compliance with the requirements of paragraph (d)(2). Subsequent source tests shall be conducted every five years thereafter.

(B) Source tests shall be conducted by an approved lab from the SCAQMD Laboratory Approval Program. For the purpose of this rule, the total weight of PM in solid and liquid form should be considered when conducting source tests.

(f) Recordkeeping

Records shall be kept in a format approved by the Executive Officer to demonstrate compliance with the provisions of this rule, and all records and information recorded pursuant to this subdivision shall be maintained at the facility for a minimum of five years and shall be made available to the Executive Officer immediately upon request.

(1) For the purposes of paragraph (e)(1), records kept shall include, but not be limited to:

(A) Facility name;

(B) Observer's name and affiliation;

(C) Date and time of observation;

(D) Process unit(s) being observed;

(E) Observer's position relative to the source;

(F) Observation duration;

(G) Whether visible emissions occurred and cumulative amount of time visible emissions occurred; and

(H) If visible emissions were observed, what actions were taken to correct the problem causing them, including and up to date and time of equipment shutdown, if applicable.

(2) For the purposes of paragraph (e)(3), records kept shall include, but not be limited to:

(A) Facility name;

(B) Facility representative for maintaining the BLDS;

(C) Date and time of routine maintenance and inspections conducted on BLDS;

(D) The date and time of any alarm, including length of the alarm time, and cause of the alarm;

(E) The date and time corrective action is completed to eliminate the cause of the alarm;

(F) Whether visible emissions occurred; and

(G) Total operating hours of the baghouse.

(g) Exemptions

(1) With the exception of paragraph (d)(1), any baghouse for which the filter surface area is less than or equal to 100 square feet is exempt from the provisions of this rule.

(2) The operator of a PM air pollution control device venting a non-continuous process is exempt from the provisions of paragraph (e)(1), provided no visible emissions occur when the process activity takes place.

(3) Any equipment with an active permit to operate that is not in operation as of December 4, 2009 shall be exempt from the provisions of this rule until operations commence.

(4) Facility operations that are subject to District Rules 1105.1 – Reduction of PM_{10} and Ammonia Emissions from Fluid Catalytic Cracking Units, and 1156 – Further Reductions of Particulate Emissions from Cement Manufacturing Facilities, are exempt from the provisions of this rule.

(5) The operator of a Tier 1 or Tier 2 baghouse that voluntarily installs, operates, calibrates and maintains a BLDS pursuant to paragraph (e)(3) shall be exempt from the visible emissions provisions of paragraph (e)(1).

(6) Bin vents are exempt from the provisions of paragraph (e)(1).

(7) The provisions of paragraphs (d)(1), (d)(2), (d)(6), and (e)(1), and subparagraphs (e)(3)(E) through (e)(3)(G) shall not apply during the one-half hour of start-up of the equipment or process venting to the PM air pollution control device, including start-up after a repair to fix an equipment breakdown or after a scheduled maintenance activity. During that one-half hour starting period, PM air pollution control devices under this rule remain subject to the PM concentration (grain loading) requirements of Rule 404 and an opacity requirement of no greater than No. 1 on the Ringelmann Chart as specified in Rule 401 (b)(1) [shown as Rule 401 (a) in the SIP-approved version, as amended March 2, 1984, and SIP-approved on January 29, 1985].

(8) For PM air pollution control devices connected in series, the provisions of paragraphs (d)(2), (d)(6), and (e)(1) shall only apply to the PM air pollution control device exhausting to the atmosphere. In the event a Tier 3 baghouse is not the last in the series to vent to the atmosphere, the provisions of paragraph (e)(3) shall not apply.

(9) Any paint spray booth or powder spray booth is exempt from the provisions of this rule.

(10) Air pollution control equipment exclusively venting organic gases from hot mix asphalt load-out operations and directly related equipment, including storage silos, conveyors, mills, and batching towers, are exempt from the provisions of this rule.

(11) With the exception of paragraph (d)(1), any portable dust collector, fume extractor, or negative air machine with a maximum rated capacity of less than or equal to 3,000 cfm is exempt from the provisions of this rule.

(12) With the exception of paragraph (d)(1), facility operations that are subject to District Rule 1469 - Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations are exempt from the provisions of this rule.

(13) With the exception of paragraph (d)(1), high efficiency particulate air (HEPA) equipment are exempt from the provisions of this rule.

Table 1
Summary of Requirements

Fabric Filtration PM Air Pollution Control Equipment (baghouses)*			Other Fabric and Non-Fabric Filtration PM Air Pollution Control Equipment (dust collectors, cyclones, ESPs, wet scrubbers)*
Tier 1	Tier 2	Tier 3	n/a
≤ 500 square feet	> 500 – 7,500 square feet	> 7,500 square feet	n/a
Once-a-week visible emissions monitoring and recordkeeping (new, existing)	Once-a-week visible emissions monitoring and recordkeeping (new, existing)	Until BLDS is installed, once-a-week visible emissions monitoring and recordkeeping	Once-a-week visible emissions monitoring and recordkeeping (new, existing)
--	--	BLDS installation (new, existing)	--
--		Emission limit (0.01 gr/dscf)	--
		Title V facilities conduct initial source test and test every five years relative to compliance with the emission limit.	

* Except as provided in subdivision (g) Exemptions.

(Adopted November 4, 2005)(Amended March 6, 2009)

RULE 1156. FURTHER REDUCTIONS OF PARTICULATE EMISSIONS FROM CEMENT MANUFACTURING FACILITIES

(a) Purpose

The purpose of this rule is to further reduce particulate matter (PM) emissions from cement manufacturing facilities.

(b) Applicability

This rule applies to all operations, materials handling, and transport at a cement manufacturing facility, including, but not limited to, kiln and clinker cooler, material storage, crushing, drying, screening, milling, conveying, bulk loading and unloading systems, internal roadways, material transport, and track-out.

(c) Definitions

(1) BAG LEAK DETECTION SYSTEM (BLDS) means a system that meets the minimum requirements specified under U.S. EPA 40 CFR Part 63, Subpart LLL, Section 1350 (m) to continuously monitor bag leakage and failure.

(2) CEMENT MANUFACTURING FACILITY means any facility that engages in, or has been engaged in prior to November 4, 2005, producing portland cement or associated products, as defined in the Standard Industrial Classification Manual as Industry No. 3241, Portland Cement Manufacturing.

(3) CHEMICAL DUST SUPPRESSANT means any non-toxic chemical stabilizer which is used as a treatment material to reduce fugitive dust emissions and its use is not prohibited by any other applicable law and meets all applicable specifications required by any federal, state, or local water agency.

(4) CLINKER means a product from the kiln which is used as a feedstock to make cement.

(5) CLINKER COOLER means equipment into which clinker product leaving the kiln is placed to be cooled by air supplied by a forced draft or natural draft supply system.

(6) CONVEYING SYSTEM means a device for transporting materials from one piece of equipment or location to another piece of equipment or location within a facility. Conveying systems include, but are not limited to, the following: feeders, belt conveyors, bucket elevators and pneumatic systems.

(7) CONTINUOUS OPACITY MONITORING SYSTEM (COMS) means a system that meets minimum requirements specified under U.S. EPA 40 CFR Part 60, Appendix B, to continuously monitor opacity.

(8) CONVEYING SYSTEM TRANSFER POINT means a point where any material including, but not limited to, feed material, fuel, clinker or product, is transferred to or from a conveying system, or between separate parts of a conveying system.

(9) COVERED CONVEYOR is a conveyor where the top and side portion of the conveyor are covered by a removable cover to allow routine inspection and maintenance.

(10) DUST SUPPRESSANTS are water, hygroscopic materials, or chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(11) ENCLOSED CONVEYOR is any conveyor where the top, side and bottom portion of the conveyor system is enclosed except for points of loading and discharge and except for a removable cover to allow routine inspection and maintenance.

(12) ENCLOSED SCREENING EQUIPMENT means screening equipment where the top portion of the equipment is enclosed, except for the area where the materials are loaded to the screening equipment.

(13) ENCLOSED STORAGE PILE means any storage pile that is completely enclosed in a building or structure consisting of a solid roof and walls.

(14) END OF WORK DAY means the end of a working period that may include one or more work shifts, but no later than 8 p.m.

(15) EXISTING EQUIPMENT means any equipment, process or operation having an existing valid AQMD permit that was issued prior to November 4, 2005.

(16) FACILITY means any source or group of sources or other air contaminant-emitting activities which are subject to this rule and are located on one or more contiguous properties within the AQMD, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility. Sources or installations involved in crude oil and gas production in Southern California Coastal or OCS Waters and transport of such crude oil and gas in Southern California Coastal or OCS Waters shall be included in the same facility which is under the same ownership or use entitlement as the crude oil and gas production facility on-shore.

(17) FINISH MILL means a roll crusher, ball and tube mill or other size reduction equipment used to grind clinker to a fine powder. Gypsum and other materials may be added to and blended with clinker in a finish mill. The finish mill also includes the air separator associated with the finish mill.

(18) HAUL TRUCK means a diesel heavy-duty truck that has a loading capacity equal to or greater than 50 tons.

(19) INACTIVE CLINKER PILE is a pile of clinker material that has not been disturbed, removed, and/or added to as a result of loading, unloading, and/or transferring activities for 30 (thirty) consecutive days.

(20) KILN means a device, including any associated preheater or precalciner devices that produce clinker by heating limestone and other materials for subsequent production of portland cement.

(21) OPEN STORAGE PILE is any accumulation of materials which attains a height of three (3) feet or more or a total surface area of one hundred fifty (150) square feet or more. The open pile is defined as inactive when loading and unloading has not occurred in the previous 30 consecutive days.

(22) OPERATOR means the operator of the cement manufacturing facility subject to this rule unless otherwise specified.

(23) PAVED ROAD means a road improved by covering with concrete, asphaltic concrete, recycled asphalt, or asphalt.

(24) RAW MILL means a ball, tube, or vertical roller mill or other size reduction equipment used to grind materials to the appropriate size. Moisture may be added or removed from the materials during the grinding operation. A raw mill may also include a raw material dryer and/or air separator.

(25) ROAD means any route with evidence of repeated prior travel by vehicles.

(26) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting, is resistant to being the source of wind-driven fugitive dust, and is demonstrated to be stabilized by the applicable test methods contained in the Rule 403 Implementation Handbook.

(27) STREET SWEEPER is a PM_{10} efficient street sweeper approved pursuant to Rule 1186 – PM_{10} Emissions from Paved and Unpaved Roads & Livestock Operations.

(28) TOP PROCESS PARTICULATE EMITTERS means:

(A) process equipment, including but not limited to the kiln, clinker cooler, raw mill, and finish mill, vented to air pollution control equipment, except open-top baghouses, that account for 60% of the total process particulate

emissions at the facility, for the requirement of using BLDS or COMS under paragraph (e)(2); or

(B) process equipment, including but not limited to the kiln, clinker cooler, raw mill, and finish mill, vented to air pollution control equipment, that account for 80% of the total process particulate emissions at the facility for the monitoring, source testing and recordkeeping requirements under paragraph (e)(3), (e)(8) and subparagraph (f)(2)(D).

(29) TRACK-OUT means any material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that has been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(30) VERIFIED FILTRATION PRODUCT means filtration products that are verified under the U.S. EPA Environmental Technology Verification program (ETV).

(31) WET SUPPRESSION SYSTEM means a system that supplies ultra-fine droplets of water or chemical dust suppressant by atomization through means of using compressed air or applying high pressure as specified by manufacturers to minimize dust.

(32) WIND-DRIVEN FUGITIVE DUST means particulate matter emissions from any disturbed surface area which is generated by wind action alone.

(33) WIND FENCE means a system consisting of a stand alone structure supporting a wind fence fabric. The wind fence fabric shall have maximum porosity of 20%.

(d) Requirements

The operator shall comply with the following requirements unless otherwise stated.

(1) Visible Emissions

(A) The operator of a facility shall not cause or allow the discharge into the atmosphere of visible emissions exceeding 10 percent opacity based on an average of 12 consecutive readings from any operation at the facility, except open piles, roadways and unpaved areas, using EPA Opacity Test Method 9.

(B) For open piles, roadways and other unpaved areas, the operator of a facility shall not cause or allow the discharge into the atmosphere of visible emissions exceeding 20 percent opacity based on an average of 12 consecutive readings; or 50 percent opacity based on 5 individual consecutive readings using SCAQMD Opacity Test Method 9B.

(C) The operator of a facility shall not cause or allow any visible dust plume from exceeding 100 feet in any direction from any operations at the facility.

(2) Loading, Unloading, and Transferring

(A) The operator shall conduct material loading and unloading to and from trucks, railcars, or other modes of material transportation through an enclosed system that is vented to SCAQMD permitted air pollution control equipment that meets the requirements in paragraph (d)(6) and subparagraph (d)(1)(A) and is operated during loading and unloading activities. In the event the system consists of a building, the enclosed building shall have openings with overlapping flaps, sliding doors or other equally effective devices, as approved by the Executive Officer to meet the requirement in subparagraph (d)(1)(A), which shall remain closed, except to allow trucks and railcars to enter and leave.

(B) The operator shall cover or enclose all conveying systems and enclose all transfer points. During all conveying activities, the enclosed transfer points and enclosed conveying systems shall be vented to a permitted air pollution control device that meets the requirements in subparagraph (d)(1)(A) and paragraph (d)(6) and is operated during all conveying activities. The enclosure shall have access doors to allow routine inspection and maintenance.

(C) The operator shall apply dust suppressants as necessary during material loading, unloading, and transferring activities, and at conveying system transfer points to dampen and stabilize the materials transported and prevent visible dust emissions generated to meet the requirement in subparagraph (d)(1)(A).

(D) The operator shall install and maintain as necessary dust curtains, shrouds, belt scrapers, and gaskets along the belt conveying system to contain dust, prevent spillage and carryback in order to minimize visible emissions.

(E) The operator shall use appropriate equipment including, but not limited to, stackers or chutes, as necessary, to minimize the height from which materials fall into storage bins, silos, hoppers or open stock piles and reduce the amount of dust generated to meet the requirements in paragraphs (d)(1) and (d)(6).

(3) Crushing, Screening, Milling, Grinding, Blending, Drying, Heating, Mixing, Sacking, Palletizing, Packaging, and Other Related Operations

(A) The operator shall enclose crushing, screening, milling, grinding, blending, drying, heating, mixing, sacking, palletizing, packaging and other related operations. The enclosed system shall be vented to permitted control equipment that meets the requirements in paragraph (d)(6) and subparagraph (d)(1)(A). The control equipment shall be operated during these operations.

(B) In lieu of the configuration described in subparagraph (d)(3)(A), the operator of a primary crusher installed and operated prior to November 4, 2005 may use wind fences on at least two sides of the primary crusher with one side facing the prevailing winds. The structure shall be equipped and operated with a wet suppression system. To implement this, the operator shall submit a permit modification application by May 4, 2006 for a primary crusher to enable the Executive Officer to develop permit conditions to ensure that this air pollution control system is designed and operated to minimize particulate emissions.

(C) The operator shall apply dust suppressants, as necessary, during all operations to dampen and stabilize the materials processed and prevent visible emissions generated to meet the requirements in subparagraph (d)(1)(A).

(4) Kilns and Clinker Coolers

The operator shall not operate the kilns and clinker coolers unless the kilns and clinker coolers are vented to air pollution control equipment that meets the requirements in paragraph (d)(6) and subparagraph (d)(1)(A).

(5) Material Storage

(A) An operator that stores raw materials and products in a silo, bin or hopper shall vent the silo, bin or hopper to an air pollution control device that meets the requirements in subparagraph (d)(1)(A) and paragraph (d)(6).

(B) No later than September 8, 2009, the operator shall conduct all clinker material storage and handling in an enclosed storage area that meets the requirements in subparagraph (d)(1)(A) and paragraph (d)(6). The enclosed storage area shall have opening(s) covered with overlapping flaps, and sliding door(s) or other equivalent device(s) approved by the Executive Officer, which shall remain closed at all times, except to allow vehicles to enter or exit. Prior to the completion and operation of the

enclosure, all clinker materials shall be stored and handled in the same manner as non-clinker materials as set forth in subparagraph (d)(5)(D).

(C) If clinker material storage and handling activities occur more than 1,000 feet from, and inside, the facility property-line, the operator may comply with all of the following in lieu of the requirements of subparagraph (d)(5)(B) no later than September 8, 2009:

(i) Utilize a three-sided barrier with roof, provided the open side is covered with a wind fence material of a maximum 20% porosity, allowing a removable opening for vehicle access. The removable wind fence for vehicle access may be removed only during minor or routine maintenance activities, the creation or reclamation of outside storage piles, the importation of clinker from outside the facility, and reclamation of plant clean-up materials. The removable opening shall be less than 50% of the total surface area of the wind fence and the amount of time shall be minimized to the extent feasible;

(ii) Storage and handling of material that is immediately adjacent to the three-sided barrier due to space limitations inside the structure shall be contained within an area next to the structure with a wind fence on at least two sides, with at least a 5 foot freeboard above the top of the storage pile to provide wind sheltering, and shall be completely covered with an impervious tarp, revealing only the active disturbed portion during material loading and unloading activities;

(iii) Storage and handling of other active clinker material shall be conducted within an area surrounded on three sides by a barrier or wind fences with one side of the wind fence facing the prevailing wind and at least a 5-foot freeboard above the top of the storage pile to provide wind sheltering. The clinker shall remain completely covered at all times with an impervious tarp, revealing only the active disturbed portion during material loading and unloading activities. The barrier or wind fence shall extend at least 20 feet beyond the active portion of the material at all times; and

(iv) Inactive clinker material may be alternatively stored using a continuous and impervious tarp, covered at all times, provided

records are kept demonstrating the inactive status of such stored material.

(D) For active open non-clinker material storage and handling, the operator shall comply with one of the following to meet the requirements of subparagraphs (d)(1)(B) and (d)(1)(C):

(i) Apply chemical dust suppressants to stabilize the entire surface area of the pile, except for areas of the pile that are actively disturbed during loading and unloading activities; or

(ii) Install and maintain a three-sided barrier or wind fences with one side facing the prevailing winds and with at least two feet of visible freeboard from the top of the storage pile to provide wind sheltering, maintain surface stabilization of the entire pile in a manner that meets the performance standards of subparagraphs (d)(1)(B) and (d)(1)(C), and store the materials completely inside the three-sided structure at all times; or

(iii) Install and maintain a three-sided barrier with roof, or wind fences with roof, to provide wind sheltering; maintain the open-side of the storage pile stabilized in a manner that meets the performance standards of subparagraphs (d)(1)(B) and (d)(1)(C), and store the materials completely inside the three-sided structure at all times; or

(iv) Install and maintain a tarp over the entire surface area of the storage pile, in a manner that meets the performance standards of subparagraphs (d)(1)(B) and (d)(1)(C), except for areas of the pile that are actively disturbed during loading and unloading activities. The tarp shall remain in place and provide cover at all times.

(E) All inactive non-clinker piles shall be stored and handled in the same manner as non-clinker materials, as set forth in subparagraph (d)(5)(D). The operator shall keep records demonstrating the inactive status of the non-clinker piles.

(F) For open storage piles subject to subparagraph (d)(5)(D), the operator shall apply chemical dust suppressants or dust suppressants during any material loading and unloading to/from the open piles; and re-apply chemical dust suppressants or dust suppressants to stabilize the disturbed surface areas of the open piles at the end of each work day in which loading and unloading activities were performed to meet the performance standards of subparagraphs (d)(1)(B) and (d)(1)(C) .

(6) Air Pollution Control Device

(A) The operator shall install and maintain an air pollution control system referred to in paragraphs (d)(2), (d)(3), (d)(4) and (d)(5) to meet the following performance standards measured with the approved source test in subdivision (g):

(i) an outlet concentration of 0.01 grain PM per dry standard cubic feet for equipment installed prior to November 4, 2005; and

(ii) a BACT outlet concentration not to exceed 0.005 grain PM per dry standard cubic feet for equipment installed on and after November 4, 2005.

(B) The operator shall install and maintain a baghouse ventilation and hood system that meets a minimum capture velocity requirement specified in the applicable standards of the U.S. Industrial Ventilation Handbook, American Conference of Governmental Industrial Hygienists, at the time of installation. If modification to the baghouse ventilation and hood system is required to meet the applicable standard, the operator shall be granted additional time up to December 31, 2006 to complete this process.

(C) The operator shall meet the requirements in paragraph (d)(6) by December 31, 2006 for pulse-jet baghouses, and by December 31, 2010 for non-pulse-jet baghouses.

(D) To show incremental progress towards the December 31, 2010 compliance date for non-pulse-jet baghouses, the operator shall submit to the Executive Officer a list of baghouse candidates for future modification or replacement by December 31, 2006. In addition, the operator shall submit a notification letter by December 31 of each year thereafter, starting in 2006, to demonstrate that the operator has completed at least 20% of the modification or replacement by 2006; 40% by 2007; 60% by 2008, 80% by 2009; and 100% by 2010.

(7) Internal Roadways and Areas

(A) Unpaved Roadways and Areas

(i) For haul roads used by haul trucks to carry materials from the quarry to different locations within the facility, the operator shall apply chemical dust suppressants in sufficient quantity and at least twice a year to stabilize the entire unpaved haul road surface; post signs at the two ends stating that haul trucks shall use these roads unless traveling to the maintenance areas; and enforce the speed

limit of 35 miles per hour or less to comply with the opacity limits in paragraph (d)(1).

(ii) For other unpaved roadways and areas, the operator shall apply chemical dust suppressants in sufficient quantity and at least twice a year to stabilize the surface, or apply gravel pad containing 1-inch or larger washed gravel to a depth of six inches; and enforce a speed limit of 15 miles per hour or less to comply with the opacity limits in paragraph (d)(1).

(B) Paved Roads

The operator shall sweep all internal paved roads at least once each regular work day or more frequently if necessary to comply with the opacity limits in paragraph (d)(1). Sweeping frequency may be reduced on weekends, holidays, or days of measurable precipitation provided that the operator complies with the opacity limits in paragraph (d)(1) at all times. Sweepers purchased or leased after November 4, 2005 shall be Rule 1186-certified sweepers.

(8) Track-Out

(A) The operator shall pave the closest 0.25 miles of internal roads leading to the public roadways and ensure that all trucks use these roads exclusively when leaving the facility to prevent track-out of dust to the public roadways and to comply with the opacity limits in paragraph (d)(1).

(B) If necessary to comply with the opacity limits in paragraph (d)(1), the operator shall install a rumble grate, truck washer, or wheel washer; and ensure that all trucks go through the rumble grate, truck washer or wheel washer such that the entire circumference of each wheel or truck is cleaned before leaving the facility.

(C) To prevent material spillage from trucks to public roadways and fugitive dust emissions during transport, a truck driver on the facility shall ensure that the cement truck hatches are closed and there is no track-out, and the operator shall provide truck cleaning facilities on-site.

(D) The operator shall provide, at least once each calendar year, the “Fugitive Dust Advisory” flyers prepared by the District to any company doing business with the facility and which is subject to the requirements in subparagraph (d)(8)(C).

(9) No Backsliding

To prevent any backsliding from the current level of control, the operator shall operate and maintain all existing equipment according to permit conditions stated in the permits approved by the Executive Officer prior to November 4, 2005 at all times.

(10) Compliance Monitoring Plan

(A) No later than June 8, 2009, the operator shall submit to the Executive Officer a complete compliance plan for wind monitoring and the monitoring, sampling, and analysis of hexavalent chromium, and pay a plan evaluation fee pursuant to Rule 306 – Plan Fees. The submitted plan will be disapproved if it does not meet the provisions of subparagraph (d)(10)(B). The operator shall resubmit an approvable plan within 30 days from date of disapproval; otherwise, the operator shall be deemed in violation of this provision.

(B) The monitoring plan submitted shall contain, at a minimum, the following:

(i) Siting and monitoring protocols that comply with EPA's and CARB's guidance and/or protocols for measurement of hexavalent chromium, wind direction, and wind speed. A minimum of three fence-line monitoring stations are required for hexavalent chromium: one upwind and one downwind of the facility under the common prevailing wind directions, and one subject to approval by the Executive Officer to ensure maximum effectiveness of the monitoring to the most potentially affected receptor, such as nearest residential or business receptors relative to clinker storage areas or potential hexavalent chromium emitting sources.

(ii) Breakdown provisions which include: (1) a statement that the operator will notify the Executive Officer in writing of the breakdown within 24 hours of its occurrence. If the breakdown occurs on a Friday, over a weekend, or on a national or state holiday observed by the facility, the facility shall report such breakdown on the following work day; (2) a repair schedule; and (3) an action plan with detailed measures to be taken by the operator to ensure that there will be at least 70% data capture at each site by each monitoring system;

(iii) Consent from the operator that allows the Executive Officer to conduct any co-located or audit sampling at any time;

(iv) Sampling analysis protocols that comply with EPA and CARB's appropriate guidance and/or protocols for hexavalent chromium. All samples shall be analyzed at a District-approved laboratory, which can be audited at any time; and

(v) Any other relevant data and information required by the Executive Officer.

(C) The Executive Officer shall approve or disapprove the complete plan within 60 days from the submittal date.

(D) The operator may file for a compliance monitoring plan amendment in the future relative to monitor siting or other elements of the plan as more site-specific data becomes available.

(11) Hexavalent Chrome Monitoring and Other Requirements

No later than six months from compliance plan approval or March 1, 2010, whichever occurs first, the operator of a cement manufacturing facility shall conduct hexavalent chromium ambient air monitoring as follows:

(A) The operator shall conduct ambient air monitoring for hexavalent chromium in accordance with the approved monitoring plan set forth in subparagraph (d)(10)(B) or (d)(10)(D), as applicable. The hexavalent chromium concentration from a 30-day rolling average at each monitoring station shall not exceed 0.70 nanograms per cubic meter (ng/m^3), excluding background. 24-hour sampling shall be conducted once every third day according to the EPA 1-in-3-day sampling calendar. For monitoring sample retrieval in which collection occurs on a weekend or facility observed national or state holiday, the sample may be collected the following business day.

(B) The operator may conduct 24-hour sampling once every six days for hexavalent chromium if there is no single exceedance of the 0.70 ng/m^3 level during 12 continuous months of monitoring. On this sampling schedule, the hexavalent chromium concentration from a 90-day rolling average at each monitoring station shall not exceed 0.70 ng/m^3, excluding background. If there is an exceedance while on this sampling schedule, sampling shall immediately revert back to once every three days. For monitoring sample retrieval in which collection occurs on a weekend or facility observed national or state holiday, the sample may be collected the following business day.

(C) For facilities that elect to comply with (d)(5)(C), any exceedance of the concentrations listed in clauses (d)(11)(A) or (d)(11)(B) will require

enclosure of all clinker materials storage and handling if the Executive Officer confirms, through wind event monitoring data, that the cement manufacturing facility is the source of violation. The facility operator may select one of the following enclosure schedule: 25% of the facility's five-year annual average clinker material stored and handled, by weight, no later than 12 months from the date of the exceedance; and an incremental 25% per subsequent year until completion; or complete the total enclosure within 24 months from the date of exceedance.

(12) Particulate Matter (PM10) Monitoring and Other Requirements

The operator of the cement manufacturing facility who accrues three or more approved notices of violation for an exceedance of the upwind/downwind level specified in Rule 403 within a 36-month period shall conduct PM10 ambient air monitoring. An amendment to the compliance monitoring plan to include PM10 monitoring protocols and procedures shall be filed within 90 days of the date of the third approved notice of violation. The monitoring equipment shall be installed and operated within 6 months from the date of modified plan approval and no later than one year from the date of the third approved notice of violation.

(A) The operator shall conduct continuous and real-time ambient air monitoring for PM10, using a continuous monitoring system, in accordance with a monitoring plan approved by the Executive Officer in a manner as set forth in subparagraphs (d)(10)(B) or (d)(10)(D), as applicable. The differences of PM10 concentrations from any two monitoring sites which represent upwind and downwind concentrations shall not exceed the amount and averaging time period specified in Rule 403.

(B) The operator shall apply dust suppressants on all openly stored non-clinker materials, unpaved roads, and unpaved areas within the facility, as well as take steps to decrease clinker dust, if the PM10 difference(s) set forth in Rule 403 are exceeded at any time.

(13) Wind Monitoring

(A) No later than September 8, 2009, the operator shall install and operate wind monitoring equipment to conduct hourly wind monitoring according to a protocol approved by the Executive Officer.

(B) On and after the date of operation of the wind monitoring equipment pursuant to subparagraph (d)(13)(A), the operator shall cease all open handling of clinker material for a two-hour period in the event that

instantaneous wind speeds exceed 25 miles per hour (mph), and if such wind speeds subsequently exceed 25 mph, a new two-hour period shall begin. During the aforementioned two-hour period, the facility would be exempt from the requirement of subparagraph (d)(1)(C) if the open handling of clinker material is ceased, provided that dust controls as required by District rules are applied; and unpaved roads are stabilized upon register of the high wind event via the wind monitoring equipment.

(e) Monitoring and Source Testing

(1) For the kilns and clinker coolers, the operator shall continuously monitor and record operating parameters including, but not limited to, flue gas flow rates and pressure drops across the baghouses to monitor baghouse performance and ensure compliance with the opacity limit in subparagraph (d)(1)(A).

(2) For all new baghouses greater than or equal to 10,000 actual cubic feet per minute, and for all existing bahouses of the top process particulate emitters as defined under subparagraph (c)(28)(A), the operator shall install, operate, calibrate and maintain a COMS or BLDS to monitor baghouse performance and ensure compliance with the opacity limit in subparagraph (d)(1)(A).

(3) The operator shall conduct visible emission observations with EPA Method 22 for process equipment equipped with air pollution control equipment at the following frequency:

(i) Weekly for top process particulate emitters defined under subparagraph (c)(28)(B) that are not equipped with BLDS or COMS;

(ii) Monthly for top process particulate emitters defined under subparagraph (c)(28)(B) that are equipped with BLDS or COMS; and

(iii) Monthly for other process equipment.

(4) The operator shall monitor and record pertinent operating parameters, such as pressure drops, according to the Operation and Maintenance Procedure in paragraph (e)(12) to monitor the performance of air pollution control equipment and ensure compliance with the opacity limit in subparagraph (d)(1)(A).

(5) If the operator receives an alarm from the BLDS, or COMS, the operator shall immediately conduct an EPA Method 22 test and implement all necessary corrective actions to minimize emissions.

(6) If the operator observes visible emissions during any EPA Method 22 test, the operator shall immediately implement all necessary corrective actions to minimize

emissions, and conduct EPA Method 9 test within one hour of any observation of visible emissions.

(7) For the kilns and clinker coolers, the operator shall conduct an annual compliance source test in accordance with the test methods in subdivision (g) to demonstrate compliance with the emission limit(s) in subdivision (d). The first annual compliance source test in accordance with an approved source test protocol shall be conducted within ninety (90) calendar days after the compliance date specified in subdivision (d). The operator shall submit a source test protocol to the Executive Officer no later than sixty (60) calendar days prior to the proposed test date for the Executive Officer's approval for the first compliance source test. The testing frequency may be reduced to once every 24 calendar months if the two most recent consecutive annual source tests demonstrate compliance with the limits. Upon notification by the Executive Officer, the testing frequency shall be reverted back to annual testing if any subsequent source test fails to demonstrate compliance with the limits. In lieu of annual testing, any operator who elects to use all verified filtration products in its baghouses shall conduct a compliance test every five years.

(8) By February 4, 2006, the operator shall provide the Executive Officer a list of the top process particulate emitters as defined under subparagraph (c)(28)(B), and the proposed testing schedule for these equipment. The operator shall conduct compliance source tests on representative baghouses within each process system and submit test results for these processes every 5 years, with at least two source tests conducted in any calendar year. If there are any changes to the list of equipment to be tested or the testing schedule, the operator shall notify the Executive Officer 60 calendar days before the test date.

(9) The operator shall not be required to test non-operational equipment, which is not in operation for at least 6 consecutive months prior to scheduled testing, as indicated in paragraph (e)(8) provided that the operator shall conduct such test within one month after resuming operation.

(10) During any compliance source test, the operator shall monitor and record, at a minimum, all operating data for the selected operating parameters of the control equipment and the process equipment and submit this data with the test report.

(11) The operator shall submit a complete test report for any compliance source test to the Executive Officer no later than sixty (60) calendar days of completion of the source test.

(12) Operation and Maintenance Procedures

(A) The operator shall develop and implement an Operation and Maintenance Procedure to ensure that the performance of the air pollution control equipment is continuously maintained and operated. The Operation and Maintenance Procedure shall include, at a minimum, information on monitoring and recordkeeping procedures, routine maintenance procedures, corrective and preventive actions for the air pollution control equipment, and training related to EPA Method 22, EPA Opacity Test Method 9 and SCAQMD Opacity Test Method 9B, and other applicable information to demonstrate compliance with this rule.

(B) The operator shall develop and implement an Operation and Maintenance Procedure that would require sufficient maintenance of internal roadways and areas, prompt cleanup of any pile of material spillage or carry-back, and application of chemical dust suppressant or other dust control methods to maintain surface stabilization of the open piles, spillage and carry-back to ensure compliance with the opacity standards in paragraph (d)(1) at all times.

(C) The operator shall develop and maintain the Operation and Maintenance Procedures described under subparagraphs (e)(12)(A) and (e)(12)(B) within 6 months after November 4, 2005, and shall make the Operation and Maintenance Procedures available to the Executive Officer upon request.

(f) Reporting and Recordkeeping

(1) The operator shall maintain all records and information required to demonstrate compliance with the provisions of this rule in a manner approved by the Executive Officer for a period of at least five years which shall be made available to the Executive Officer upon request.

(2) The operator of a facility shall keep, at a minimum, the following records to demonstrate compliance:

(A) Daily records of applying chemical dust suppressants, watering, sweeping and cleaning activities;

(B) Appropriate records, on at least a monthly basis, for primary crushers, kilns, raw mills, and finish mills, production records of clinkers and cements and records of raw materials delivered to the facility in order to determine emissions;

(C) Test reports to demonstrate compliance with the emission standards in subdivision (d) including, but not limited to, PM emission rates, and opacity readings;

(D) Records of equipment malfunction and repair for the air pollution control equipment of the top process particulate emitters specified under subparagraph (c)(28)(B);

(E) Daily records of all material handling, including loading and unloading, and storage pursuant to paragraphs (d)(2) and (d)(5);

(F) Monitoring data pursuant to subparagraphs (d)(11), and (d)(12) as applicable, and supporting documentation, including, but not limited to chains of custody and laboratory results;

(G) Hourly records of wind speed and direction pursuant to subparagraph (d)(13);

(H) Records of all maintenance activities pursuant to clause (d)(5)(C)(i) and paragraph (h)(7), including any equipment testing after the repairs and duration of wind fence removal;

(I) Records of clinker pile reclamation, importation, and transport pursuant to clause (d)(5)(C)(i), including duration of wind fence removal; and

(J) Records of all vehicle traffic and monthly average road trips pursuant to paragraph (h)(4).

(3) Monitoring data shall be reported monthly to, and in an electronic format specified by, the Executive Officer. In the event the facility operator finds that an exceedance of the levels specified in subparagraphs (d)(11)(A), (d)(11)(B), or (d)(12)(A) as applicable has occurred, the operator shall report in writing such finding to the Executive Officer, and follow up with a phone call the next business day after such finding.

(g) Test Methods and Calculation

(1) The operator shall use the following source test methods, as applicable, to determine the PM emission rates. All source test methods referenced below shall be the most recent version issued by the respective organization. All test results in units of grains/dscf shall be determined as before the addition of any dilution or air, if present, that was not a part of the stream(s) processed by the device that was tested.

(A) SCAQMD Source Test Method 1.1 or 1.2 – Velocity and Sample Traverse Points;

(B) SCAQMD Source Test Method 2.1 or 2.3 – Stack Gas Flow Rate;

(C) SCAQMD Source Test Method 3.1 – Stack Gas Density;

(D) SCAQMD Source Test Method 4.1 – Stack Gas Moisture;

(E) SCAQMD Source Test Method 5.2 or 5.3 - Determination of Particulate Matter Emissions in which reagent grade acetone shall be used to recover samples from the components of the sampling train located before the particulate filter;

(F) EPA Source Test Method 5 with the impinger analysis may be used in lieu of SCAQMD Source Test Method 5.2 or 5.3.

(G) EPA Source Test Method 5D with the impinger analysis may be used to measure PM emissions from positive pressure fabric filters.

(2) Measurement of particulate matter emissions from the cement kiln shall provide for a correction of sulfur dioxide emissions collected in the particulate matter samples. Any measured gaseous sulfur dioxide emissions shall be excluded from the measurement of particulate matter emissions by subtracting from the mass of material collected in any impingers a mass equivalent to the amount of measured sulfur dioxide emissions based upon sulfuric acid dihydrate as specified in SCAQMD Source Test Methods 5.2 or 5.3.

(3) Source tests for PM shall be taken and the average of the samples shall be used to determine the applicable emission rate in accordance with the following requirements:

(A) Simultaneous duplicate samples shall be obtained unless the operator demonstrates to the satisfaction of the Executive Officer that it is not physically feasible to do so, in which case the operator shall take sequential triplicate samples;

(B) All samples must have minimum sampling volume of 120 cubic feet or a minimum PM catch of 6 milligrams per sample shall be collected;

(C) For duplicate samples, the source test shall be deemed invalid if the difference between the two samples is greater than 35% of the average of the two samples in the applicable units specified in subdivision (d) and if the difference between the sample catches normalized to the average sampling volume is greater than 3.5 milligrams. If the source test is deemed invalid, the test shall be repeated; and

(D) For triplicate samples, upon approval of the Executive Officer or designee, if the operator can demonstrate that the process conditions including, but not limited to, the throughput, quantity, type, and quality of all feedstock

to the equipment process, and the emission control equipment conditions have not changed throughout the sequential test period, then the operator may apply the Dixon outlier test at the 95% significance level to check for and discard one outlier, and shall use the average of the two remaining samples to determine PM emissions.

(4) The operator may use alternative or equivalent source test methods, as defined in U.S. EPA 40 CFR 60.2, if they are approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.

(5) The operator shall use a test laboratory approved under the SCAQMD Laboratory Approval Program for the source test methods cited in this subdivision if such approved lab exists. If there is no approved laboratory, then approval of the testing procedures used by the laboratory shall be granted by the Executive Officer on a case-by-case basis based on appropriate SCAQMD protocols and procedures.

(6) The operator shall use the methods specified in the SCAQMD Rule 403 Implementation Handbook to determine threshold friction velocity and stabilized surface; and EPA Opacity Test Method 9 and Method 22, or SCAQMD Opacity Test Method 9B to determine opacity.

(7) When more than one source test method or set of source test methods are specified for any testing, the application of these source test methods to a specific set of test conditions is subject to approval by the Executive Officer. In addition, a violation established by any one of the specified source test methods or set of source test methods shall constitute a violation of the rule.

(h) Exemptions

(1) The operator is exempt from installing a three-sided barrier or enclosure, or using the test methods in the SCAQMD Rule 403 Implementation Handbook for the demonstration of surface stabilization for open storage piles if 90% of the pile's mass consists of materials that are larger than ½ inch. Applicability of this exemption shall be determined through the measurement of any composite sample of at least 10 pounds taken from a minimum depth of 12 inches below the pile surface, and from various locations in the pile, but not from within 12 inches from the base of the pile. This exemption is limited to open storage piles that contain only materials other than clinker, providing that such piles meet the performance standards in subparagraphs (d)(1)(B) and (d)(1)(C).

(2) The operator is exempt from the use of chemical dust suppressants for internal unpaved roads if the use of applicable chemical dust suppressants on that specific unpaved road violates the rules and/or regulations of the local Water Quality Control Board or other government agency provided the operator uses water in sufficient quantity and frequency to stabilize the road surface and the operator notifies the Executive Officer in writing 30 days prior to the use of water.

(3) Haul trucks are not required to use designated roads for haul trucks if they travel on unpaved roads complying with the requirements in clause (d)(7)(A)(ii).

(4) The operator is exempt from the use of chemical dust suppressants in clause (d)(7)(A)(ii) where a road is used less than a monthly average of twice a day by a designated vehicle at a speed limit less than 15 miles per hour.

(5) The operator is exempt from the use of chemical dust suppressants on unpaved areas specified in clause (d)(7)(A)(ii) during a period for demolition activities of no longer than six (6) calendar months provided that the operator uses water in sufficient quantity and frequency to stabilize the unpaved areas, meets the opacity requirements in subparagraphs (d)(1)(B) and (C) at all times, and keeps sufficient records to demonstrate compliance.

(6) With the exception of primary crushing, open material storage piles, and covers and existing enclosures for conveying systems, the provisions of this rule shall not apply to equipment or operations that are subject to Rule 1157 or Rule 1158 located at the cement manufacturing facilities, provided that there is no backsliding from the current level of control as stated in the permits approved by the Executive Officer prior to November 4, 2005 or as required under Rule 1157 and Rule 1158, whichever is more stringent.

(7) The operator is exempt from the requirements in clause (d)(5)(C)(i) in the event the wind fence material needs to be removed to perform periodic maintenance of the clinker crane or building. During the time the wind fence material is removed, the clinker crane shall not actively transport clinker material in the building, except for post maintenance equipment testing.

(8) During day(s) in which the instantaneous wind speeds exceed 25 mph using the on-site wind monitoring equipment pursuant to (d)(13)(A), the operator is exempt from the hexavalent chromium and PM10 averaging provisions of subparagraphs (d)(11)(A) and (d)(11)(B), and (d)(12)(A) as applicable, provided all open handling of clinker material is ceased and dust controls are applied pursuant to subparagraph (d)(13)(B). If the Executive Officer determines a significant potential of re-entrained hexavalent chromium containing dust from the facility

exists during such high wind events, the operator shall implement an approved Mitigation Monitoring Plan to minimize exposure to the surrounding area and to ensure implementation of all applicable dust control measures to meet the requirements of subparagraphs (d)(11)(A) and (d)(11)(B), and (d)(12)(A), as applicable. The Mitigation Monitoring Plan is due 90 days, inclusive of appropriate plan fees pursuant to Rule 306, after notification by the Executive Officer.

(Adopted January 7, 2005)(Amended September 8, 2006)

RULE 1157. PM10 EMISSION REDUCTIONS FROM AGGREGATE AND RELATED OPERATIONS

(a) Purpose

The purpose of this rule is to reduce PM10 emissions from aggregate and related operations.

(b) Applicability

This rule applies to all permanent and temporary aggregate and related operations, unless otherwise exempt under subdivision (h).

(c) Definitions

(1) AGGREGATE OPERATIONS are defined as operations that produce sand, gravel, crushed stone, and/or quarried rocks.

(2) AGGREGATE OR RELATED MATERIAL means material that is produced and/or used by the aggregate and related operations.

(3) AGGREGATE TRUCKS mean trucks with open tops, used to transport the products of the aggregate and related operations to other processors, retailers, or end users.

(4) BLASTING OPERATIONS are defined as operations that break or displace rock by means of explosives.

(5) BUNKER is defined as a three-sided enclosure of which one side may be a windscreen with a maximum porosity of 20%.

(6) CARRY-BACK is defined as materials that fall off the underside of the conveyor belt and accumulate on the ground.

(7) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency.

(8) CONVEYOR means an above-ground, outdoor conveyor system to move materials from any location, process, or equipment to another in a continuous fashion.

(9) DISTURBED SURFACE AREA means a portion of a surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential

for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise completely covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(10) DUST SUPPRESSANTS are water, hygroscopic materials, or chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(11) ENCLOSED SCREENING EQUIPMENT means screening equipment where the top portion of the equipment is enclosed, except for the area where materials enter the screening equipment.

(12) END OF WORK DAY means the end of a working period that may include one or more work shifts, but no later than 8 p.m.

(13) EQUIPMENT BREAKDOWN means an unforeseeable impairment of an air pollution control equipment or related operating equipment which causes a violation of any emission limitation or restriction prescribed by this rule or by State law and which: is not the result of neglect or disregard of any air pollution control law, rule, or regulation; is not a recurrent breakdown of the same equipment; and, does not constitute a nuisance as defined in the State of California Health and Safety Code, Section 41700, with the burden of proving the criteria of this section placed upon the person seeking to come under the provisions of this rule.

(14) EXISTING FACILITY/OPERATION means a facility or an operation that has begun to operate, or has an application for Permit to Construct that has been deemed complete by the Executive Officer on or before December 3, 2004.

(15) FRONT-END LOADER means a wheeled or tractor loader, with a bucket or fork hinged to lifting arms that loads or digs entirely at the front end.

(16) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(17) GEOTEXTILE means permeable textile, including but not limited to, mesh, net, or even grid that is used in contact with soil or rocks with the purpose of adding stability to the gravel pad.

(18) HAUL ROAD means an unpaved road that is used by haul trucks to carry materials from the quarry to different locations within the facility.

(19) HAUL TRUCK means a diesel heavy-duty truck having a minimum capacity of 50 tons and is used to transport aggregates within the facility.

(20) HIGH WINDS means instantaneous wind speeds exceed 25 miles per hour.

(21) INFREQUENT MINING OPERATIONS mean operations that have state mine IDs, approved reclamation plans and bonding as required by State Mining and Reclamation Act of 1975, and only operate on an average of 52 days per year over the past three years from December 3, 2004.

(22) INTERNAL ROADS mean private paved and unpaved roads within the facility's property boundary.

(23) LOADING means an activity to move materials from any location to a truck.

(24) MATERIAL SPILLAGE means material inadvertently lost or scattered by spilling.

(25) MIXER TRUCK means truck that mixes cement and other ingredients in a drum to produce concrete.

(26) NEW FACILITY/OPERATION means a facility or an operation that has not begun to operate, or does not have an application for Permit to Construct that has been deemed complete by the Executive Officer as of December 3, 2004.

(27) NON-POROUS WALLS are walls that have zero percent porosity. Non-porous walls include but are not limited to concrete and steel walls.

(28) OPEN STORAGE PILE is any accumulation of aggregate or related material which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(29) OTHER DUST CONTROL METHODS including but not limited to baghouses, filter bags, enclosures, and partial enclosures.

(30) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but

excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(31) PERMANENT FACILITY/OPERATION means a facility or an operation that is performed at one physical location for more than two years.

(32) PM10 means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(33) PRODUCTION WORK SHIFT is an eight hour operating period based on the 24 hour operating schedule.

(34) RELATED OPERATIONS are defined as operations that use sand, gravel, cement, crushed stone, and/or quarried rocks in their products, or crush miscellaneous base, and inert landfills that handle construction/demolition debris.

(35) RETURNED PRODUCTS mean left over concrete or asphalt products that were not used at the job sites and were brought back to the facility.

(36) RUMBLE GRATE is a system where the vehicle is vibrated while traveling over grates with the purpose of removing dust and other debris.

(37) SCALPING SCREEN means a screen where debris and oversized materials are rejected.

(38) SENSITIVE RECEPTOR is a school (kindergarten through grade 12), licensed daycare center, hospital, or convalescent home.

(39) SILO means an elevated storage container, with or without a top, that releases material through the bottom.

(40) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(41) STAGING AREA is a place where aggregate and mixer trucks temporarily queue for their loading or unloading turn.

(42) TEMPORARY FACILITY/OPERATION means a facility that operates or an operation that is performed at one physical location for two years or less. Temporary facility/operation includes portable facility/operation.

(43) TRACK-OUT means any material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that has been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(44) TRANSFER means an activity to move materials from any location to any location within a facility.

(45) TRANSFER POINT is a point in a conveying system where the materials are dropped onto a stockpile, equipment, or another conveyor, or where a conveyor belt enters or exits the processing equipment.

(46) TRUCK TRIMMING AREA means an area where trucks that are exiting a facility/operation are inspected to determine whether the amount and type of loaded material is correct. Any excess material is removed in this area of the facility/operation.

(47) TRUCK WASHER means a system that is used to wash the entire surface and the tires of a truck.

(48) TUNNEL FEED is underground belt conveyor system to move the materials from any location to any location within a facility in a continuous fashion.

(49) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer and the U.S. EPA.

(50) UNLOADING means an activity to release the materials from a truck or a front-end loader to any location located inside the facility.

(51) UNPAVED ROADS mean any roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by Federal, State, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public. Internal unpaved roads are private unpaved roads within the facility's property boundary.

(52) WATER IRRIGATION SYSTEM means devices that are mounted above an open storage pile to deliver water to a pile.

(53) WHEEL WASHER means a system that is capable of washing the entire circumference of each wheel of the vehicle.

(54) VALIDATED NOTICE OF VIOLATION means a notice of violation issued by a District enforcement officer that has been finally resolved by means of either a settlement with the alleged violator resulting in the payment of a civil penalty in any amount or a court judgment imposing civil or criminal liability on the alleged violator based on the conduct alleged in the notice of violation.

(d) Requirements

Unless otherwise stated, effective July 1, 2005, aggregate and related operations shall comply with the following requirements:

(1) General Performance Standards

(A) The operator of a facility/operation shall not cause or allow:

(i) a discharge into the atmosphere of, fugitive dust emissions exceeding 20 percent opacity from any activity, equipment, storage pile, or disturbed surface area, based on an average of 12 consecutive readings, using the SCAQMD Opacity Test Method No. 9B; or

(ii) discharges into the atmosphere of, fugitive dust emissions exceeding 50 percent opacity from any activity, equipment, storage pile, or disturbed surface area, based on five individual, consecutive readings, using the SCAQMD Opacity Test Method No. 9B, effective December 3, 2005; or

(iii) any visible fugitive dust plume from exceeding 100 feet in any direction from any activity, equipment, storage pile, or disturbed surface area.

(B) The operator of a facility/operation shall promptly remove any pile of material spillage on any internal paved roads. Alternatively, the operator shall maintain in a stabilized condition the pile of material spillage with dust suppressants and remove it by the end of each day.

(C) The operator of a facility/operation shall maintain in a stabilized condition all other piles of material spillage and carry-back with dust suppressants until removal.

(D) The operator of a facility/operation shall use sufficient dust suppressants or other dust control methods as necessary to meet the performance standards in subparagraph (d)(1)(A).

(E) Where applicable, the operator shall install a gravel pad that:

(i) Contains one-inch or larger washed gravel maintained to a depth of six inches;

(ii) Has a geotextile lining underneath the washed gravel; and

(iii) Is flushed with water or is completely replaced, as necessary to comply with the track out threshold set forth in Rule 403.

(2) Loading, Unloading, and Transferring

The operator of an existing permanent or temporary facility/operation shall use dust suppressants or other dust control methods at each emission source during loading, unloading, or transferring activities of materials as necessary to meet the performance standards in subparagraph (d)(1)(A).

(3) Conveyor

The operator of a facility/operation using a conveyor shall apply dust suppressants or other dust control methods at the conveyor including all transfer points where materials are released as necessary to meet the performance standards in subparagraph (d)(1)(A).

(4) Crushing Equipment

The operator of a facility/operation conducting crushing activities of materials shall use baghouses to control PM10 emissions. Alternatively, the operator may apply dust suppressants or other dust control methods at the crusher including all discharge points as necessary to meet the performance standards in subparagraph (d)(1)(A).

(5) Screening Equipment

The operator of a facility/operation conducting outdoor screening activities of materials shall use enclosed screening equipment that is equipped with a baghouse. Alternatively, the operator may apply dust suppressants or other dust control methods at the screening equipment including all discharge points during such activities as necessary to meet the performance standards in subparagraph (d)(1)(A).

(6) Storage Piles

(A) The operator of a facility/operation shall maintain in a stabilized condition the entire surface area of the open storage piles of materials, except for areas of the piles that are actively disturbed during the loading and/or unloading activities. Alternatively, the operator may:

(i) store materials in a silo or a bunker;

(ii) maintain at least two feet of freeboard from the highest portion of the piles; and

(iii) for the bunker, stabilize the sides of the pile that are not shielded by non-porous walls.

(B) At the end of each work day in which loading or unloading activities of materials were performed, the operator of a facility/operation shall re-apply dust suppressants to re-stabilize disturbed areas of the piles.

(C) The operator of a facility/operation shall not allow any open storage piles of materials to be greater than eight feet height if such piles are located within 300 feet of off-site occupied buildings or houses. Alternatively, the operator of a facility/operation shall operate a water irrigation system to maintain in a stabilized condition the entire surface of the piles.

(7) Internal Roads

(A) Unpaved Haul Roads

(i) The operator of a facility/operation shall apply chemical stabilizers on the internal unpaved haul roads so that the surface is maintained in a stabilized condition.

(ii) The operator of a facility/operation shall post signs at the two ends of the internal unpaved haul roads, stating that haul trucks shall use these roads unless traveling to the maintenance areas.

(B) Unpaved Non-Haul Roads and Parking and Staging Areas

The operator of a facility/operation shall apply chemical stabilizers on such unpaved roads and parking and staging areas so that the surface is maintained in a stabilized condition, or apply a gravel pad that meets the criteria set forth in subparagraph (d)(1)(E) on

the entire unpaved non-haul road and/or the parking and staging areas.

(C) Paved Roads

(i) The operator of a facility/operation with a minimum of 60 aggregate and/or mixer trucks exiting the facility on any day shall sweep the internal paved roads with a street sweeper by the end of each production work shift.

(ii) The operator of a facility/operation with less than 60 aggregate and/or mixer trucks exiting the facility on any day shall sweep the internal paved roads with a street sweeper by the end of every other work day. On the days that the roads are not swept, the operator shall apply water as necessary to comply with subparagraph (d)(1)(A) on at least 100 feet of paved roads, or the entire length of paved roads leading to an exit to public paved roads, if such roads are less than 100 feet long.

(iii) Sweepers that are purchased after December 3, 2004 shall meet the criteria of PM10-efficient Rule 1186-certified sweepers.

(iv) The operator of a new facility/operation shall use Rule 1186-certified-sweepers to sweep the internal paved roads.

(8) Track-Out

(A) The operator of a facility/operation and the drivers must take all reasonable steps to ensure that all loads on aggregate trucks are leveled and maintained with at least 6 inches of freeboard, and that the load is stabilized by applying dust suppressants in sufficient quantities so that the performance standards in subparagraph (d)(1)(A) are met, unless the driver tarps or suitably covers the load prior to entering paved public roads or prior to the use of a rumble grate and/or wheel washer.

(B) The operator of a facility/operation must post signs at the exits of the facility to require all loads to comply with the requirements in subparagraph (d)(8)(A).

(C) Effective December 3, 2005, the operator of a facility/operation not covered under subparagraph (d)(8)(D) shall install and utilize a

rumble grate, a wheel washer, or a truck washer in accordance with the following:

(i) The rumble grate, the wheel washer, or the truck washer shall be located no less than 30 feet prior to each exit that is used by aggregate and/or mixer trucks and leading to a paved public road;

(ii) The operator must ensure that all aggregate and mixer trucks leaving the facility go through the rumble grate, the wheel washer, or the truck washer;

(iii) The operator shall post a sign by the rumble grate, the wheel washer, or the truck washer to designate the speed limit to 5 miles per hour for using such control equipment; and

(iv) If the internal road from the rumble grate, the wheel washer, or the truck washer to any paved public road is not paved, the operator shall apply a gravel pad that meets the criteria set forth in subparagraph (d)(1)(E) to such roads.

(v) An operator is not subject to clause (d)(8)(C)(i) if he can demonstrate to the Executive Officer, by July 1, 2005, that there is not adequate space for 30 feet of roadway and that a rumble grate, a wheel washer, or a truck washer at a shorter distance will be adequate to prevent track out of dust to the public road. The operator of a new, temporary facility/operation shall provide such demonstration to the Executive Officer prior to the beginning of its operation.

(D) Effective December 3, 2005, the operator of a new permanent facility/operation with land size in excess of 25 acres or with a designed daily throughput of 750 tons, and the operator of an existing permanent facility/operation with a minimum of 60 aggregate and/or mixer trucks exiting the facility on any day shall install and utilize a rumble grate and a wheel washer in accordance to the following:

(i) The rumble grate and the wheel washer shall be located no less than 30 feet prior to each exit that is used by aggregate and/or mixer trucks and leading to a paved public road.

The rumble grate shall be located within 10 feet from the wheel washer.

(ii) The operator must ensure that all aggregate and mixer trucks leaving the facility go through the rumble grate first and then, the wheel washer.

(iii) The operator shall post a sign by the rumble grate to designate the speed limit to 5 miles per hour for traveling over the rumble grate and wheel washer.

(iv) The operator shall pave the internal roads from the rumble grate and the wheel washer to the facility exits leading to paved public roads.

(v) The operator must ensure that all aggregate and mixer trucks stay on the internal paved roads between the wheel washer and the facility exits leading to paved public roads.

(vi) An operator is not subject to clause (d)(8)(D)(i) if he can demonstrate to the Executive Officer, by July 1, 2005, that there is not adequate space for 30 feet of roadway and that a rumble grate and a wheel washer at a shorter distance will be adequate to prevent track out of dust to the public road. The operator of a new, permanent facility/operation shall provide such demonstration to the Executive Officer prior to the beginning of its operation.

(E) The operator of a facility/operation shall provide the "Fugitive Dust Advisory" information prepared by the District to the aggregate and/or mixer truck company and/or broker at least once each calendar year.

(9) The operator of a new permanent facility/operation shall comply with all requirements set forth in this rule and apply Best Available Control Technology required by the Executive Officer.

(10) New and/or modified equipment shall comply with 40 CFR Part 60, Subpart I and/or 40 CFR Part 60, Subpart OOO as appropriate.

(e) Recordkeeping:

The operator of a facility/operation shall keep the following records on-site for 3 years, or 5 years for Title V facility, and make such records available to the Executive Officer upon request:

(1) Records of watering and sweeping schedule for internal paved roads;
(2) Records of aggregate and/or mixer trucks exiting the facility;
(3) Records of "Fugitive Dust Advisory" information distribution;
(4) Records of new equipment initial start-up and/or existing equipment start-up after a repair to fix an equipment breakdown if seeking exemption pursuant to subparagraphs (h)(1)(B) and/or (h)(1)(C);
(5) Records of scheduled maintenance activities if seeking exemption pursuant to subparagraph (h)(1)(A);
(6) Records of aggregate materials that meet the descriptions in subparagraphs (h)(2)(A) and (h)(2)(B); and
(7) Records of operating days if seeking exemption pursuant to subparagraph (h)(10)(D).

(f) Test Methods

The following test methods shall be used to determine compliance with this rule:

(1) SCAQMD Opacity Test Method No. 9B
(2) The Stabilized Surface Test Method included in the SCAQMD Rule 403 Implementation Handbook.

(g) Additional Requirements Triggered by Recurrent Violation:

(1) The operator of an existing facility located within 500 meters of off-site occupied buildings or houses or a sensitive receptor, who accrues three or more validated notices of violation for causing or allowing fugitive dust emissions exceeding the opacity limits in clauses (d)(1)(A)(i) as measured by the test methods in (f), or a visible fugitive dust plume exceeding 100 feet in any direction, issued on separate days for violations from the same emission source at the facility in any continuous twelve month period ("recurrent violations") starting from December 3, 2005 shall, within 30 days of the third notice of violation being validated, submit an emission reduction plan to the Executive Officer that meets the following requirements:
    (A) The plan must propose additional emission control measures sufficient to remedy the causes of the recurrent violations and prevent future violations; and
    (B) It must provide for implementation of the specified additional control measures at the earliest practicable date.

(2) The Executive Officer shall approve the emission reduction plan within 30 days of receipt of a complete plan if it is determined that implementation will likely remedy the causes of the recurrent violations. The Executive Officer may impose additional conditions in the plan if it is determined necessary to remedy the causes of the recurrent violations, however, the Executive Officer may not require, as a condition to approving an emission reduction plan under this paragraph, an operator to implement control measures that are economically or technologically infeasible, that do not directly address the cause of the recurrent violations, or that require the operator to take responsibility for the conduct of a third party over whom the operator has no legal control. A disapproval or conditional approval of a plan by the Executive Officer may be appealed to the Hearing Board.

(3) The Executive Officer shall disapprove any plan that does not demonstrate a substantial likelihood of preventing violations in the future. If a plan is disapproved, the responsible party shall submit a revised plan which cures the defects within 30 days of receipt of notice of disapproval.

(h) Exemptions

(1) The following activities will be exempt from requirements set forth in subparagraph (d)(1)(A):

(A) The first 8 hours of the new equipment initial start-up and the first 2 hours of the equipment start-up after a repair to fix an equipment breakdown or after a maintenance activity scheduled at least 48 hours in advance by the operator of a facility.

(B) Blasting operations.

(2) During high winds, the operator of a facility/operation will be exempt from the requirements in subparagraph (d)(1)(A) if:

(A) All activities, including aggregate excavation, production, loading and unloading activities, and material transport, are ceased, except for dust controls as required by District rules; or

(B) All excavation and earthmoving operations, except for underwater dredging and the transporting of dredged materials to the surge pile, and aggregate production (but not loading or transport) are ceased, provided:

(i) dust controls as required by District rules are applied; and

(ii) unpaved roads have had chemical stabilizers applied prior to the wind event, or where unpaved roads have not had chemical stabilizers applied, water is applied twice per hour during active operations; and

(iii) within fifteen (15) minutes of each loading activity, water is applied to un-stabilized areas of open storage piles that will be actively disturbed during loading; or

(C) The only activities being conducted at ready-mixed concrete or hot mix asphalt facilities are those activities that produce materials for use in construction projects which are being paved or poured during high winds, provided that dust controls as required by District rules are applied.

(3) Scalping screens will be exempt from the enclosure required in paragraph (d)(5).

(4) The operator of a facility/operation is exempt from the use of chemical stabilizers for internal unpaved roads if the use of applicable chemical dust suppressants on those specific unpaved roads violates the rules and/or regulations of the local Water Quality Control Board or other government agency. Alternatively, the operator of a facility/operation may use water, proving that:

(A) Water is used in sufficient quantity and frequency on those specific internal unpaved roads so that the surface is maintained in a stabilized condition; and

(B) The operator notifies the Executive Officer in writing 30 days prior to the use of water and demonstrates that the use of chemical was not allowed on those specific unpaved roads.

(5) Empty haul trucks traveling to and from maintenance areas are exempt from the requirement to use internal unpaved haul roads if they travel on internal unpaved non-haul roads that comply with the requirement in subparagraph (d)(7)(B).

(6) The unpaved non-haul roads will be exempt from the requirement in subparagraph (d)(7)(B) if such roads are used less than twice a day, and signs are posted on such roads to restrict speed limit to 15 miles per hour and to restrict traffic to such vehicles only.

(7) Carry-back that is generated by the tunnel feed will be exempt from the requirement set forth in subparagraph (d)(1)(C).

(8) Truck trimming areas are exempt from the requirement in subparagraph (d)(1)(C).

(9) Facilities where aggregate trucks are not used to carry aggregate or related materials to and off the facility property are exempt from the requirements in paragraph (d)(8).

(10) The following are not required to install and operate a wheel washer:

(A) Facilities that have their internal roads all paved and with the exception of returned products, their aggregate or related materials metered directly to a ready-mix or hot mix asphalt truck. The facilities may accept returned products and are still qualified for the exemption from a wheel washer. The facilities are instead required to have a rumble grate or a truck washer and comply with subparagraph (d)(8)(C).

(B) Facilities with less than 5 acres in land size and handle recycled asphalt and recycled concrete exclusively, provided the facility installs a rumble grate, comply with clauses (d)(8)(C)(i) through (d)(8)(C)(iii), and applies a gravel pad that meets the criteria set forth in subparagraph (d)(1)(E) on the entire unpaved non-haul roads leading to a paved public road.

(C) Facilities that pave a minimum of ¼ mile from the rumble grate to the facility exit leading to a paved public road.

(D) Facilities that are infrequent mining operations, provided they install a rumble grate and apply a gravel pad that meets the criteria set forth in subparagraph (d)(1)(E) for a distance of no less than 100 feet from the rumble grate to the facility exit leading to a paved public road, and keep records in accordance with paragraph (e)(6). The facility shall inform the District in the case that they operate more than 52 days per year based on the average of a rolling 3 year period after December 3, 2004. In this case, the facility shall comply with the requirements set forth in paragraph (d)(8).

(11) The operator of a facility/operation is exempt from using the test methods set forth in paragraph (f)(2) for the demonstration of the surface

stabilization of open storage piles where 90% of their volume contain materials that are larger than ½ inch product, providing such piles meet the performance standards in subparagraph (d)(1)(A).

(i) Alternative Control Options

In lieu of using dust suppressants, the operator of a facility/operation may submit for approval by the Executive Officer and the U.S. Environmental Protection Agency a plan for achieving equivalent emission reductions through alternative control measures.

(Adopted December 2, 1983)(Amended June 11, 1999)
(Amended July 11, 2008)

RULE 1158. STORAGE, HANDLING, AND TRANSPORT OF COKE, COAL AND SULFUR

(a) Purpose

The purpose of this rule is to reduce the emissions of airborne particulate matter from the storage, handling, and transport of coke, coal and sulfur; and to reduce the potential for the storage, handling and transport of these materials to violate AQMD Rules 402 – Public Nuisance and 403 – Fugitive Dust.

(b) Applicability

This rule applies to the operator of a facility that produces, stores, handles, transports, or uses coke, coal or sulfur.

(c) Definitions

For the purpose of this rule:

(1) ACCUMULATION is any surface deposit of material greater than three ounces in one square foot other than inside an approved storage area, conveyor, transport vehicle, coker pit, slurry bin, water collection channel or separation pond.

(2) AQMD PERMITTED FACILITY is a facility that has material storage or handling equipment required to have permits to operate from the AQMD.

(3) BEST AVAILABLE CONTROL MEASURES represent fugitive dust control actions which are required to be implemented within the boundaries of the South Coast Air Basin. A detailed listing of best available control measures for each fugitive dust source type shall be as contained in the most recent Rule 403 Implementation Handbook, now or hereafter adopted by the Governing Board.

(4) CALCINED COKE is coke which has been processed in a kiln.

(5) CHEMICAL STABILIZER is any non-toxic chemical dust suppressant which is not prohibited for the uses proposed in this Rule or by any other applicable law, and which meets all applicable specifications required by any federal, state, or local water agency.

(6) COAL is a solid, brittle, carbonaceous rock classified as anthracite, bituminous, subbituminous, or lignite by ASTM Designation D388-77.

(7) COKE is a solid carbonaceous residue produced from a coker after cracking and distillation from petroleum refining operations.

(8) COKER PIT is an open-top containment area at a refinery coker unit used to contain cut or cracked petroleum coke.

(9) CONTAMINATED MATERIAL means a material that has become mixed with other materials or dirt so that it is no longer considered material or no longer meets marketable product specifications.

(10) CONVEYOR SHUTTLE or TRAVELER or TRIPPER is a device supporting a conveyor that can travel forwards or backwards along a feed conveyor as needed to allow the conveyor to load material onto a selected area of a ship or pile.

(11) DEWATERING TRUCK-LOADING BIN is a cylindrical tank with a funnel-shaped bottom which receives material in a slurry form and separates the solids from water by filters and gravity, eventually discharging the solids into a truck.

(12) DRY MATERIAL is any coke, coal, or sulfur, that does not meet this Rule's definition for moist material.

(13) ENCLOSED CONVEYOR is a conveyor which is totally enclosed in a tube or encompassed 360 degrees within a solid plane structure, or an equivalent conveying system as approved by the Executive Officer.

(14) ENCLOSED STORAGE is any completely roofed and walled structure or building, including a truck or railcar covered pursuant to subparagraphs (d)(12)(A), (B), (C), or (D), surrounding an entire coke, coal or sulfur pile.

(15) FACILITY means any source or group of sources or other air contaminant-emitting activities which are located on one or more contiguous properties within the AQMD, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility. Sources or installations involved in crude oil and gas production in Southern California Coastal or OCS Waters and transport of such crude oil and gas in Southern California Coastal or OCS Waters shall be included in the same facility which is under the same ownership or use entitlement as the crude oil and gas production facility on-shore.

(16) FREEBOARD is the distance from the top of the material storage section of the truck trailer to the top of the material load at its highest point.

(17) FUGITIVE DUST means any solid particulate matter that becomes airborne by natural or man-made activities, excluding particulate matter emitted from an exhaust stack.

(18) HIGH WIND CONDITIONS is when wind speeds exceed 15 miles per hour.

(19) LOOSE means material that can be swept off a surface by a person using a whisk broom.

(20) MATERIAL means any substance containing at least 50% by weight of coke, coal, or sulfur. The percent by weight shall be determined by at least a one ounce sample taken at any random point.

(21) MOIST MATERIAL is material that has a moisture content that in no place is less than the following: coke material 8.3%, coal material 7.6%, and sulfur material 2.8%.

(22) NON-LUMP MATERIAL means any coke, coal, or sulfur material which can pass through a 6.3 millimeter sieve (1/4 inch opening).

(23) OPEN STORAGE is any material coke, coal or sulfur pile that is not in enclosed storage.

(24) PAVED means improved by covering with concrete, asphaltic concrete, recycled asphalt, or asphalt.

(25) PERMANENT WATER RECYCLING SYSTEM DEWATERING BED is a below-ground, open-top containment vessel, used in conjunction with a water reclamation system, to reduce moisture content of bulk material removed from a water clarifier for the purpose of disposal.

(26) PILE means any amount of coke, coal or sulfur material which attains a height of three feet or more, or a total surface area of 150 square feet or more.

(27) PRILLED SULFUR is a product formed in a wet process involving the contact of heated liquid sulfur with cooled water, resulting in a sphere-like solid.

(28) ROAD means any route with evidence of repeated prior travel by vehicles.

(29) SEPARATION POND means a container for separating coke from water by gravity, which has a liquid water surface at all points.

(30) SILT is any particulate, including but not limited to coal, coke, or sulfur, with a particle size less than 75 micrometers in diameter as measured by a No. 200 sieve.

(31) SLURRY BIN is a container located at a refinery coker unit or its associated coke handling system holding a watery mixture of material.

(32) STREET SWEEPER is, if purchased or contracted for before January 1, 2000, a vacuum or regenerative air street sweeper, and if purchased or contracted for

on or after January 1, 2000, is a PM10 street sweeper pursuant to Rule 1186 – PM10 Emissions from Paved and Unpaved Roads & Livestock Operations.

(33) SULFUR is a chemical element, atomic number 16 on the periodic chart, and which is found in crystalline or amorphous form.

(34) TELESCOPING LOADING CHUTE is a length adjustable chute which completely encloses the material during ship loading operations.

(35) TRACKIN – TRACKOUT ROAD is a road (excluding freeways), starting from the entrance or exit of the facility property and continuing away from the property for the first quarter mile of the road, that a truck trailer, used for material transport, travels on.

(36) TRANSFER POINT is the point in the storage, handling or transport process where material being moved, carried, conveyed, or transported is dropped or deposited.

(37) VEHICLE is any car, truck, in-service transportation, or off-road mobile heavy equipment.

(38) WATER SPRAY SYSTEM means a dust suppression technique that uses water or water-based solutions delivered through pipes, tubes, or hoses that are fitted with one or more nozzles and operated at pressures ranging from 1 to 1500 psi.

(39) WIND SCREENS are structures that are sufficient to deflect the wind away from conveyed material and reduce fugitive dust emissions, and are adjacent to both sides of and extend along the entire length of the conveyor, tall enough to extend above and below the conveyor and material.

(d) Any facility that produces, handles, transports, or stores coke, coal, or sulfur material for transfer or shipment shall comply with all of the following requirements:

(1) The facility operator shall not cause, or allow the discharge into the atmosphere of, fugitive dust for a period or periods aggregating more than three minutes in any one hour which is equal to or greater than 10% opacity (equivalent to 10% opacity under EPA Method 9 or one half of No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines).

(2) The facility operator shall maintain all piles in enclosed storage.

(A) Structures or buildings used for enclosed storage shall be properly maintained, equipped with and use as needed, a water spray system or permitted air pollution control equipment sufficient to control fugitive

dust emissions at designed vents and at entrances or exits for material or vehicles so as not to violate the provisions of paragraph (d)(1).

(B) Any entrance or exits for material or vehicles shall have overlapping flaps, sliding doors or other devices(s) approved by the Executive Officer, which shall remain closed except to allow material or vehicles to enter and leave or when people are inside.

(C) For coal and prilled sulfur piles existing before June 11, 1999, the facility operator may achieve compliance with outdoor storage provided that the Executive Officer approves an open pile control plan, pursuant to subdivision (f).

(3) The facility operator shall only conduct material truck unloading in an enclosed structure that is either equipped with a water spray system to be used as needed to prevent visible dust emissions or vented to permitted air pollution control equipment that is operated during unloading activities. The ends of the structure shall have overlapping flaps that reduce the opening to no greater than 11 feet high by 10 feet wide, sliding doors which shall remain closed except to allow the trucks to enter and leave, or other equally effective devices as approved by the Executive Officer.

(4) The facility operator shall only conduct railcar material unloading in an enclosed structure that is either equipped with a water spray system operated to prevent visible dust emissions, or vented to permitted air pollution control equipment that is operated during unloading activities. The ends of the structure shall have overlapping flaps, sliding doors or other equally effective devices as approved by the Executive Officer, which shall remain closed except to allow the railcars to enter and leave.

(5) The facility operator shall pave and maintain as paved, the following areas:

(A) All ground surfaces within the facility where material accumulations routinely occur; and,

(B) All roads and vehicle movement areas within the facility that are used for transporting or moving material excluding AQMD permitted material enclosures and areas approved by the Executive Officer for material storage pursuant to other sections of this Rule.

(6) When transport is by truck, the facility operator shall only receive or transfer material in truck trailers that, within one quarter mile of the perimeter of the facility, are driven only on paved roads.

(7) In order to clean roads of accumulations, the facility operator shall comply with either (A) or (B):

(A) The facility operator shall prevent and remove any material so that the following limits are not exceeded:

(i) A silt loading value, for all silt particles, of 0.05 grams/meter^2 for any trackout road, excluding freeways and railroad tracks; and

(ii) A silt loading value, for all silt particles, of 0.25 grams/meter^2 for all roads and vehicle movement areas excluding railroad tracks within the facility that are used for transporting or moving material.

(B) The facility operator shall use a street sweeper to clean any trackin – trackout road and any road inside the facility, used to transport material.

(i) The street sweeping shall be sufficient so that not more than 4 hours elapses between each street sweeper cleaning or after every 100 truck material receipts or dispatches, but not less than one time daily when the facility is open for business.

(ii) Each 24-hr. day, the day beginning at 12:01 A.M., the facility operator shall designate and record whether for that day the facility operator is street sweeping every four hours or every 100 trucks. The record shall show the date and time when street sweeping was performed and the truck count.

(iii) Facility operators shall begin cleaning up material spills of more than three pounds, or that cover more than a square foot, within one hour and continue clean up operations until the spill is removed.

(C) Prior to the beginning of each calendar quarter the facility operator shall designate and record which alternative, A or B, the facility operator is choosing to comply with during the quarter.

(D) A violation of subparagraph (d)(7)(C) shall be considered a violation of paragraph (d)(7).

(8) The facility operator shall maintain all areas within the facility, except for those areas subject to paragraph (d)(7), free of any accumulation, unless the accumulation is:

(A) moist material;

(B) dry material not higher than three inches, except for crushed prilled sulfur which shall be removed; or

(C) completely covered.

(9) Any new or replacement conveyors constructed after June 11, 1999 shall be enclosed conveyors. For purposes of this paragraph, the installation of a conveyor between two transfer points shall be a replacement conveyor. For conveyors existing before June 11, 1999, the facility operator shall, except for prilled sulfur, only conduct material conveying in compliance with either:

(A) All non-lump material shall be moist material; or,

(B) The material shall be conveyed in an enclosed conveyor(s).

(10) The facility operator shall, except for prilled sulfur, maintain all material transfer points in compliance with one of the following:

(A) Total enclosure;

(B) Water spray system sufficient to control fugitive dust emissions during operations to comply with paragraph (d)(1);

(C) vented to permitted air pollution control equipment which is in full operation;

(D) Transfer only moist material and conduct such transfer only in an overhead truck trailer or railcar loader, or chute with a hopper, such that the exposed drop does not exceed four feet from the top of the truck or railcar; or,

(E) Controlled by another equivalent method approved, in writing, by the Executive Officer.

(11) The facility operator shall only load materials into ships through a telescoping loading chute which uses a water spray system, or an air pollution control system, sufficient to control fugitive dust emissions during operations to comply with paragraph (d)(1), and:

(A) Is extended to within five feet of the top of the pile; or,

(B) Is at least 5 feet below the hatch coaming.

(12) The facility operator of an AQMD permitted facility shall not load material into any truck trailer or railcar unless it is subsequently and immediately covered, before leaving the facility, in one of the following manners sufficient to prevent material from escaping from the trailer or railcar onto the facility property:

(A) A solid sliding cover on the top of the truck or railcar that is kept completely closed, or;

(B) For trucks, a slot-top type cover that reduces the uncovered open surface area by at least 50% and extends above the trailer top edges without gaps; and either the material contained in the trailer is moist material, or a chemical stabilizer is applied to the surface of the material in sufficient amounts and concentration so as to prevent fugitive dust emissions during transport; or,

(C) A continuous tarp that completely covers the trailer or railcar top, and for trucks, does not contact the material within the trailer. In addition, the tarp shall be installed or the trailer/railcar constructed to prevent wind from entering over the leading edge of the trailer/railcar rim into the interior of the trailer/railcar; or

(D) For railcars, an alternative method of control proven effective in preventing visible fugitive PM emissions escaping from the railcar and approved by the Executive Officer prior to its use.

(13) Facility operators shall not load material into truck trailers or railcars such that a trailer or railcar leaks liquid that contains material onto the facility property.

(14) If a truck trailer or railcar leaks liquid that contains material onto the facility property, the facility operator shall clean the affected property within one hour with a street sweeper or water.

(15) The facility operator shall clean all out-going material transport trucks, whether loaded or empty, so that:

(A) Any part of any tractor, trailer or tire exterior surface, excluding the inside of the trailers, are free of all loose material in excess of 1 gram per square decimeter or 10 grams total.

(B) The material removed by the truck cleaning operation is collected and recycled or otherwise disposed of so that it does not result in fugitive dust emissions.

(16) The facility operator shall not load sulfur into trucks or railcars unless:

(A) The sulfur is not greater than 1% crushed prilled sulfur by weight and;

(B) The loading is controlled by an enclosure or water spray system, approved by the Executive Officer, that reduces visible emissions to ensure compliance with paragraph (d)(1).

(e) Any facility that stores material solely for use at the facility either as a fuel or as an ingredient in a manufacturing process shall comply with all of the following requirements:

(1) The facility operator shall not cause, or allow the discharge into the atmosphere of, fugitive dust for a period or periods aggregating more than three minutes in any one hour which is equal to or greater than 10% opacity (equivalent to 10% opacity under EPA Method 9 or one half of No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines).

(2) The facility operator shall maintain all piles in enclosed storage, except as provided in paragraph (3). Any openings shall have overlapping flaps, sliding doors or other equivalent devices(s) approved by the Executive Officer, which shall remain closed except to allow the vehicles to enter or leave.

(3) For facilities existing before June 11, 1999 only, for coal and prilled sulfur, the facility operator may achieve compliance with outdoor storage provided the Executive Officer approves, in advance, an open storage pile control plan, or complies at all times with at least one of the following:

(A) Installs and maintains a three-sided barrier equal to the height of the material, with no more than fifty percent porosity to provide wind sheltering;

(B) Maintains and operates water spray bars, a misting system, water hoses and or water trucks to control fugitive dust emissions;

(C) Applies chemical stabilizer(s) to control fugitive dust emissions;

(D) Installs temporary covers; or

(E) Other equivalent measures approved by the Executive Officer.

(4) Within four hours after material is delivered to the facility by truck trailer, the facility operator shall inspect and clean up any spilled material on any paved road inside or outside the facility up to a quarter mile.

(5) The facility operator shall use a street sweeper to clean any paved road used for material transport, inside or outside the facility, up to a quarter mile from the material delivery site at least once a week or after every 100 truck material deliveries, whichever results in the most frequent street sweeping.

(6) The facility operator shall pave and maintain as paved, except for railroad tracks, the following areas:

(A) All non-road ground surfaces within the facility where material accumulation occurs; and,

(B) All roads and vehicle movement areas within the facility that are used to receive material by truck trailer.

(7) The facility operator shall pave or chemically stabilize and maintain all roads and vehicle movement areas within the facility, that are used for transporting coal.

(8) The facility operator shall prevent, or remove within four hours, any coke accumulations on all paved ground surfaces except for those areas subject to paragraph (3), unless the accumulations are either:

(A) Moist material; or

(B) Dry material not higher than three inches; or

(C) Completely covered.

(9) The facility operator shall prevent, or remove within four hours, any coal deposit higher than three inches on all paved ground surfaces except for those areas subject to paragraph (7), unless the accumulations are either:

(A) Moist material; or

(B) Completely covered.

(10) The facility operator of an AQMD permitted facility shall not allow any truck trailer or railcar, while on the AQMD permitted facility, to transport material unless the trailer or railcar is covered in one of the following manners, sufficient to prevent material from escaping from the truck/railcar onto the facility property.

(A) A solid sliding cover on the top of the truck or railcar that is kept completely closed, or;

(B) For trucks, a slot-top type cover that reduces the uncovered open surface area by at least 50% and extends above the trailer top edges without gaps; and either the material contained in the trailer is moist material, or a chemical stabilizer is applied to the surface of the material in sufficient amounts and concentration so as to prevent fugitive dust emissions during transport: or

(C) A continuous tarp that completely covers the trailer or railcar top, and for trucks, does not contact the material within the trailer. In addition, the tarp shall be installed or the trailer/railcar constructed to prevent wind from entering over the leading edge of the trailer/railcar rim into the interior of the trailer/railcar.

(D) For railcars, an alternative method of control proven effective in preventing visible fugitive PM emissions escaping from the railcar and approved by the Executive Officer prior to its use.

(11) When transport is by truck trailer, the facility operator shall not receive or transfer material in truck trailers unless such truck trailers, that within one quarter mile of the perimeter of the facility, drive only on paved roads.

(12) The facility operator shall:

(A) Record daily, any material delivery by truck trailer and any related street sweeping;

(B) Record the application of chemical stabilizer pursuant to paragraph (e)(7);

(C) Record the time of discovery, condition (moist or dry and or depth of material) and removal of any accumulations pursuant to paragraphs (e)(4), (e)(8) or (e)(9).

(f) Open Storage Pile Control Plan

The Executive Officer shall disapprove an Open Storage Pile Control Plan unless the facility operator demonstrates that the plan requires the facility operator to implement best available control measures on the pile(s) and provides that no material accumulates beyond the boundaries of the pile and provides that the facility will comply with all applicable AQMD rules. The Plan shall be submitted as a Rule 1158 Open Pile Control Plan in a complete and approvable form and by the compliance deadline. On and after July 11, 2008, the Executive Officer shall not accept any new Open Storage Control Plan for approval.

(1) In evaluating the proposed plan, the Executive Officer may reasonably require tests and sampling as necessary to determine the likelihood of emission reductions and compliance.

(2) The plan shall be implemented by the facility operator upon approval by the Executive Officer.

(3) The plan shall contain as a minimum:

(A) A contour map showing the location of the facility, the location of all piles, the perimeter boundary of the piles, and the surrounding land use and types of roadways within one quarter mile of the perimeter of the facility.

(B) The maximum daily amount of each material stored within the facility and the maximum daily throughput.

(C) A list of each applicable best available control measure for each fugitive dust source associated with the pile, including sources associated with moving the pile with mechanical equipment, and detailed documentation demonstrating how implementation of each measure will achieve compliance with all applicable AQMD rules under all conditions, including high wind conditions.

(4) In approving a plan, the Executive Officer may require any reasonable conditions deemed necessary to ensure the operation complies with the plan and AQMD Rules. The conditions may include, but shall not be limited to, application frequency and location of water spray systems, frequency of chemical stabilizer treatments, limits on handling, storage and transport of crushed materials, the placement, construction or modification of permanent perimeter boundaries for each pile or group of piles, monitoring wind conditions, advance notification to the Executive Officer of ship loading activities, and performing ambient air monitoring.

(5) In approving a plan, the Executive Officer may require any records deemed necessary to be maintained by the facility operator to demonstrate compliance with the plan. Such records shall be retained for at least 2 years and be made available to the Executive Officer upon request.

(6) The Plan is only valid for one year. If the Executive Officer denies approval, the facility will have 120 days to submit the necessary applications and two years from the date of the initial denial, to comply with the enclosed storage requirement. In the interim between before the storage pile(s) are enclosed, the Executive Officer may issue an interim plan that requires control measures deemed reasonably necessary to ensure the operation complies with all applicable AQMD Rules.

(7) Compliance with the provisions of the approved plan does not exempt a person from complying with the requirements of the California Health and Safety Code, or any other AQMD Rule.

(g) Compliance Schedule

(1) All existing Rule 1158 Interim or Permanent Compliance Plans are void.

(h) Test Method

(1) ASTM Methods D-3302, D-4931, or equivalent methods approved by the Executive Officer, the California Air Resources Board and the U.S. EPA. shall be used to determine the material moisture content.

(2) Appendix C.1, Procedures for Sampling Surface/Bulk Dust Loading, and Appendix C.2, Procedures for Laboratory Analysis of Surface/Bulk Dust Loading Samples, as contained in Compilation of Air Pollutant Emission Factors (AP-42), as published by the U.S. EPA, or equivalent methods as approved by

the Executive Officer, the California Air Resources Board and the U.S. EPA, shall be used to determine the silt loading value.

(3) A method approved as accurate by the Executive Officer shall be used to determine the weight of truck exterior surface material and material silt deposits.

(i) Compliance Determination and Performance Information

(1) For facilities subject to sub-division (d), each calendar quarter, if the facility operator selects the silt loading standard for that calendar quarter, and for all other operators once every calendar year, the facility operator shall perform the following tests pursuant to paragraphs (d)(7) and subdivision (h). Records of tests shall be maintained for a period of two years and shall be made available to District personnel upon request. Results of the test shall be submitted to the Executive Officer within 45 days after completion of each test. For facility operators testing once each calendar year, the test results shall be for information only, not for compliance determination. Silt loading tests shall be performed on the following roads or surfaces:

(A) On one paved road outside the facility, used by trucks transporting material, within one quarter mile of the exit of the facility; and

(B) On one road between the truck wash or truck cleaning area and the facility exit;

(2) For facilities subject to subdivision (d), each calendar quarter the facility operator shall conduct a test to show compliance with paragraph (d)(15) by sampling truck-trailer exterior surface material on one out-going material transport truck.

(j) Recordkeeping Requirements

The facility operator shall maintain all records at the facility for a period of two years and make them available to AQMD staff upon request.

(k) Exemptions

(1) The provisions of paragraph (d)(9) shall not apply to:

(A) Material feed conveyor(s) existing prior to June 11, 1999 which are interrupted by the conveyor shuttle, traveler or tripper, provided that the entire length of the feed conveyor(s) is equipped with permanent wind screens.

(B) Underground conveyors. This exemption shall only apply to those sections of the conveyors which are underground.

(C) Conveyors located inside enclosed storage. This exemption shall not apply to those sections of the conveyor which are outside of the enclosed storage.

(D) That portion of an existing conveyor belt that contains the tensioner.

(2) The provisions of paragraph (d)(12) shall not apply to prilled sulfur when the freeboard is, in no place, less than 3 feet.

(3) The provisions of this rule shall not apply to the storage, handling, and transport of molten sulfur.

(4) The provisions of paragraph (d)(2) shall not apply to the deposit of coke in separation ponds or that has a moisture content of at least 12% in coker pits, slurry bins, and coke dewatering truck loading bins.

(5) The provisions of paragraph (d)(7) and (e)(5) shall not apply to the specific section of road where public vehicle through-traffic is denied access due to a construction project or road repair.

(6) The provisions of paragraph (d)(11) shall not apply to existing shiploaders permitted prior to June 11, 1999, for loading coal onto ships with a beam length greater than 105 feet whenever all of the following are met:

(A) The facility operator shall maintain a log of the date, time, loading rate, ship capacity, and duration of each use of the headbox by-pass;

(B) A maximum of ten ships with a beam length greater than 105 feet per calendar year are loaded under this exemption and the facility operator demonstrates to the Executive Officer's satisfaction that only the offshore side of the vessel is loaded without the required control equipment;

(C) The shiploader shuttle boom is not long enough to allow discharge through the telescoping spout to reach the far side of that ship's hatch without using the headbox by-pass;

(D) The facility operator notifies the AQMD 48 hours before shiploading is scheduled to commence; and,

(E) The shiploader is not reconstructed or replaced after June 11, 1999.

(7) The provisions of paragraph (d)(2) shall not apply to the following, provided the material or coke is removed within 48 hours and a permanent record is made and the District is notified within the first 24 hours of the incident:

(A) Material taken off a conveyor because it is refused by a ship, or material that is associated with the abatement of a hot coke (greater than 120 degrees Fahrenheit) incident; or,

(B) Coke, up to 700 tons, that is incompletely processed from a refinery coker.

(8) The provisions of paragraph (d)(2) shall not apply to moist material or material associated with a "hot coke" incident being actively transported in a front-end loader.

(9) The provisions of paragraphs (d)(2) and (e)(10) shall not apply to coal inside railcars that originated from outside California, provided the coal is moistened upon arrival at a District permitted facility so as to prevent fugitive emissions pursuant to paragraph (d)(1).

(10) Provisions of paragraph (d)(2) shall not apply to facilities performing routine maintenance/repair of replacing component parts on/in enclosed storage structures, such as roofing and siding material, providing the following conditions are met:

(A) the facility notifies the District, in writing or electronically, at least 10 working days prior to any maintenance/repair activity, of the intent to perform the maintenance/repair and the dates for the activity;

(B) the surface area of components being replaced does not exceed 2% of the total structure surface area;

(C) the duration for maintenance/repair shall not exceed 14 days;

(D) during the maintenance/repair, no materials shall be actively moved or disturbed in the structure;

(E) no visible emission shall be observed; and

(F) any water spray system or air pollution control equipment associated with the structure will be in use as needed to prevent visible emissions during the maintenance/repair operation.

(11) The provisions of paragraph (d)(2) shall not apply to deposits of material in permanent water recycling system dewatering beds, existing prior to July 11, 2008, provided that:

(A) they are totally enclosed by wind fences, stand alone structures, with a maximum porosity of 20%, to reduce windblown dust escaping from the beds and tall enough to provide at least three feet of visible freeboard from the top of the material at all times, to provide wind sheltering, no later than November 11, 2008; and

(B) the surface stabilization is maintained at a moisture content of not less than 12%, at all points, including during material removal; and

(C) no visible emissions shall be observed and shall be visually monitored for, and observations recorded, daily.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted December 6, 1985)

RULE 1159. NITRIC ACID UNITS - OXIDES OF NITROGEN

(a) Definitions

For purposes of this rule, the following definitions shall apply:

1. Nitric Acid Production Unit means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.
2. Weak Nitric Acid means acid which is 30 to 70 percent in strength.

(b) Requirements

An owner/operator of a nitric acid production unit shall not discharge into the atmosphere any gases which contain oxides of nitrogen expressed as NO_2 in excess of:

1. 450 ppm, dry basis, averaged over 15 consecutive minutes.
2. 237 ppm, dry basis, averaged over 60 consecutive minutes, or
3. 1.5 kilograms per metric ton (3 pounds per ton) of acid produced, averaged over a 60-consecutive-minute period (the production being expressed as 100 percent nitric acid).

(Adopted March 6, 1987)(Amended April 3, 1987)(Amended August 3, 1990)
(Amended December 7, 1990) (Amended August 2, 1991)(Amended July 10, 1992)
(Amended May 13, 1994)(Amended November 17, 2000)(Amended November 9, 2001)
(Amended July 11, 2003)(Amended July 9, 2004)(Amended July 8, 2005)

RULE 1162 POLYESTER RESIN OPERATIONS

(a) Applicability

This rule shall apply to all polyester resin operations that fabricate, rework, repair, or touch-up products for commercial, military, or industrial use including, but not limited to, boats, tubs, pools, shower enclosures, spas, bathroom fixtures, jigs, tools, molds, building panels, air pollution control equipment, sewage treatment equipment, storage tanks, transportation parts, automotive, aircraft, and aerospace components, and other industrial and consumer products.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AIR-ASSISTED AIRLESS SPRAY is a coating application system in which the coating fluid is supplied to the gun under fluid pressure and air is combined at the spray cap.

(2) CLOSED MOLDING SYSTEM is a method of fabricating composite parts by placing composite materials in a confining mold cavity and applying pressure and/or heat.

(3) CORROSION-RESISTANT MATERIALS are polyester resin materials used to make products for corrosion resistant applications such as tooling, fuel or chemical tanks, boat hulls, pools and outdoor spas.

(4) ELECTROSTATIC APPLICATION is charging of atomized coating droplets for deposition to a grounded substrate by electrostatic attraction.

(5) EXEMPT COMPOUND is as defined in Rule 102.

(6) FIBER REINFORCEMENT MATERIALS are multifilament of glass or other fibrous materials such as, carbon, boron, metal and amid polymers, which are used to reinforce plastic.

(7) FIBER REINFORCED PLASTIC OR COMPOSITE (FRP/C) MATERIALS is a mixture of polyester resin and fiber reinforcement materials.

(8) FILLER is a finely divided inert (non-VOC) material, which may be added to the resin to enhance its mechanical properties and extend its

volume. Resin fillers include, but are not limited to, silica, carbon black, talc, mica and calcium carbonate.

(9) FILLED POLYESTER RESIN MATERIAL is a material formulated by adding compatible filler(s) to polyester resin material(s).

(10) FIRE RETARDANT MATERIALS are polyester resin materials used to make products that are resistant to flame or fire.

(11) FLOWCOATER is a nonatomizing application technique of applying resins and gel coats to an open mold with a fluid nozzle in a fan pattern with no air supplied to the nozzle.

(12) GEL COAT is a thermosetting polyester resin surface coating, either pigmented or clear, that provides a cosmetic enhancement and improves resistance to degradation from exposure to the elements.

(13) GENERAL PURPOSE POLYESTER RESINS are resin materials that are not corrosion resistant, fire retardant, high strength, or gel coats.

(14) HAND LAY-UP is a hand application technique of composite materials using a bucket and a paint brush or a paint roller, or other hand held method of application.

(15) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is a coating application system which is operated at air pressures between 0.1 and 10 pounds per square inch gauge (psig) measured dynamically at the center of the air cap and at the air horns.

(16) HIGH-STRENGTH MATERIALS are polyester resins which have casting tensile strength of 10,000 psi or more and which are used for manufacturing of high performance boats and skis.

(17) LAMINATION RESINS are orthophthalate, isophthalate and dicyclopentadiene (DCPD) resins which are used in composite system made of layers of reinforcement fibers and resins, such as in boat fabrication.

(18) MARBLE OR CULTURED RESINS are orthophthalate and modified acrylic isophthalate resins, which are designed for the fabrication of cast products, such as vanities.

(19) MONOMER is a volatile organic compound that partially combines with itself, or other similar compounds, by a cross-linking reaction to become a part of the cured resin. Monomers include, but are not limited to, styrene and methyl methacrylate.

(20) MONOMER PERCENT BY WEIGHT OF A RESIN is the weight of the monomer, divided by the weight of the polymer.

(21) MONOMER PERCENT BY WEIGHT OF A FILLED RESIN AS APPLIED is the weight of the monomer, divided by the weight of the polymer and filler(s).

(22) NONATOMIZING SPRAY APPLICATION is any application technique in which resin flows from the applicator, in a steady and observable coherent flow, without droplets, for a minimum distance of three (3) inches from the applicator orifices.

(23) OPEN MOLDING SYSTEM is a method of fabricating composite parts by applying gel coats, resins, fibers, and other composite materials on an open mold using either hand lay-up or spray-up applications.

(24) PIN STRIPING is a spray application technique used to apply one or more narrow bands, marks, or streaks of gel coat onto the surface of an open mold of a composite product.

(25) POLYESTER is a polymer of ester molecules, which are formulated by the reaction of an acid and an alcohol and linked together by the ester linkages.

(26) POLYESTER RESIN MATERIALS are polyester resins, such as isophthalic, orthophthalic, halogenated, bisphenol A, vinyl ester, or furan resins; cross-linking agents; catalysts; gel coats; inhibitors; accelerators; promoters; and any other material containing VOC used in polyester resin operations.

(27) POLYESTER RESIN OPERATIONS fabricate, rework, repair, or touch-up products for commercial, military, or industrial use by mixing, pouring, hand laying-up, impregnating, injecting, forming, winding, spraying, and/or curing by using polyester resin materials.

(28) POLYMER is a chemical compound, such as polystyrene, comprised of a large number of chemical units (monomer) composed of identical cross-linking groups, such as styrene.

(29) PRESSURE-FED ROLLER is a fabric roller that is fed with continuous supply of catalyzed resins from a mechanical fluid pump.

(30) PRIMER GEL COAT is gel coat which is used to coat the surface of composite parts, prior to top-coat painting, for automotive, aerospace, marine and home building industries.

(31) PULTRUSION is a process where continuous roving strands are moved through a strand-tensioning device into a resin bath for impregnation and then passed through a heated die for curing.

(32) REPAIR is that portion of the fabrication process that requires the addition of polyester resin materials to portions of a previously fabricated product in order to mend damage.

(33) RESIN is any thermosetting polyester resin, which is used to encapsulate and bind together reinforcement fibers and/or fillers in the formulation of composite materials.

(34) RESIN IMPREGNATOR is a mechanical nonatomizing composite materials application technique in which fiber reinforcement is saturated with resins in a controlled ratio for each specific composite product.

(35) SOLID SURFACE RESINS are resins, which are used without gel coats to fabricate homogenous solid surface products.

(36) SPECIALITY GEL COATS are gel coats which are used in conjunction with fire retardant, corrosion resistant or high-strength materials.

(37) THERMOSET POLYESTER RESIN is a resin material that undergoes a chemical reaction during curing and can not be reshaped.

(38) TOUCH-UP is that portion of the process that is necessary to cover minor imperfections.

(39) TUB/SHOWER RESINS are dicyclopentadiene (DCPD) resins, along with orthophthalate and isophthalate resins, which are used to fabricate bathware products.

(40) VAPOR SUPPRESSANT is a wax substance added to resin for the purpose of forming a layer on the surface of the resin while it is curing and minimize the outward diffusion of monomer vapor into the atmosphere.

(41) VAPOR SUPPRESSED RESIN (VSR) is a polyester resin material which contains additives to reduce VOC evaporation loss to less than fifty (50) grams per square meter of surface area as determined and certified by resin manufacturers.

(42) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(c) Requirements

(1) Application Techniques

(A) Except for gel coats, effective July 1, 2002, a person shall not apply any resin materials to an open mold surface unless one of the

following nonatomizing application techniques is used and operated according to the operating procedure specified by the equipment manufacturer:

(i) Nonatomizing Spray Application Technique, as defined in paragraph (b)(22);

(ii) Flowcoaters;

(iii) Pressure-Fed Rollers;

(iv) Resin Impregnators;

(v) Hand Lay-up Applications; or

(vi) Other nonatomizing application techniques which are approved in writing by the Executive Officer, CARB, and U.S. EPA, as having similar emission reduction efficiencies.

(B) Effective July 1, 2005, an operator shall not apply gel coat materials to an open molding surface unless one of the following application techniques is used and operated according to the operating procedure specified by the equipment manufacturer:

(i) Any nonatomizing application technique listed under subparagraph (c)(1)(A);

(ii) Air-Assisted Airless Spray;

(iii) Electrostatic Attraction; or

(iv) High-Volume, Low-Pressure (HVLP)

(2) Material Requirements

(A) A person shall not use polyester resin material in an open molding system, which has a monomer content in excess of the limits specified in the following Table.

Polyester Resin Materials	Monomer Percentage by Weight as Applied	
	Prior to 11-09-2001	Current Limits
Clear Gel Coat	50	-
For Marble Resins	-	40
For Other Resins	-	44
Pigmented Gel Coat	45	-
White and Off White	-	30
Non-White	-	37
Primer	-	28
Specialty Gel Coats	-	48
General Purpose Resin	35	-
Marble Resins	-	10 or (32 % as supplied, no fillers)
Solid Surface Resins	-	17
Tub/Shower Resins	-	24 or
Lamination Resins	-	(35 % as supplied, no fillers) 31 or (35 % as supplied, no fillers)
Others	-	35
Fire Retardant Resin	42	38
Corrosion Resistant Resin	48	48
High Strength Resin	48	40

(B) Composite operations that are also subject to Rule 1132 and have elected to comply under the alternative compliance option specified in paragraph (d)(1) of Rule 1132, shall comply with the July 1, 2002, monomer content requirements of subparagraph (c)(2)(A) on January 1, 2002.

(C) Effective July 1, 2002, a person shall not apply to an open molding system any tub/shower polyester resin material unless all the applied resin material is vapor suppressed.

(3) Process Requirements

(A) A person shall not operate a closed molding system, unless the weight loss of polyester resin materials during polymerization is less than four (4) percent.

(B) Until July 1, 2002, in lieu of using resins that comply with the monomer content requirements of subparagraph (c)(2)(A), a person may use a vapor suppressed resin, provided the weight loss from VOC emissions does not exceed fifty (50) gram per square meter of exposed surface area during resin polymerization.

(C) A person shall not perform a pultrusion operation, unless wet-out baths are covered except for 18 inches from the exit of the bath to the die. The weight loss of polyester resin materials during polymerization shall be less than three (3) percent in a pultrusion operation.

(4) Notwithstanding the requirements specified in paragraph (c)(1), a person may perform touch-up and repair using a hand-held spray gun which has a container for gel coat or resin as part of the gun.

(5) Any person processing polyester resin materials and any other VOC-containing materials shall keep these materials in closed containers except when filling or emptying the container.

(6) Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general working areas, and the storage and disposal of VOC-containing materials used in cleaning operations shall comply with Rule 1171 - Solvent Cleaning Operations.

(d) Control Equipment

In lieu of complying with the requirements of subdivision (c), a person may install and operate an emission control system which has an overall capture and control efficiency of 90 percent or more on a mass basis, as approved by the Executive Officer.

(e) Recordkeeping Requirements

(1) A person subject to the provisions of this rule shall maintain daily records. Alternatively, records may be kept on a monthly basis provided the polyester resin process or equipment is not subject to a daily production limit or daily VOC limit in any applicable District rule(s) or permit(s). Such records shall be made available to the Executive Officer's designee upon request and shall be kept for not less than two years. The records shall contain:

(A) The type of the nonatomizing, or other in the case of gel coat, application technique(s) used, manufacturer's name, and the records of the fluid tip pressure calibration as specified by the manufacturer;

(B) The manufacturer's name, the type and amount of each of the polyester resin materials used; and the weight (in percent) of monomer for all polyester resin materials and filler(s). If VOC-containing materials are added to the polyester resin, the amount of VOC-containing materials, in grams, and the VOC content in grams per liter, of VOC-containing materials;

(C) Certification of Analysis from the resin manufacture(s) to verify that all the applied tub/shower resin materials are vapor suppressed; and

(D) For closed-mold and pultrusion systems, the weight loss (in percent) of polyester resins materials for each application.

(2) Records for cleaning solvents subject to Rule 1171 - Solvent Cleaning Operations shall be maintained pursuant to Rule 109.

(3) Any person using an emissions control system as a means of complying with this rule shall maintain daily records of all key system parameters, including hours of operation, temperatures, pressures and flow rates, that are necessary to ensure control efficiency requirements.

(f) Test Methods and Procedures

The following test methods and procedures shall be used to determine compliance with this rule. Other applicable test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board and the U.S. Environmental Protection Agency.

(1) Determination of VOC Content of VOC- Containing Materials

(A) U.S. EPA Method 24 - Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating.

(B) District Methods 302 and 303–Determination of Exempt Compounds.

(C) District Method 304-Determination of Volatile Organic Compounds (VOCs) in Various Materials, or any other applicable

method approved by the US Environmental Protection Agency, California Air Resources Board, and the SCAQMD.

(D) District Method 309 – Determination of the Weight Loss of Polyester Resin Materials.

(E) District Method 312 – Determination of the monomer content of Polyester Resin Materials.

(F) District Method 313 – Determination of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry.

(2) Determination of Efficiency of Emission Control System

(A) The capture efficiency of an emission control system shall be determined by verifying the use of a Permanent Total Enclosure (PTE) and 100% capture efficiency as defined by U.S. EPA Method 204 "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if a U.S. EPA Method 204 defined PTE is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in U.S. EPA technical guidance document "Guidelines for Determination Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the U.S. EPA technical guidelines shall be determined by:

(i) The Temporary Total Enclosure (TTE) approach of U.S. EPA Method 204 through 204F; or

(ii) The District "Protocol for Determination of Volatile organic Compounds (VOCs) Capture efficiency."

(B) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by U.S. EPA's Test Method 18, or Air Resources Board (ARB) Method 422 for the determination of emissions of Exempt Compounds and U.S. EPA's Test Methods 25, 25A, District Method 25.1 for the determination of Total Gaseous Non-Methane Organic Emissions as Carbon, or District Method 25.3 for the determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources, as applicable.

(C) The overall efficiency of an emission control system shall be determined using the following equation:

Overall Efficiency
= (Capture Efficiency) x (Control Equipment Efficiency)/100

(g) Alternative Compliance Option

A person may use alternative application processes and materials to those listed in paragraphs (c)(1) and (c)(2) provided they result in equivalent VOC emissions and are approved in writing by the Executive Officer, CARB and U.S. EPA.

(h) Exemption

The requirement of subparagraph (c)(1)(B) shall not apply to pin striping provided that the total amount of gel coat materials sprayed does not exceed one (1) gallon per day per facility.

(Adopted July 8, 1988)(Amended May 5, 1989)(Amended March 2, 1990)
(Amended December 7, 1990)(Amended January 13, 1995)

RULE 1164. SEMICONDUCTOR MANUFACTURING

(a) Applicability

This rule is applicable to all direct, indirect, and support stations associated with the manufacture or production of semiconductor devices. Semiconductor device manufacturing includes all processing from crystal growth through circuit separation and encapsulation, including wafer production, oxidation, photoresist operation, etching, doping, and epitaxial growth operation.

(b) Definitions

For the purpose of this rule, the following definitions apply:

(1) APPROVED EMISSION CONTROL SYSTEM means any system used to reduce VOC emissions and consists of a collection and control device, which are approved in writing by the Executive Officer. The emission control system shall have an overall efficiency of at least 90 percent.

(2) EXEMPT COMPOUNDS are any of the following compounds:

(A) Group I (General)

trifluoromethane (HFC-23)
pentafluoroethane (HFC-125)
1,1,2,2-tetrafluoroethane (HFC-134)
tetrafluoroethane (HFC-134a)
1,1,1-trifluoroethane (HFC-143a)
1,1-difluoroethane (HFC-152a)
chlorodifluoromethane (HCFC-22)
dichlorotrifluoroethane (HCFC-123)
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)
dichlorofluoroethane (HCFC-141b)
chlorodifluoroethane (HCFC-142b)
cyclic branched, or linear, completely fluorinated alkanes
cyclic branched, or linear, completely fluorinated ethers with no unsaturations
cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations
sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

(B) Group II

methylene chloride
1,1,1-trichloroethane (methyl chloroform)
trichlorotrifluoroethane (CFC-113)
dichlorodifluoromethane (CFC-12)
trichlorofluoromethane (CFC-11)
dichlorotetralfuoroethane (CFC-114)
chloropentafluoroethane (CFC-115)

The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are toxic, potentially toxic, upper atmospheric ozone depleters, or cause other environmental impacts. By January 1, 1996, production of chlorofluorocarbons (CFC), 1,1,1-trichloroethane (methyl chloroform), and carbon tetrachloride will be phased out in accordance with the Code of Federal Regulations Title 40, Part 82 (December 10, 1993).

(3) FREEBOARD HEIGHT is the distance from the top of the solvent or solvent overflow drain to the top of the sink or reservoir.

(4) FREEBOARD RATIO is the freeboard height divided by the smaller of the length or width of the sink or reservoir.

(5) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS, is the weight of VOC per combined volume of VOC and coating solids, and can be calculated by:

Grams of VOC per Liter of Coating Less Water and Less Exempt Compounds = $\frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$

Where:
W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters

(6) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where:
- W_s = weight of volatile compounds in grams
- W_w = weight of water in grams
- W_{es} = weight of exempt compounds in grams
- V_m = volume of material in liters

(7) MASKING is applying a photoresist maskant material or overlaying a stencil to apply, impress, transfer, or otherwise effect a pattern on or into another substance.

(8) PHOTORESIST MASKANT, MASKANT, OR PHOTORESIST is a coating applied directly to a component to protect surface areas when chemical milling, etching, or other chemical surface operations are performed on the component.

(9) PHOTORESIST OPERATION is a process for the application and development of photoresist masking solution on a wafer, including preparation (except primary cleaning), soft bake, develop, hard bake, and stripping, and can be generally subdivided as follows:

(A) NEGATIVE PHOTORESIST OPERATION is a process where the maskant hardens when exposed to light and the unhardened maskant is stripped, exposing the wafer surface for etching.

(B) POSITIVE PHOTORESIST OPERATION is a process where the maskant softens when exposed to light and the softened maskant is stripped, exposing the wafer surface for etching.

(10) SEMICONDUCTOR MANUFACTURE is any process or operation performed to produce semiconductor devices or related solid state devices. It may include but is not limited to the manufacturing of diodes, zeners, stacks, rectifiers, integrated microcircuits, transistors, solar cells, light-sensing devices, and light-emitting devices.

(11) SOLVENT is any material containing VOC or any exempt compound that dissolves or can dissolve another substance. Developers and stripping agents that contain VOC or any exempt compound are included as solvents.

(12) SOLVENT CLEANING STATION is a workplace equipped to remove surface contaminants using a liquid or vapor solvent containing volatile organic compounds.

(13) STRIPPING is the removal of spent photoresist maskant from the product after etching, or the removal of oxide stencil from the product after diffusion.

(14) VOC COMPOSITE PARTIAL PRESSURE is the sum of the partial pressures of the compounds defined as VOCs.

VOC Composite Partial Pressure is calculated as follows:

$$PP_c = \sum_{i=1}^{n} \frac{\frac{W_i}{MW_i} \times VP_i}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

Where:

W_i = Weight of the "i"th VOC compound, in grams

W_w = Weight of water, in grams

W_e = Weight of exempt compound, in grams

MW_i = Molecular weight of the "i"th VOC compound, in grams per gram-mole

MW_w = Molecular weight of water, in grams per gram-mole

MW_e = Molecular weight of exempt compound, in grams per gram-mole

PP_c = VOC composite partial pressure at 20°C, in mm Hg

VP_i = Vapor pressure of the "i"th VOC compound at 20°C, in mm Hg

(15) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound containing the element carbon excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(c) Requirements

(1) Solvent Cleaning Stations

A person shall not operate a solvent cleaning station at a semiconductor manufacturing facility unless the following requirements are satisfied.

(A) All heated or unheated reservoirs, sinks, tanks and containers which transfer, store, or hold VOC-containing material shall be provided with a full cover or an approved emission control system. These covers must remain closed except while production, sampling, maintenance, or loading or unloading procedures require operator access.

(B) All heated or unheated reservoirs and sinks holding VOC-containing fluids with a VOC composite partial pressure of 33 mm Hg or less at 20°C (68°F), shall have a freeboard ratio greater than or equal to 1.0, or be equipped with an approved emission control system.

(C) Solvent flow of VOC-containing materials shall be applied in a continuous unbroken stream and in a manner which shall prevent liquid loss resulting from splashing.

(D) Liquid solvent leaks of 3 drops per minute or more shall be repaired within 24 hours of detection or the equipment shall be shut down until replaced or repaired.

(E) All equipment at a solvent cleaning station shall be operated and maintained in proper working order.

(2) Photoresist Operations

A person shall not allow photoresist operations at a semiconductor manufacturing facility unless the VOC-containing vapors are vented to an approved emission control system.

(3) Cleanup Solvents

A person shall not use VOC-containing materials for the purpose of cleaning equipment at a semiconductor manufacturing facility unless the following requirements are satisfied.

(A) The VOC content of the fluid shall not exceed 200 grams per liter (1.7 pounds per gallon) of material; or the VOC composite partial pressure shall not exceed 33 mm Hg (0.64 psia) at a temperature of 20°C (68°F); or the components being cleaned are totally enclosed during the washing, rinsing, and draining processes; or the cleanup solvents are flushed or drained in a manner that does not allow evaporation into the atmosphere; and

(B) only nonabsorbent, closed containers shall be used for the storage, transfer, or disposal of all VOC-containing accessories which include,

but are not limited to, cloth, paper, and other materials clearly used for cleanup with solvents.

(4) Alternative Emission Control Plan

An owner/operator may achieve compliance with subparagraph (c)(1) and/or (c)(2) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(5) Recordkeeping

Notwithstanding the provisions of subdivision (g), records shall be maintained pursuant to Rule 109.

(d) Prohibition of Specifications

A person shall not specify the use of any VOC-containing material for any process or operation within the SCAQMD, subject to the provisions of this rule, that does not meet the requirements of this rule. This prohibition shall apply to all written or oral contracts.

(e) Test Methods

(1) Determination of VOC Content

The VOC content of materials subject to the provisions of this rule shall be determined by the following the methods:

(A) United States Environmental Protection Agency (USEPA) Reference Method 24 (Code of Federal Regulations Title 40 Part 60, Appendix A). The exempt compound content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOC) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with paragraph (c), only when manufacturers specify which individual compounds are used in the coating formulation. In addition, the manufacturers must identify the USEPA, the California Air Resources Board, and the SCAQMD approved test methods used to quantify the amount of each exempt compound.

(2) Determination of VOC Composite Partial Pressure

The identity and quantity of components in solvents shall be determined by SCAQMD Method 308 (Quantitation of Compounds by Gas Chromatography) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual. The VOC composite partial pressure is calculated using equation in paragraph (b)(14).

(3) Determination of Efficiency of Emission Control System

(A) The efficiency of the collection device of the emission control system as specified in subparagraph (c)(1)(A) and (c)(1)(B) shall be determined by the USEPA method cited in 55 Federal Register 26865 (June 29, 1990), or any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD.

(B) The efficiency of the control device of the emission control system as specified in subparagraph (c)(1)(A) and (c)(1)(B),and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. USEPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(4) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the

specified test methods or set of test methods shall constitute a violation of the rule.

(5) All test methods referenced in this section shall be the most recent approved version.

(f) Rule 442 Applicability

Any operation or facility which is exempt from all or a portion of this rule shall comply with the provisions of Rule 442.

(g) Exemptions

The provisions of this rule shall not apply to facilities that produce less than five pounds of total VOC emissions over any continuous 24-hour period.

10/13/95

(Adopted August 5, 1988)(Amended July 14, 1995)

RULE 1166. VOLATILE ORGANIC COMPOUND EMISSIONS FROM DECONTAMINATION OF SOIL

(a) Applicability

This rule sets requirements to control the emission of Volatile Organic Compounds (VOC) from VOC-contaminated soil as a result of leakage from storage or transfer facilities, from accidental spillage, or other deposition.

(b) Definitions

(1) EXEMPT COMPOUNDS are defined in Rule 102 -- Definition Of Terms.

(2) SOIL DECONTAMINATION MEASURE is any process approved by the Executive Officer or designee to remediate, destroy, remove, or encapsulate VOC and VOC-contaminated soil.

(3) UNDERGROUND STORAGE TANK means any one or combination of tanks, including pipes connected thereto, which is used for the storage of organic liquid which is more than 90% beneath the surface of the ground.

(4) VOC CONTAMINATED SOIL is a soil which registers a concentration of 50 ppm or greater of Volatile Organic Compounds, when measured at a distance of no more than three inches from the surface of the excavated soil with an organic vapor analyzer calibrated with hexane, complying with 40 CFR Part 60 Appendix A, EPA Method 21 Section 3, or any equivalent method approved in writing by the Executive Officer or designee, the Chairman of the Air Resources Board or designee, and the Administrator of the United States Environmental Protection Agency or designee. If other calibrating gases were used, then the measured readings shall be correlated to and expressed as hexane.

(5) VOC CONTAMINATED SOIL MITIGATION PLAN is plan to minimize VOC emissions during excavation and any subsequent handling of VOC-contaminated soil.

(6) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(c) Requirements

(1) A person excavating an underground storage tank and/or transfer piping storing or previously storing VOC shall:

(A) Obtain an approved mitigation plan from the Executive Officer or designee prior to commencement of excavation.

(B) Notify the Executive Officer or designee by telephone at least 24 hours prior to excavation. Such notification shall include:

(i) Name and telephone number of the property owner.

(ii) Name and telephone number of the person excavating soil.

(iii) Location of the facility and location of the excavation.

(iv) VOC previously stored in the tank.

(v) Number and sizes of tanks to be removed or repaired.

(vi) Approved mitigation plan number.

(vii) Start and expected completion dates of the excavation.

If the excavation does not commence on start date, renotification is required.

An alternative notification procedure may be authorized for multiple excavations within a single facility, with prior written approval from the Executive Officer or designee.

(C) Monitor for VOC contamination at least once every 15 minutes and record all VOC concentration readings in a format approved by the Executive Officer or designee; and

(D) When VOC-contaminated soil is detected:

(i) Implement approved mitigation plan, and

(ii) Notify the Executive Officer or designee within 24 hours of detection of VOC-contaminated soil.

(2) A person handling VOC-contaminated soil shall comply with the provisions in subparagraphs (c)(1)(A) and (c)(1)(D)(i).

(3) A person treating VOC-contaminated soil shall:

(A) Obtain a permit to construct and/or operate control equipment, as applicable, from the Executive Officer or designee, and

(B) Implement VOC-contaminated soil decontamination measures, as approved by the Executive Officer or designee in writing, which result in Best Available Control Technology during all segments, and which include, but are not limited to, at least one of the following:

(i) Installation and operation of an underground VOC collection system and a disposal system prior to excavation.

(ii) Collection and disposal of the VOC from the excavated soil on-site using equipment approved by the Executive Officer or designee.

(iii) Any equivalent VOC-contaminated soil control measure previously approved in writing by the Executive Officer or designee.

(4) A person shall not engage in or allow any on-site or off-site spreading of VOC-contaminated soil which results in uncontrolled evaporation of VOC to the atmosphere.

(d) Exemptions

(1) The provisions of this rule shall not apply to the following:

(A) Excavation, handling, and treating of less than one (1) cubic yard of contaminated soil.

(B) Removal of soil for sampling purposes.

(C) Accidental spillage of five (5) gallons or less of VOC.

(2) The provisions of subparagraphs (c)(2), (c)(3), and (c)(4) shall not apply to the following:

(A) Soil containing organic compounds that have initial boiling points of 302°F or greater, provided that soil is not heated.

(B) Soil which is contaminated through natural seepage of VOC from oil and gas wells or other natural sources.

(C) Soil containing organic compounds having a Reid vapor pressure (RVP) less than 80 mm Hg (1.55 pounds per square inch), or an absolute vapor pressure (AVP) less than 36 mm Hg (0.7 psi) at 20°C.

(3) The provisions of subparagraphs (c)(1) and (c)(2) shall not apply to soil excavation or handling as a result of an emergency as declared by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized agency officer. Whenever possible, the Executive Officer or designee shall be notified by telephone prior to commencing such excavation. The Executive Officer or designee shall be notified in writing

no later than 48 hours following such excavation. Written notification shall include written emergency declaration from the authorized officer.

(Adopted April 7, 1989)(Amended March 2, 1990)(Amended Feb. 1, 1991)
(Amended July 19, 1991)(Amended August 2, 1991)
(Amended December 4, 1992)(Amended December 10, 1993)
(Amended April 11, 1997)(Amended February 13, 1998)(Amended September 15, 2000)
(Amended June 7, 2002)(Amended July 12, 2002)(Amended October 3, 2003)
(Amended January 7, 2005)(Amended October 6, 2017)

RULE 1168. ADHESIVE AND SEALANT APPLICATIONS

(a) Purpose and Applicability

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs), toxic air contaminants, and stratospheric ozone-depleting compounds from the application of adhesives, adhesive primers, sealants, and sealant primers. This rule applies to any person who uses, sells, stores, supplies, distributes, offers for sale, or manufactures for sale any adhesives, adhesive primers, sealants, or sealant primers, unless otherwise specifically exempted by this rule.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) ACRYLIC is a thermoplastic polymer or a copolymer of acrylic acid, methacrylic acid, esters of these acids, or acrylonitrile.

(2) ACRYLONITRILE-BUTADIENE-STYRENE (ABS) plastic is made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with an ABS marking.

(3) ABS TO POLYVINYL CHLORIDE (PVC) TRANSITION CEMENT is Plastic Welding Cement used to join ABS and PVC building drains or building sewers.

(4) ABS WELDING CEMENT is a Plastic Welding Cement that is used to join ABS pipe, fittings, and other system components, including, but not limited to, components for shower pan liner, drain, closet flange, and backwater valve systems.

(5) ADHESIVE is any substance that is used to bond one surface to another surface by attachment.

(6) ADHESIVE PRIMER is a film-forming material applied to a substrate, prior to the application of an adhesive or adhesive tape, to increase adhesion or film bond strength, promote wetting, or form a chemical bond with a subsequently applied adhesive.

(7) ADHESIVE TAPE is a backing material coated with an adhesive, and includes, but is not limited to, drywall tape, heat sensitive tape, pressure-sensitive adhesive tape, and water-activated tape.

(8) AEROSOL ADHESIVE is any adhesive packaged as an aerosol product in which the spray mechanism is permanently housed in a can designed for hand-held application where no ancillary hoses or spray equipment is used.

(9) AEROSOL PRODUCT is a pressurized spray system that dispenses product ingredients by means of a propellant contained in a product or a product's container, or by means of a mechanically induced force. Aerosol Products do not include Pump Spray.

(10) ARCHITECTURAL APPLICATION is the use of a regulated product on stationary structures, including mobile homes, and their appurtenances.

(11) ARCHITECTURAL APPURTENANCE is any accessory to a stationary structure, including, but not limited to, hand railings; cabinets; bathroom and kitchen fixtures; fences; rain-gutters and down-spouts; window screens; lamp-posts; heating and air conditioning equipment; other mechanical equipment; large fixed stationary tools; signs; motion picture and television production sets; and concrete forms.

(12) BIG BOX RETAILER is a physically large-chain retail outlet that is classified by the U.S. Department of Labor under North American Industry Classification System code 444110: Home Centers or identified in a list maintained by the Executive Officer.

(13) BUILDING ENVELOPE is the exterior and demising partitions of a building that enclose conditioned space.

(14) BUILDING ENVELOPE MEMBRANE ADHESIVES are used to adhere membranes applied to the building envelope to provide a barrier to air or vapor leakage through the building envelope that separates conditioned from unconditioned spaces. Building Envelope Membranes are applied to diverse materials, including, but not limited to, concrete masonry units (CMU), oriented stranded board (OSB), gypsum board, and wood substrates.

(15) CARPET PAD ADHESIVE is an adhesive used for the installation of a carpet pad (or cushion) beneath a carpet.

(16) CERAMIC, GLASS, PORCELAIN, AND STONE TILE ADHESIVE is an adhesive used for the installation of tile products.

(17) CHLORINATED POLYVINYL CHLORIDE (CPVC) plastic is a polymer of the chlorinated polyvinyl monomer that contains 67% chlorine and is normally identified with a CPVC marking.

(18) CPVC WELDING CEMENT is a Plastic Welding Cement that is used to join CPVC pipe, fittings, and other system components, including, but not limited to, components for shower pan liner, drain, closet flange, and backwater valve systems.

(19) CLEAR, PAINTABLE, AND IMMEDIATELY WATER-RESISTANT SEALANT is a compound with adhesive properties that contains no appreciable level of opaque fillers or pigments; transmits most or all visible light through itself when cured; is capable of being painted; is immediately resistant to precipitation upon application; and must meet the following criteria:

(A) Clarity of 15 turbidity units or less per ASTM D7315 - Determination of Turbidity Above 1 Turbidity Unit (TU) in Static Mode as manufactured and packaged;

(B) Color of Gardner 0 as tested by ASTM D1544 - Standard Test Method for Color of Transparent Liquids (Gardner Color Scale) or Platinum-Cobalt Color of 50 or less using ASTM D1209 - Standard Test Method for Color of Clear Liquids (Platinum-Cobalt Scale) as manufactured and packaged; and

(C) Compatible with paint per ASTM C1520 Standard Guide for Paintability of Latex Sealants.

(20) COMPUTER DISKETTE MANUFACTURING is the process where the fold-over flaps are glued to the body of a vinyl jacket.

(21) CONTACT ADHESIVE is an adhesive applied to two separate surfaces, allowed to dry before the two surfaces are placed in contact with each other, and forms an immediate bond after both adhesive-coated surfaces are placed in full contact with each other.

(22) CONSUMER PRODUCTS REGULATION is the regulation implemented by the California Air Resources Board (CARB) under Title 17 of the California Code of Regulations, Section 94507, et. seq.

(23) COVE BASE is a flooring trim unit, generally made of vinyl or rubber, having a concave radius on one edge and a convex radius on the opposite edge, that is used in forming a junction between the bottom wall course and the floor, to form an inside corner.

(24) CYANOACRYLATE ADHESIVE is an acrylic adhesive that contains ethyl, methyl, methoxymethyl or other functional groupings of cyanoacrylate.

(25) DIP COAT is a method of application to a substrate by submersion into, and removal from, a bath.

(26) DISTRIBUTION CENTER is a warehouse or other specialized building, which is stocked with products (goods), to be redistributed to retailers, wholesalers, or directly to end-users.

(27) DRY WALL ADHESIVE is an adhesive used during the installation of gypsum dry wall to studs or solid surfaces.

(28) EDGE GLUE is an adhesive applied to the edge of multi-sheet carbonless forms prior to being fanned apart after drying.

(29) ELECTROSTATIC APPLICATION is a spray method where the atomized droplets are charged and subsequently deposited on the substrate by electrostatic attraction.

(30) ENERGY CURABLE ADHESIVES AND SEALANTS are single-component reactive products that cure upon exposure to visible-light, ultra-violet light, or to an electron beam. The VOC content of thin film Energy Curable Adhesives and Sealants may be determined by manufacturers using ASTM Test Method 7767 Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them.

(31) EXEMPT COMPOUNDS are as defined in Rule 102 – Definition of Terms.

(32) FACILITY means any permit unit or grouping of permit units or other air contaminant-emitting activities which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control). Such above-described groupings, if not contiguous, but connected only by land carrying a pipeline, shall not be considered one facility.

(33) FIBERGLASS is fine filaments of glass.

(34) FLOW COAT is an application method that coats an object by flowing a stream of regulated product over the object and draining off any excess product.

(35) FOAM INSULATION is an expanding foam that is sprayed into ceiling or wall cavities to provide thermal resistance or to minimize air infiltration.

(36) FOAM SEALANT is a foam used to fill and form a durable, airtight, water-resistant seal to common building substrates, such as wood, brick, concrete, foam board, and plastic.

(37) GRAMS OF VOC PER LITER OF REGULATED PRODUCT, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and product solids, and can be calculated by the following equation:

Grams of VOC per Liter of Regulated Product, Less Water and Less Exempt Compounds = $\frac{W_s - W_w - W_{es}}{V_m - V_W - V_{es}}$

Where: W_s = weight of volatile compounds, in grams
W_w = weight of water, in grams
W_{es} = weight of exempt compounds, in grams
V_m = volume of material, in liters
V_w = volume of water, in liters
V_{es} = volume of exempt compounds, in liters

For reactive products, the VOC content is determined after curing. The grams of VOC per liter of any regulated product, except a low-solids product, shall be calculated by the following equation:

Grams of VOC per Liter of Regulated Product, Less Water and Less Exempt Compounds = $\frac{W_{rs} - W_{rw} - W_{res}}{V_{rm} - V_{rw} - V_{res}}$

Where: W_{rs} = weight of volatile compounds not consumed during curing, in grams
W_{rw} = weight of water not consumed during curing, in grams
W_{res} = weight of exempt compounds not consumed during curing, in grams
V_{rm} = volume of material prior to reaction, in liters
V_{rw} = volume of water not consumed during curing, in liters
V_{res} = volume of exempt compounds not consumed during curing, in liters

(38) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material, to be used for a low-solids product, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds, in grams
W_w = weight of water, in grams
W_{es} = weight of exempt compounds, in grams
V_m = volume of material, in liters

For reactive products, the VOC content is determined after curing.

(39) GROUT is a cement-based sealant formulated to fill or seal gaps, including those associated with, but not limited to, tile installations.

(40) HAND APPLICATION METHODS is the application of a regulated product using hand held equipment. Such equipment includes paint brush, hand roller, trowel, spatula, dauber, rag, sponge, and mechanically- and/or pneumatic-driven syringe provided there is no atomization of the materials.

(41) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is equipment used to apply a regulated product by means of a spray gun that is designed to be operated and that is operated between 0.1 and 10 pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns.

(42) INDOOR FLOOR COVERING ADHESIVE is an adhesive used during the installation of a carpet or indoor flooring that is in an enclosure and is not exposed to ambient weather conditions during normal use.

(43) LOW-SOLIDS is any regulated product that contains less than one pound of solids per gallon of material (or 120 grams of solids per liter of material).

(44) MAINTENANCE is a routine process to keep equipment and machinery in working order or to prevent breakdowns.

(45) MANUFACTURING is the use of tools and labor to make things for sale.

(46) MARINE APPURTENANCES include, but are not limited to, a wood boardwalk, deck, dock, fender, lock gate, or other wooden structure specified for the marine environment.

(47) MARINE DECK SEALANT is any sealant that is applied to wooden marine decks and their appurtenances and is specified and used exclusively for the marine environment.

(48) MARINE DECK SEALANT PRIMER is any sealant primer that is applied to wooden marine decks and their appurtenances and is specified and used exclusively for the marine environment.

(49) MODIFIED BITUMINOUS PRIMER consist of bituminous materials, and a high flash solvent used to prepare a surface by (1) improving the adhesion and (2) absorbing dust from the surface for adhesive, or flashing cement bitumen membrane.

(50) MODIFIED BITUMINOUS MATERIALS are materials obtained from natural deposits of asphalt or residues from the distillation of crude oil petroleum or coal which consist mainly of hydrocarbons, and include, but are not limited to, asphalt, tar, pitch, and asphalt tile that are soluble in carbon disulfide.

(51) MULTI-PURPOSE CONSTRUCTION ADHESIVE is any adhesive to be used for the installation or repair of various construction materials, including, but not limited to, drywall, subfloor, panel, fiberglass reinforced plastic (FRP), ceiling tile, and acoustical tile.

(52) NON-STAINING PLUMBING PUTTY is a non-staining sealant formulated for use on natural surface materials that remains flexible and creates a waterproof seal when setting plumbing fixtures.

(53) OUTDOOR FLOOR COVERING ADHESIVE is an adhesive used during the installation of carpet or floor covering that is not in an enclosure and is exposed to ambient weather conditions during normal use.

(54) OZONE-DEPLETING COMPOUND is as defined in Rule 102.

(55) PANEL ADHESIVE is an adhesive used for the installation of plywood, pre-decorated hardboard (or tileboard), FRP, and similar pre-decorated or non-decorated panels to studs or solid surfaces.

(56) PERCENT VOC BY WEIGHT is the ratio of the weight of the VOC to the weight of the material, expressed as a percentage of VOC by weight. The percent VOC by weight can be calculated as follows:

$$\% \text{ VOC weight} = \frac{W_v}{W} \times 100$$

Where: W_v = weight of the VOCs, in grams

W = weight of material, in grams

(57) PERSON is as defined in Rule 102.

(58) PLASTIC ADHESIVE PRIMER is a material applied to CPVC and PVC plastic to prepare joining surfaces for the application of CPVC or PVC welding cements.

(59) PLASTIC WELDING CEMENT is the use of adhesives made of resins and solvents which are used to dissolve the surfaces of plastic, except ABS, CPVC, and PVC plastic, to form a bond between mating surfaces.

(60) PLASTIC FOAM is a foam constructed of plastics.

(61) PLASTICS are synthetic materials chemically formed by the polymerization of organic (carbon-based) substances. Plastics are usually compounded with modifiers, extenders, and/or reinforcers. They are capable of being molded, extruded, cast into various shapes and films, or drawn into filaments and are used to produce pipe, solid sheet, film, or bulk products.

(62) POLYCARBONATE is a thermoplastic resin derived from bisphenol A and phosgene, a linear polyester of carbonic acid, dihydroxy compound and any carbonate diester, or by ester interchange.

(63) POLYETHYLENE TEREPHTHALATE (PET, PETE) is a thermoplastic polyester formed from ethylene glycol by direct esterification or by catalyzed ester exchange between ethylene glycol and dimethyl terephthalate.

(64) POLYETHYLENE TEREPHTHALATE GLYCOL (PETG) is a glycol modified polyethylene terephthalate.

(65) POLYVINYL CHLORIDE (PVC) plastic is a polymer of the vinyl chloride monomer that contains 57 percent chlorine.

(66) POROUS MATERIAL is a substance which has tiny openings, often microscopic, in which fluids may be absorbed or discharged. Such materials include, but are not limited to, wood, fabric, paper, corrugated paperboard, and plastic foam.

(67) POTABLE WATER ARCHITECTURAL SEALANT is a sealant used in water treatment or water distribution applications required to comply with NSF/ANSI Standard 61: Drinking Water System Components – Health Effects.

(68) PRESSURE SENSITIVE ADHESIVE is an adhesive, typically coated on backings or release liners that forms a bond when pressure is applied, without the need for solvent, water, or heat.

(69) PRIVATE LABELER is the person, company, firm, or establishment (other than the toll manufacturer) identified on the label of a regulated product.

(70) PUMP SPRAY is a packaging system in which the product ingredients within the container are not under pressure and in which the product is expelled only while a pumping action is applied to a button, trigger, or other actuator.

(71) PVC WELDING CEMENT is a Plastic Welding Cement that is used to join PVC pipe, fittings, and other system components, including, but not limited to, components for shower pan liner, drain, closet flange, and backwater valve systems.

(72) QUANTITY AND EMISSIONS REPORT (QER) is the report specified in subparagraph (f)(2).

(73) REACTIVE PRODUCTS are regulated products composed, in part, of monomers that become integral parts of the cured product through chemical reaction. Reactive Products include, but are not limited to, polyurethane and two-component regulated products.

(74) REGULATED PRODUCT is an adhesive, adhesive primer, sealant, or sealant primer subject to this rule.

(75) REINFORCED PLASTIC COMPOSITE is a composite material consisting of plastic reinforced with fibers.

(76) REPAIR is an operation or activity to return a damaged object or an object not operating properly, to good condition.

(77) ROADWAY SEALANT is any sealant to be applied to streets, highways, and other surfaces, including, but not limited to, curbs, berms, driveways, and parking lots.

(78) ROLL COATER is a series of mechanical rollers that form a thin film on the surface roller, which is applied to a substrate by moving the substrate underneath the roller.

(79) RUBBER is any natural or manmade rubber-like substrate, and includes, but is not limited to, styrene-butadiene, polychloroprene (neoprene), butyl, nitrile, chlorosulfonated polyethylene, and ethylene propylene diene terpolymer.

(80) RUBBER FLOORING ADHESIVE is an adhesive that is used for the installation of flooring material in which both the back and top surfaces are made of synthetic rubber, and which may be in sheet or tile form.

(81) RUBBER VULCANIZATION ADHESIVE is a reactive adhesive used for rubber-to-substrate bonding achieved during vulcanization of the rubber elastomer at temperatures greater than 250°F. Vulcanized rubber adhesive does not include bonding previously vulcanized rubber.

(82) SEALANT is any material with adhesive properties that is designed to fill, seal, waterproof, or weatherproof gaps or joints between two surfaces. Sealants include caulks.

(83) SEALANT PRIMER is any film-forming product applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.

(84) SHOE REPAIR, LUGGAGE AND HANDBAG ADHESIVE is an adhesive used to repair worn, torn, or otherwise damaged uppers, soles, and heels of shoes, or for making repairs to luggage and handbags.

(85) SINGLE PLY ROOF MEMBRANE ADHESIVE is any adhesive sealant to be used for the installation or repair of single ply roof membrane. Installation includes, but is not limited to, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.

(86) SINGLE PLY ROOF MEMBRANE SEALANT is any sealant used for the installation or repair of single ply roof membrane.

(87) SOLVENT WELDING is the softening of the surfaces of two substrates by wetting them with solvents and/or adhesives, and joining them together through a chemical and/or physical reaction(s) to form a fused union.

(88) SPECIAL PURPOSE CONTACT ADHESIVE is a contact adhesive that is used to bond all of the following substrates to any surface: melamine covered board, metal, unsupported vinyl, Teflon, ultra-high molecular weight polyethylene, rubber, and wood veneer 1/16 inch or less in thickness.

(89) STRUCTURAL GLAZING ADHESIVE is any adhesive to be used to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.

(90) STRUCTURAL WOOD MEMBER ADHESIVE is an adhesive used for the construction of any load bearing joints in wooden joists, trusses, or beams.

(91) SUBFLOOR ADHESIVE is an adhesive used for the installation of subflooring material over floor joists.

(92) THIN METAL LAMINATING ADHESIVE is an adhesive for bonding multiple layers of metal to metal or metal to plastic in the production of

electronic or magnetic components in which the thickness of the bond line(s) is less than 0.25 mil.

(93) TIRE REPAIR is the expanding of a hole, tear, fissure, or blemish in a tire casing by grinding or gouging, applying adhesive, and filling the hole or crevice with rubber.

(94) TIRE TREAD ADHESIVE is any adhesive to be applied to the back of precured tread rubber and to the casing and cushion rubber, or to be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.

(95) TOLL MANUFACTURER is a regulated product manufacturer who produces regulated product for a private labeler.

(96) TOP AND TRIM ADHESIVE is an adhesive used during the installation of automotive and marine trim, including, but not limited to, headliners, vinyl tops, vinyl trim, sunroofs, dash covering, door covering, floor covering, panel covering, and upholstery.

(97) TOXIC AIR CONTAMINANT (TAC) is an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health as listed by the Office of Environmental Health Hazard Assessment.

(98) TRAFFIC MARKING TAPE is preformed reflective tape that is applied to public streets, highways, and other surfaces, including, but not limited to, curbs, berms, driveways, and parking lots.

(99) TRAFFIC MARKING TAPE ADHESIVE PRIMER is any adhesive primer that is applied to surfaces prior to installation of traffic marking tape.

(100) TRANSFER EFFICIENCY is the ratio of the weight or volume of the regulated product solids adhering to an object to the total weight or volume, respectively, of the regulated product solids dispensed in the application process, expressed as a percentage.

(101) VINYL COMPOSITIONS TILE (VCT) is a material made from thermoplastic resins, fillers, and pigments.

(102) VEHICLE GLASS ADHESIVE PRIMER is a primer applied to vehicle glass or to the frame of a vehicle prior to installation or repair of the vehicle glass using an adhesive or sealant to improve adhesion to the pinch weld. For the purposes of this definition, a vehicle is a mobile machine that transports passengers or cargo, and includes, but is not limited to, automobiles, trucks, buses, motorcycles, trains, ships, and boats.

(103) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(104) WATERPROOF RESORCINOL GLUE is a two-part, resorcinol-resin-based adhesive used in applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

(105) WOOD FLOORING ADHESIVE is an adhesive used to install a wood floor surface, which may be in the form of parquet tiles, wood planks, or strip-wood.

(c) Requirements

(1) A person shall not use, sell, store, supply, distribute, offer for sale, or manufacture regulated products subject to the provisions of this rule, which contain VOC in excess of the limits specified in Table 1 below:

Table 1 – Regulated Product Categories and VOC Limits

Category	VOC Limits (g/L)[1]			
	Current	Upon Adoption	1/1/2019	1/1/2023
Adhesives				
Architectural Applications				
Building Envelope Membrane Adhesive	250			
Carpet Pad Adhesive	50			
Ceramic Glass, Porcelain, & Stone Tile Adhesive	65			
Cove Base Adhesive	50			
Dry Wall and Panel Adhesive	50			
Multi-Purpose Construction Adhesives	70			
Roofing				
Single Ply Roof Membrane Adhesive	250			200[2]
All Other Roof Adhesives	250			200[2]
Rubber Floor Adhesive	60			
Structural Glazing Adhesive	100			
Structural Wood Member Adhesive	140			
Subfloor Adhesive	50			
VCT and Asphalt Tile Adhesive	50			
Wood Flooring Adhesive	100			20
All Other Indoor Floor Covering Adhesives	50			
All Other Outdoor Floor Covering Adhesives	150		50	

Category	VOC Limits (g/L)[1]			
	Current	Upon Adoption	1/1/2019	1/1/2023
Computer Diskette Manufacturing Adhesive	350			
Contact Adhesive	80			
Edge Glue Adhesive	250			
Plastic Welding Cement				
ABS Welding Cement	325			
ABS to PVC Transition Cement	510			425[2]
CPVC Welding Cement	490			400[2]
PVC Welding Cement	510			425[2]
All Other Plastic Welding Cements	250		100	
Rubber Vulcanization Adhesive	250	850		250
Special Purpose Contact Adhesive	250			
Thin Metal Laminating Adhesive	780			
Tire Tread Adhesive	100			
Top and Trim Adhesive	250	540		250[2]
Waterproof Resorcinol Glue	250		170	
All Other Adhesives	250			
Substrate Specific Adhesives				
Metal	30			
Plastic Foams	50			
Porous Material (except wood)	50			
Wood	30			
Fiberglass	80			
Reinforced Plastic Composite	250		200	
Sealants				
Architectural Applications				
Clear, Paintable, and Immediately Water-Resistant Sealant	250	380		250
Foam Insulation	250			50[3]
Foam Sealant	250			50[3]
Grout	250	65		
Roadway Sealant	250			
Non-Staining Plumbing Putty	250	150		50
Potable Water Sealant	250	100		
Roofing				
Single Ply Roof Membrane Sealant	450			250[2]
All Other Roof Sealants	300			250[2]

Category	VOC Limits (g/L)[1]			
	Current	Upon Adoption	1/1/2019	1/1/2023
All Other Architectural Sealants	250		50	
Marine Deck Sealant	760			
All Other Sealants	420			250
Adhesive Primers				
Plastic	550			
Pressure Sensitive	250	785		
Traffic Marking Tape	150			
Vehicle Glass	250	700		
All Other Adhesive Primers	250			
Sealant Primers				
Architectural Applications				
Non Porous	250			
Porous	775			
Marine Deck	760			
Modified Bituminous	500			
All Other Sealant Primers	750			

1. VOC limits are expressed as grams of VOC per liter of regulated product, less water and less exempt compounds, as defined in paragraph (b)(37) except for low-solid regulated products where the VOC limit is expressed in grams per liter of material as defined in paragraph (b)(38).
2. Technology assessment will be conducted in 2022 and the Executive Officer shall report on the results of the technology assessment to the Stationary Source Committee prior to the implementation date.
3. Technology assessment will be conducted in 2020 and the Executive Officer shall report on the results of the technology assessment to the Stationary Source Committee prior to the implementation date.

(2) Regulated Product Categorization

(A) Adhesives not regulated by a specific adhesive category, shall be limited to the VOC limits listed under the Substrate Specific Adhesive category in Table 1, if anywhere on the regulated product container, on any sticker or label affixed thereto, or in any sales or advertising literature, any representation is made that the regulated product may be used, or is suitable for use, on that substrate. If the adhesive is used to bond dissimilar substrates together, the higher Substrate Specific Adhesive VOC limit shall apply.

(B) If anywhere on the regulated product container, on any sticker or label affixed thereto, or in any sales or advertising literature, any representation is made that the regulated product may be used, or is suitable for use, as a regulated product for which a VOC standard in a specific category is specified in Table 1, then the lowest VOC standard shall apply. This provision does not apply to Substrate Specific Adhesives.

(3) Sell-Through and Use-Through Provision

Any regulated product that is manufactured prior to the effective date of the applicable limit specified in Table 1 and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, or offered for sale for up to three years after the specified effective date and used up to four years after the specified effective date.

(4) All regulated product containers shall be closed when not in use. Any VOC-laden application tools, such as a brush, pad, rag, cloth, or paper, used in the regulated product application, shall be stored and disposed of in closed containers when not in use.

(5) Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials, used in cleaning operations shall be conducted pursuant to Rule 1171 - Solvent Cleaning Operations.

(6) Transfer Efficiency

A person shall not apply VOC-containing regulated product unless the regulated product is applied with properly operating equipment in accordance with operating procedures specified by either the equipment manufacturer or by use of one of the following methods:

(A) Electrostatic application; or

(B) Flow coat; or

(C) Dip coat; or

(D) Roll coat; or

(E) High-Volume, Low-Pressure (HVLP) spray; or

(F) Hand application methods; or

(G) Such other application methods as are demonstrated to the Executive Officer to be capable of achieving a transfer efficiency equivalent to or better than the method listed in subparagraph

(c)(6)(E) and for which prior written approval of the Executive Officer has been obtained.

(7) Control Devices

A person may comply with the provisions of paragraphs (c)(1), or (c)(6), or both, by using approved air pollution control equipment to apply a regulated product, provided:

(A) The control device reduces VOC emissions from an emission collection system by at least 95 percent by weight or the output of the air pollution control device is no more than 50 ppm VOC by volume calculated as carbon with no dilution; and

(B) The owner/operator demonstrates that the emission collection system collects at least 90 percent by weight of the VOC emissions generated by the sources of VOC emissions.

(8) A person may comply with the provisions of paragraph (c)(1) by means of an Alternative Emission Control Plan to apply a regulated product pursuant to Rule 108.

(9) The VOC content of regulated products that are applied with the use of refillable pressurized spray system are subject to the VOC limits of this rule.

(10) Except as provided in subdivision (i) and paragraphs (c)(3), (c)(7), and (c)(8), a person shall not store regulated products which contain VOC in excess of the limits specified in paragraph (c)(1).

(11) Containers used for mixing VOC-containing regulated products shall be kept closed at all times except when in use or when product is being added or removed.

(d) Recordkeeping Requirements

Records of regulated product usage shall be maintained pursuant to Rule 109.

(e) Test Methods

(1) The VOC content of regulated products shall be determined by the South Coast Air Quality Management District (SCAQMD) using the applicable test methods below. When a test method specifies it is inapplicable to a product category, it shall not be used for that inapplicable category. The Executive Officer will develop a Guidance Document to determine which test method will be used when two or more applicable test methods can be

used to demonstrate compliance with the rule. The selected test method will be based on product type, chemistry, and VOC content.

(A) VOC content may be determined by USEPA Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating, Code of Federal Regulations Title 40, Appendix A, utilizing Procedure B of ASTM Method D2369).

(B) VOC content may be determined by Method 304 (Determination of Volatile Organic Compounds (VOC) in Various Materials) in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt compound content shall be determined by Method 303 in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" or ASTM Method D4457.

(D) VOC content may be determined by Method 313 (Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry) in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(E) VOC content may be determined by ASTM Test Method 6886 (Standard Test Method for Determination of the Weight Percent Individual Volatile Organic Compounds in Waterborne Air-Dry Coatings by Gas Chromatography).

(F) The VOC content of PVC, CPVC, ABS, ABS to PVC Transition Welding Cements, and plastic adhesive primers shall be determined by Method 316A in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples."

(G) The VOC content of cyanoacrylate adhesives shall be determined by Method 316B in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples."

(H) The VOC content of reactive adhesives may be determined by Appendix A to Subpart PPPP of 40 CFR Part 63—Determination of Weight Volatile Matter Content and Weight Solids Content of Reactive Adhesives.

(2) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by USEPA'S Test Method 18, or CARB Method 422 for the determination

of emissions of Exempt Compounds and USEPA's Test Methods 25, 25A, SCAQMD's Method 25.1, or SCAQMD Test Method 25.3. (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) for the determination of total organic compound emissions. Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of the rule.

(3) Viscosity shall be determined by ASTM D 1084- Standard Test Methods for Viscosity of Adhesives.

(4) The following classes of compounds: cyclic, branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision (c), only at such time as manufacturers specify which individual compounds are used in the regulated product formulations and identify the test methods, which, prior to such analysis, have been approved by the USEPA and the SCAQMD, that can be used to quantify the amounts of each exempt compound.

(5) Equivalent Test Methods

Other test methods determined to be equivalent after review by the Executive Officer, CARB, and the USEPA, and approved in writing by the District Executive Officer, may also be used.

(6) All test methods referenced in this subdivision shall be the version most recently approved by the appropriate governmental entities.

(f) Administrative Requirements

(1) Regulated products manufactured after January 1, 2019, shall display the following:

(A) Each container shall display the VOC content of the regulated product, as recommended for application. VOC content shall be displayed as grams of VOC per liter of regulated product, excluding water and exempt compounds, or grams of VOC per liter of material for low-solids products. The VOC content shall be determined by calculation based on product formulation or laboratory analysis using the applicable test method in subdivision (e).

(i) Regulated products subject to both the provisions of this rule and the Consumer Products Regulation may display the VOC content as percent VOC provided the regulated product has supplemental product documentation published from the manufacturer that displays the VOC content in grams of VOC per liter of regulated product.

(B) Each container or an associated product data sheet shall display a statement of the manufacturer's recommendations regarding thinning, reducing, or mixing with any other VOC containing material, if applicable. Mixing recommendations shall specify a ratio which results in a compliant, as applied, product.

(C) Each container shall display the date of manufacture of the contents or a date code indicating the date of manufacture. A manufacturer utilizing a date code shall file an explanation of each date code with the District Executive Officer.

(D) Each container of all Top and Trim Adhesives shall include the statement "For Top and Trim Uses Only" prominently displayed.

(E) Each container of all Rubber Vulcanization Adhesives shall include the statement "For Rubber Vulcanization Adhesive Uses Only" prominently displayed.

(F) Each container of all Pressure Sensitive Adhesive Primers shall include the statement "For Pressure Sensitive Adhesive Primer Uses Only" prominently displayed.

(G) Each container of all ABS to PVC Transition Cements shall include the statement "For ABS to PVC Transition Uses Only" prominently displayed.

(2) Reporting Requirements

(A) Reporting Timeline

A Quantity and Emission Report (QER) shall be submitted according to the reporting timeline identified in Table 2 below:

(i) Every three years, from the years 2019 to 2025.

(ii) Every five years, thereafter, until and including 2040.

Table 2: Reporting Timeline

Reporting Deadlines		
Manufacturers & Private Labelers	**Big Box Retailers & Distribution Centers**	**Reported Years**
September 1, 2019	May 1, 2019	2017, 2018
September 1, 2022	May1, 2022	2020, 2021
September 1, 2025	May 1, 2025	2023, 2024
September 1, 2030	May 1, 2030	2028, 2029
September 1, 2035	May 1, 2035	2033, 2034
September 1, 2040	May 1, 2040	2038, 2039

(B) General QER

A manufacturer or private labeler of regulated products shall submit to the District a QER of regulated product sales into or within the District according to the schedule in Table 2. The report shall include the following information:

(i) Product manufacturer (as listed on the label);

(ii) Product name and code;

(iii) Applicable Rule 1168 category;

(iv) The grams of VOC per liter of regulated product (less water and exempt solvents);

(v) The grams of VOC per liter of material;

(vi) Whether the product is waterborne or solvent-based;

(vii) Total annual volume sold into or within the District, including products sold through distribution centers located within or outside the District, reported in gallons for all container sizes;

(viii) For any regulated product with VOC content higher than the applicable limit in Rule 1168, an indication whether the product has been sold under any of the following provision of this rule:

(A) Sell-through provision;

(B) Low-Solids product;

(C) Exempted under subdivision (i);

(D) Complying with subparagraph (c)(7) – Control Device ; or

(E) Complying with subparagraph (c)(8) - Alternative Emission Control.

(C) Aerosol QER

The manufacturer or private labeler of aerosol adhesives and aerosol adhesive primers shall submit to the District a QER of aerosol adhesive and aerosol adhesive primer sales into or within the District according to the schedule in Table 2. The report shall include the following information:

(i) Product manufacturer (as listed on the label);

(ii) Product name and code;

(iii) Percent VOC by weight;

(iv) Total weight sold, including products sold through distribution centers located within or outside the District; and

(v) Container size of product.

(D) A corporate officer of the manufacturer or private labeler of regulated products, who previously reported under (f)(2)(B) and (f)(2)(C), that had no distribution or sales into or within the District for the specified reporting years in Table 2, must certify that fact in a letter and on company letterhead by the reporting deadline specified in Table 2.

(i) A manufacturer or private labeler of regulated products that has no intention to sell regulated products into or within the District in future years, must indicate that fact to be removed from future outreach efforts.

(ii) A manufacturer or private labeler of regulated products who resumes sales of regulated product into or within the District, must adhere to the reporting requirements specified in (f)(2)(B) and (f)(2)(C).

(E) Big Box Retailer or Distribution Center QER

A big box retailer or distribution center shall submit a QER to the regulated product manufacturer or private labeler, according to the schedule in Table 2. The QER must be electronically submitted, in a spreadsheet format and certified that all information reported is true and correct. The QER must contain the following information:

(i) The manufacturer or private labeler's product name and code; and

(ii) The quantity of each regulated product, aerosol adhesive, and aerosol adhesive primer distributed into the District.

(F) Facilities Using the 55 Gallon Exemption

For each calendar year (January 1 through December 31) beginning in 2017, the facility using or purchasing regulated products under the provisions of paragraph (i)(5)(C) shall submit to the District by September 1 of the following calendar year, an annual report of regulated product used under the provisions of paragraph (i)(5)(C) within the District. The report shall include the following information:

(i) Product manufacturer (as listed on the label);

(ii) Product name and code;

(iii) The grams of VOC per liter of regulated product (less water and exempt solvents);

(iv) The grams of VOC per liter of material;

(v) Unit size of product;

(vi) Total volume purchased, in gallons;

(vii) The name and address of the company or retailer where the products were purchased.

(3) Manufacturers, private labelers, or suppliers of regulated products shall maintain records to verify data used to determine VOC content in preparing their QER. The records shall be maintained for three (3) years and made available upon request by the Executive Officer. Such records shall include:

(A) Laboratory reports; or

(B) Formulation data used for VOC content calculations.

(4) Confidentiality of Information

Subject to the provisions of the California Public Records Act (Gov Code §§ 6250-6276.48) information submitted to the Executive Officer may be designated as confidential. The designation must be clearly indicated on the reporting form, identifying exactly which information is deemed confidential. District guidelines require a detailed and complete basis for such claim in the event of a public records request.

(g) Prohibition of Sales and Use

(1) Except as provided in subdivision (i), no person shall use, supply, sell, or offer for sale a regulated product in the District that contains chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene.

(2) On and after January 1, 2019, except as provided in subdivision (i), no person shall use, supply, sell, or offer for sale a regulated product in the District that contains Group II exempt compounds listed in Rule 102 in quantities greater than 0.1 percent by weight. This provision does not apply to cyclic, branched, or linear, completely methylated siloxanes.

(h) Rule 442 Applicability

Any regulated product which is exempt from all or a portion of this rule shall comply with the provisions of Rule 442.

(i) Exemptions

(1) The provisions of this rule shall not apply to:

(A) Adhesives, adhesive primers, sealants, or sealant primers, and associated application processes that are subject to Rule 1124;

(B) Adhesive tape;

(C) Regulated products shipped, supplied, or sold to persons for use outside the District; or

(D) Distribution centers that do not ship regulated products into or within the District.

(2) The provisions of this rule, except paragraphs (f)(2)(C), shall not apply to aerosol adhesives and primers dispensed from non-refillable aerosol spray systems.

(3) The provisions of this rule, except paragraphs (g)(1) and (g)(2), shall not apply to:

(A) Regulated products sold in quantities of one fluid ounce or less;

(B) Adhesives used to glue flowers to parade floats;

(C) Adhesives used to fabricate orthotics and prosthetics under a medical doctor's prescription; or

(D) Shoe repair, luggage, and handbag adhesives.

(4) The provisions of subdivision (c) shall not apply to:

(A) Research and development programs and quality assurance labs. Records shall be maintained in accordance with the provisions of subdivision (d) of this rule; or

(B) Solvent welding operations used in the manufacturing of medical devices.

(5) The provisions of paragraph (c)(1) shall not apply to the following:

(A) Adhesives used in tire repair;

(B) Adhesives and/or adhesive application processes in compliance with Rules 1104, 1106, 1128, 1130, and 1130.1;

(C) A facility that demonstrates that the total volume of noncompliant products is less than 55 gallons per facility per calendar year. A facility may not use this paragraph to exclude noncompliant adhesives used in architectural applications, contact adhesives, special purpose contact adhesives, and adhesives used on porous substrates. Effective January 1, 2019, a facility may not use this paragraph to exclude noncompliant rubber vulcanization adhesives and top and trim adhesives; or

(D) Regulated products used in the field installation and repair of potable water linings and covers at water treatment, storage, or water distribution facilities.

(6) The provisions of paragraph (c)(6) shall not apply to regulated products with a viscosity of 200 centipoise or greater.

(7) The provisions of subdivision (f) shall not apply to thermoplastic hot melt adhesives or to regulated products offered for sale as a dry mix, containing no polymer, which are ready for use or only mixed with water prior to use, and include, but are not limited to, grouts, cements, and mortars.

(8) The provisions of subdivisions (c) and (d), shall not apply to regulated products with a VOC content no more than 20 grams per liter, less water and less exempt compounds, or no more than 20 grams per liter material for low-solids regulated products.

(9) Until January 1, 2021, the provision of paragraph (g)(1) and (g)(2) shall not apply to solvent welding formulations containing methylene chloride used to bond hard acrylic, polycarbonate, and polyethylene terephthalate glycol plastic fabrications, provided:

(A) The concentration of methylene chloride in any solvent welding formulation does not exceed 60 percent by weight; and

(B) The purchase of all solvent welding products does not exceed 20 gallons per calendar year at a single facility, as demonstrated by purchase records and invoices of methylene chloride containing solvent welding formulations. Such records shall be made available to the Executive Officer upon request.

(10) The provisions of this rule shall not apply to regulated products, which weigh one pound or less, or consist of 16 fluid ounces or less and have VOC content limits in Section 94509(a) of the Consumer Products Regulation, unless they are:

(A) Incorporated into or used exclusively in the manufacture or construction of the goods or commodities, and not exempted in paragraph (i)(2); or

(B) Used in pollution-generating activities that take place at stationary sources, excluding maintenance and repair, and not exempted in paragraph (i)(2).

(11) As of January 1, 2018, the provisions of subdivision (c)(1) and (g) shall not apply to any manufacturer or supplier of regulated products provided the product was sold to an independent distributor that was informed in writing, including electronic formats, by the manufacturer or supplier, that the regulated product is not to be used in the South Coast Air Quality Management District. Manufacturers utilizing this provision shall maintain notification letters for three (3) years, which shall be made available to the Executive Officer or designee upon request.

(Adopted August 2, 1991)(Amended May 12, 1995)(Amended September 13, 1996)
(Amended June 13, 1997)(Amended October 8, 1999)(Amended August 2, 2002)
(Amended November 7, 2003)(Amended May 6, 2005)(Amended July 14, 2006)
(Amended February 1, 2008)

RULE 1171. SOLVENT CLEANING OPERATIONS

(a) Purpose and Applicability

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs), toxic air contaminants, and stratospheric ozone-depleting or global-warming compounds from the use, storage and disposal of solvent cleaning materials in solvent cleaning operations and activities. A solvent cleaning operation is solvent cleaning conducted as part of a business. This rule applies to: all persons who use these solvent materials in solvent cleaning operations during the production, repair, maintenance, or servicing of parts, products, tools, machinery, equipment, or general work areas; all persons who store and dispose of these materials used in solvent cleaning operations; and all solvent suppliers who supply, sell, or offer for sale solvent cleaning materials for use in solvent cleaning operations.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) AEROSOL PRODUCT is a hand-held, non-refillable container which expels pressurized product by means of a propellant-induced force.

(2) APPLICATION EQUIPMENT is a device used to apply adhesive, coating, ink, or polyester resin materials.

(3) APPLICATION LINE is that portion of a motor vehicle assembly production line which applies surface and other coatings to motor vehicle bodies, hoods, fenders, cargo boxes, doors, and grill opening panels.

(4) ARCHITECTURAL COATING is any coating applied to stationary structures and their appurtenances, to mobile homes, to pavements, or to curbs.

(5) BLANKET is a synthetic rubber mat used in offset-lithography to transfer or “offset” an image from a planographic printing plate to the paper or other substrate.

(6) BLANKET WASH is a solvent used to remove ink from the blanket of a press.

(7) CLEAN AIR SOLVENT is as defined in Rule 102.

(8) CLEAN AIR SOLVENT CERTIFICATE is a certificate issued by the District to a manufacturer, distributor, or person for a specific product or class of products that meets the criteria for a Clean Air Solvent.

(9) CURED COATING, CURED INK, OR CURED ADHESIVE is a coating, ink, or adhesive, which is dry to the touch.

(10) ELECTRICAL APPARATUS COMPONENTS is an internal component such as wires, windings, stators, rotors, magnets, contacts, relays, energizers, and connections in an apparatus that generates or transmits electrical energy including, but not limited to: alternators, generators, transformers, electric motors, cables, and circuit breakers, except for the actual cabinet in which the components are housed. Electrical components of graphic arts application equipment and hot-line tools are also included in this category.

(11) ELECTRON BEAM INK is an ink that dries by chemical reaction caused by high energy electrons.

(12) ELECTRONIC COMPONENT is that portion of an assembly, including circuit card assemblies, printed wire assemblies, printed circuit boards, soldered joints, ground wires, bus bars, and other electrical fixtures, except for the actual cabinet in which the components are housed.

(13) EXEMPT COMPOUND is as defined in Rule 102.

(14) FACILITY means a business or businesses engaged in solvent cleaning operations which are owned or operated by the same person or persons and are located on the same or contiguous parcels.

(15) FLEXOGRAPHIC PRINTING is the method in which the image area is raised relative to the non-image area and utilizes flexible rubber or other elastomeric plate and rapid drying liquid inks.

(16) FULL SERVICE SOLVENT PROVIDER is any person that provides both solvents and services to a solvent cleaning operation. Such services may include, but are not limited to, one or more of the following: filling or refilling solvent cleaning equipment with solvent, collection or pick up of customer’s solvent-related waste stream, or cleaning equipment sales or rental.

(17) GENERAL WORK SURFACE is an area of a medical device or pharmaceutical facility where solvent cleaning is performed on work surfaces including, but not limited to, tables, countertops, and laboratory

benches. General work surface shall not include items defined under janitorial cleaning.

(18) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: Ws = Weight of volatile compounds in gram s
Ww = Weight of water in grams
Wes = Weight of exempt compounds in grams
Vm = Volume of material in liters

(19) GRAPHIC ARTS are all gravure, letterpress, flexographic, and lithographic printing processes.

(20) GRAVURE PRINTING is an intaglio process in which the ink is carried in minute etched or engraved wells on a roll or cylinder. The excess ink is removed from the surface by a doctor blade.

(21) HIGH PRECISION OPTIC is an optical element used in an electro-optical device and is designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.

(22) HOT-LINE TOOL is a specialized tool used primarily on the transmission systems, sub-transmission systems and distribution systems for replacing and repairing circuit components or for other types of work with electrically energized circuits.

(23) INKJET PRINTING is a printing process in which images are formed by the precise placement of small (picoliter-sized) droplets of ink fired at high speeds from the nozzle(s) of computer-controlled printheads.

(24) JANITORIAL CLEANING is the cleaning of building or facility components including, but not limited to, floors, ceilings, walls, windows, doors, stairs, bathrooms, furnishings, and exterior surfaces of office equipment, and excludes the cleaning of work areas where manufacturing or repair activity is performed.

(25) LETTERPRESS PRINTING is the method in which the image area is raised relative to the non-image area and the ink is transferred to the paper directly from the image surface.

(26) LIQUID LEAK is the visible liquid solvent leak from the container at a rate of more than three (3) drops per minute, or a visible liquid mist.

(27) LIQUID-TIGHT FOOD CONTAINER is a paperboard container that can hold liquid food and food products without leaking even when it is held upside-down.

(28) LITHOGRAPHIC PRINTING is a plane-o-graphic method in which the image and non-image areas are on the same plane.

(29) MAINTENANCE CLEANING is a solvent cleaning operation or activity carried out to keep clean general work areas where manufacturing or repair activity is performed, to clean tools, machinery, molds, forms, jigs, and equipment. This definition does not include the cleaning of coatings, adhesives, or ink application equipment.

(30) MANUFACTURING PROCESS is the process of making goods or articles by hand or by machinery.

(31) MEDICAL DEVICE is an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article, including any component or accessory, that meets one of the following conditions:

(A) it is intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease; or

(B) it is intended to affect the structure or any function of the body; or

(C) it is defined in the National Formulary or the United States Pharmacopeia, or any supplement to them.

(32) NEWSPRINT is uncoated paper used mainly for printing newspapers, flyers, and other printed materials intended for mass distribution.

(33) NON-ABSORBENT CONTAINER is a container made of nonporous material, which does not allow the migration of the liquid solvent through it.

(34) NON-ATOMIZED SOLVENT FLOW is the use of a solvent in the form of a liquid stream without atomization to remove uncured adhesives, uncured inks, uncured coatings, and contaminants from an article.

(35) NON-LEAKING CONTAINER is a container without liquid leak.

(36) ON-PRESS COMPONENT is a part, component, or accessory of a press that is cleaned while still being physically attached to the press.

(37) ON-PRESS SCREEN CLEANING is a solvent cleaning activity carried out during press runs in screen printing operation to remove excess inks and contaminants from a screen that is still attached to the press.

(38) PACKAGING PRINTING is any lithographic, flexographic, gravure, or letterpress printing that results in identifying or beautifying paper, paperboard, or cardboard products to be used as containers, enclosures, wrappings, or boxes.

(39) PERSON is any firm, business establishment, association, partnership, corporation or individual, whether acting as principal, agent, employee, or other capacity including any governmental entity or charitable organization.

(40) PHARMACEUTICAL PRODUCT is a preparation or compound of medicinal drugs including, but not limited to, a prescription drug, analgesic, decongestant, antihistamine, cough suppressant, vitamin, mineral and herb, and is used by humans for consumption to enhance personal health.

(41) PHOTOCURABLE RESIN is a chemical material that solidifies upon exposure to light.

(42) PRINTING, in the graphic arts, is any operation that imparts color, design, alphabet, or numerals on a substrate.

(43) RADIATION-EFFECT COATING is a material that prevents radar detection.

(44) REMOTE RESERVOIR CLEANER is a cleaning device in which liquid solvent is pumped from a solvent container to a sink-like work area and the solvent from the sink-like area drains into an enclosed solvent container while parts are being cleaned.

(45) REMOVABLE PRESS COMPONENT is a part, component, or accessory of a press that is physically attached to the press but is disassembled and removed from the press prior to being cleaned. Rollers, blankets, metering rollers, dampening rollers, ink trays, printing plates, fountains, impression cylinders and plates shall not be considered as removable press components.

(46) REPAIR CLEANING is a solvent cleaning operation or activity carried out during a repair process.

(47) REPAIR PROCESS is the process of returning a damaged object or an object not operating properly to good condition.

(48) ROLLER WASH is a solvent used to remove ink from the rollers of a press.

(49) SCIENTIFIC INSTRUMENT is an instrument (including the components, assemblies, and subassemblies used in their manufacture) and associated accessories and reagents that is used for the detection, measurement, analysis, separation, synthesis, or sequencing of various compounds.

(50) SCREEN PRINTING is a process in which the printing ink passes through a web or a fabric to which a refined form of stencil has been applied. The stencil openings determine the form and dimensions of the imprint.

(51) SCREEN RECLAMATION is a solvent cleaning activity carried out in screen printing operation where the screen is completely cleaned for recycling or reuse of the screen for other production runs.

(52) SOLVENT is a VOC-containing liquid used to perform solvent cleaning.

(53) SOLVENT CLEANING is the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants which include, but are not limited to, dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas. Each distinct method of cleaning in a cleaning process, which consists of a series of cleaning methods, shall constitute a separate solvent cleaning operation.

(54) SOLVENT FLUSHING is the use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of the equipment by flushing solvent through the equipment.

(55) SOLVENT SUPPLIER is any person who sells and delivers or arranges to deliver solvent cleaning materials to a solvent cleaning operation subject to this regulation.

(55) STEREOLITHOGRAPHY is a type of printing process that employs a system using a light to solidify photocurable resins in a desired configuration in order to produce a 3-dimensional object.

(57) SPECIALTY FLEXOGRAPHIC PRINTING is flexographic printing on polyethylene or polypropylene food packaging, fertilizer bags, or liquid-tight food containers.

(58) STERILIZATION INDICATING INK is an ink that changes color to indicate that sterilization has occurred. Such ink is used to monitor the sterilization of medical instruments, autoclave efficiency, and the thermal processing of foods for prevention of spoilage.

(59) STRIPPING is the removal of cured coatings, cured inks, or cured adhesives.

(60) SURFACE PREPARATION is the removal of contaminants such as dust, soil, oil, grease, etc., prior to coating, adhesive, or ink applications.

(61) ULTRAVIOLET INK is an ink that dries by polymerization reaction induced by ultraviolet energy.

(62) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(63) WIPE CLEANING is the method of cleaning a surface by physically rubbing it with a material such as a rag, paper, sponge or a cotton swab moistened with a solvent.

(c) Requirements

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS* VOC g/l (lb/gal)	EFFECTIVE 1/1/2008* VOC g/l (lb/gal)	EFFECTIVE 1/1/2009 VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application			
(i) General	25 (0.21)		
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)		
(iii) Medical Devices & Pharmaceuticals	800 (6.7)		
(B) Repair and Maintenance Cleaning			
(i) General	25 (0.21)		
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)		
(iii) Medical Devices & Pharmaceuticals			
(A) Tools, Equipment, & Machinery	800 (6.7)		
(B) General Work Surfaces	600 (5.0)		

SOLVENT CLEANING ACTIVITY (cont.)	CURRENT LIMITS* VOC g/l (lb/gal)	EFFECTIVE 1/1/2008* VOC g/l (lb/gal)	EFFECTIVE 1/1/2009 VOC g/l (lb/gal)
(C) Cleaning of Coatings or Adhesives Application Equipment	25 (0.21)		
(D) Cleaning of Ink Application Equipment			
(i) General	25 (0.21)		
(ii) Flexographic Printing	25 (0.21)		
(iii) Gravure Printing			
(A) Publication	100 (0.83)		
(B) Packaging	25 (0.21)		
(iv) Lithographic (Offset) or Letter Press Printing			
(A) Roller Wash, Blanket Wash, & On-Press Components			
(I) Newsprint	100 (0.83)		
(II) Other Substrates	500 (4.2)	100 (0.83)	
(B) Removable Press Components	25 (0.21)		
(v) Screen Printing	500 (4.2)	100 (0.83)	
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	650 (5.4)	650 (5.4)	100 (0.83)
(vii) Specialty Flexographic Printing	100 (0.83)		
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)		

* The specified limits remain in effect unless revised limits are listed in subsequent columns.

(2) Cleaning Devices and Methods Requirements

A person shall not perform solvent cleaning unless one of the following cleaning devices or methods is used:

(A) Wipe cleaning;

(B) Closed containers or hand held spray bottles from which solvents are applied without a propellant-induced force;

(C) Cleaning equipment which has a solvent container that can be, and is closed during cleaning operations, except when depositing and

removing objects to be cleaned, and is closed during non-operation with the exception of maintenance and repair to the cleaning equipment itself;

(D) Cleaning device which is listed in the Office of Operations' manual "Alternative Devices for Rule 1171 Compliance" dated July 1, 1991. The Executive Officer shall periodically update the manual to identify any additional cleaning devices determined by the Executive Officer to result in equivalent or lower emissions;

(E) Remote reservoir cleaner used pursuant to the provisions of paragraph (c)(3);

(F) Non-atomized solvent flow method where the cleaning solvent is collected in a container or a collection system which is closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container; or

(G) Solvent flushing method where the cleaning solvent is discharged into a container which is closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container. The discharged solvent from the equipment must be collected into containers without atomizing into the open air. The solvent may be flushed through the system by air or hydraulic pressure, or by pumping.

(3) Remote Reservoir Cleaners

Any person owning or operating a remote reservoir cleaner shall comply with all of the following requirements in addition to the applicable VOC limits specified in paragraph (c)(1):

(A) Prevent solvent vapors from escaping from the solvent container by using such devices as a cover or a valve when the remote reservoir is not being used, cleaned, or repaired;

(B) Direct solvent flow in a manner that will prevent liquid solvent from splashing outside of the remote reservoir cleaner;

(C) Do not clean porous or absorbent materials, such as cloth, leather, wood, or rope; and

(D) Use only solvent containers free of all liquid leaks. Auxiliary equipment, such as pumps, pipelines, or flanges, shall not have any liquid leaks, visible tears, or cracks. Any liquid leak, visible tear, or crack detected shall be repaired within one (1) calendar day, or

the leaking section of the remote reservoir cold cleaner shall be drained of all solvent and shut down until it is replaced or repaired.

(4) Storage and Disposal

All VOC-containing solvents used in solvent cleaning operations shall be stored in non-absorbent, non-leaking containers which shall be kept closed at all times except when filling or emptying. It is recommended that cloth and paper moistened with VOC-containing solvents be stored in closed, non-absorbent, non-leaking containers.

(5) Control Equipment

In lieu of complying with the requirements in paragraphs (c)(1) or (c)(2), a person may comply by using a VOC emission collection and control system in association with the solvent cleaning operation provided:

(A) the emission control system shall collect at least 90 percent, by weight, of the emissions generated by the solvent cleaning operation and

(i) have a destruction efficiency of at least 95 percent, by weight, or

(ii) have an output of less than 50 parts per million (PPM) calculated as carbon with no dilution; or

(B) the emission control system meets the requirements of the applicable source specific rule of the District's Regulation XI. The collection system for cleaning in graphic arts and screen printing and cleaning of application equipment used for graphic arts materials and screen printing materials, shall collect at least 70 percent, by weight, of the emissions generated. This control system shall reduce emissions from the emission collection system by at least 95 percent.

(6) Recordkeeping Requirements

Records shall be maintained pursuant to Rule 109 for all applications subject to this rule, including those exempted under paragraphs (g)(3) through (g)(11), except facilities required to keep records of VOC used pursuant to any other Regulation XI rules.

(7) Effective September 1, 2008, any solvent supplier supplying solvent cleaning material for use by a solvent cleaning operation in the District, shall upon request by the Executive Officer, provide in a District-approved electronic format, the following information: product name of the supplied

solvent cleaning material; the name and address of the solvent cleaning operation that the product was supplied to; dates and quantities in which the product was supplied during the time period specified by the Executive Officer; and the VOC content of the product as supplied. The solvent supplier shall maintain records necessary to provide this required information for three (3) years.

(8) Effective September 1, 2008, the operator shall maintain at all times, and make available to the Executive officer upon request, the correct written dilution instructions for each solvent cleaning material if dilution is necessary to meet the applicable VOC limits in this rule. A solvent supplier providing solvent cleaning material for use by a solvent cleaning operation in the District shall supply to the operator, upon the operator's request, the correct written dilution instructions for each supplied solvent cleaning material.

(9) Any person who sells or offers for sale solvent cleaning materials for use in the District shall comply with the provisions of Rule 443.1 – Labeling of Materials Containing Organic Solvents.

(d) General Prohibitions

(1) A person shall not atomize any solvent unless it is vented to an air pollution control equipment, which meets the requirements of paragraph (c)(5).

(2) A person shall not specify or require any person to use solvent or equipment subject to the provisions of this rule that does not meet the requirements of this rule.

(3) A person shall not perform solvent cleaning activities or operations subject to the provisions of this rule with any material which contains Group II exempt compounds listed in Rule 102 except cyclic, branched, or linear, completely methylated siloxanes (VMS).

(4) Any person subject to the Airborne Toxic Control Measure for Emissions of Chlorinated Toxic Air Contaminants from Automotive Maintenance and Repair Activities - Title 17, California Code of Regulations, section 93111, shall comply with its provisions.

(5) No full service solvent provider shall aid, abet or assist a solvent cleaning operation to use a supplied solvent in a non-compliant manner.

(e) Test Methods

For the purpose of this rule, the following test methods shall be used. Other test methods determined to be equivalent after review by the staffs of the District, the Air Resources Board, and the United States Environmental Protection Agency, and approved in writing by the District Executive Officer may also be used.

(1) Determination of VOC Content

The VOC content of materials subject to the provisions of this rule shall be determined by the following methods:

(A) United States Environmental Protection Agency (USEPA) Reference Method 24 (Code of Federal Regulations, Title 40, Part 60, Appendix A). The exempt compounds' content shall be determined by the South Coast Air Quality Management District's (SCAQMD) Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOC) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with subdivision (c), only when manufacturers specify which individual compounds are used in the solvent formulation and identify the United States Environmental Protection Agency, California Air Resources Board, and the District approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Presence of VOC in Cleaning Materials

The presence of VOC in the headspace over the cleaning material shall be determined by SCAQMD Method 313 [Determination of Presence of Volatile Organic Compounds (VOC) in a Headspace] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

The presence of VOC in liquid cleaning materials shall be determined by SCAQMD Method 308 (Quantitation of Compounds by Gas Chromatography) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(3) Determination of Efficiency of Emission Control System

(A) The capture efficiency of an emission control system as specified in subparagraph (c)(5)(A) shall be determined by verifying the use of a Permanent Total Enclosure (PTE) and 100% capture efficiency as defined by USEPA Method 204, “Criteria for and Verification of a Permanent or Temporary Total Enclosure.” Alternatively, if a USEPA Method 204 defined PTE is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in the USEPA technical guidance document “Guidelines for Determining Capture Efficiency, January 9, 1995.” Individual capture efficiency test runs subject to the USEPA technical guidelines shall be determined by:

(i) The Temporary Total Enclosure (TTE) approach of USEPA Methods 204 through 204F, June 4, 1997; or

(ii) The District “Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency,” May 1995.

(B) The control equipment efficiency of an emission control system as specified in subparagraph (c)(5)(A), on a mass emissions basis, and the VOC concentrations in the exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon), or SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled

Combustion Sources), as applicable. USEPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(4) Multiple Test Methods

When more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

(5) All test methods referenced in this section shall be the most recently approved version.

(f) Rule 442 Applicability

Any solvent, solvent cleaning activity, solvent cleaning unit operation, or person, which is exempt from all or a portion of this rule except paragraph (c)(6), shall be subject to the applicable requirements of the applicable Regulation XI source specific rule or Rule 442 - Usage of Solvent.

(g) Exemptions

(1) The provisions of this rule, except (c)(1), Solvent Requirements, shall not apply to cleaning operations using a solvent containing no more than 25 grams of VOC per liter of material, provided that, if the Executive Officer determines that a person has violated any provision of paragraph (c)(1), Solvent Requirements, then for a period of three years following such violation, paragraph (c)(6), Recordkeeping Requirements, shall apply to the facility at which the violation occurred.

(2) The following solvent cleaning operations or activities are not subject to any provision of this rule:

(A) Cleaning carried out in batch loaded cold cleaners, vapor degreasers, conveyorized degreasers, or motion picture film cleaning equipment.

(B) Cleaning operations subject to Rule 1102 – Petroleum Solvent Dry Cleaners, and Rule 1421 – Control of Perchloroethylene Emissions from Dry Cleaning Operations.

(C) Cleaning operations subject to Rule 1164 – Semiconductor Manufacturing.

(D) Cleaning operations subject to Rule 1124 – Aerospace Assembly and Component Manufacturing Operations, except coating application equipment cleaning, and storage and disposal of VOC-containing materials used in solvent cleaning operations.

(E) Cleaning operations subject to Rule 1141 – Control of Volatile Organic Compound Emissions from Resin Manufacturing, and Rule 1141.1 – Coatings and Ink Manufacturing.

(F) Janitorial cleaning, including graffiti removal.

(G) Stripping of cured coatings, cured ink, or cured adhesives.

(3) Provisions of paragraph (c)(1) shall not apply to the following applications:

(A) Cleaning of solar cells, laser hardware, scientific instruments, and high-precision optics.

(B) Cleaning conducted with: performance laboratory tests on coatings, adhesives, or inks; research and development programs; and laboratory tests in quality assurance laboratories.

(C) Cleaning of motor vehicles on application lines subject to Rule 1115 - Motor Vehicle Assembly Line Coating Operations.

(D) Cleaning of paper-based gaskets, and clutch assemblies where rubber is bonded to metal by means of an adhesive.

(E) Cleaning of cotton swabs to remove cottonseed oil before cleaning of high-precision optics.

(F) Medical device and pharmaceutical facilities using up to 1.5 gallons per day of solvents.

(G) Until December 31, 2008, the cleaning of photocurable resins from stereolithography equipment and models.

(H) Until January 1, 2009, the cleaning of ultraviolet or electron beam lamps and reflectors used for the curing of ultraviolet or electron beam ink or coatings.

(I) Cleaning of adhesive application equipment used for thin metal laminating operations provided the clean-up solvent used contains no more than 950 grams of VOC per liter.

(J) Cleaning of electronic or electrical cables provided the clean-up solvent used contains no more than 400 grams of VOC per liter.

(K) Touch up cleaning performed on printed circuit boards where surface mounted devices have already been attached provided that

the solvent used contains no more than 800 grams of VOC per liter.

(4) Cleaning with aerosol products shall not be subject to the provisions of paragraph (c)(1) and paragraph (d)(1) if 160 fluid ounces or less of non-compliant aerosol products are used per day, per facility. The use of such product shall comply with CARB regulations.

(5) The provisions of subparagraph (c)(1)(C) shall not apply to the following applications:

(A) Cleaning of coating and adhesive application processes utilized to manufacture transdermal drug delivery product using less than 3 gallons per day of ethyl acetate averaged over a 30 calendar day period.

(B) Cleaning of application equipment used to apply coatings on satellites and radiation effect coatings.

(C) The cleaning of application equipment used to apply solvent-borne fluoropolymer coatings until December 31, 2008, provided the clean-up solvent used for such cleaning contains no more than 900 grams of VOC per liter.

(6) The provisions of subparagraph (c)(1)(D) shall not apply to persons or facilities using less than 1.5 gallons per day of solvents to clean sterilization indicating ink application equipment.

(7) Until December 31, 2007, the provisions of subparagraph (c)(1)(D) shall not apply to the cleaning of metering rollers, dampening rollers and printing plates, provided the clean-up solvent used for such cleaning contains no more than 800 grams of VOC per liter.

(8) Until December 31, 2007, the provisions of (c)(1)(D)(iv)(A)(II) shall not apply to automatic roller and blanket cleaning systems, provided the solvent used for such cleaning contains no more than 650 grams of VOC per liter.

(9) Until January 1, 2009, the provisions of (c)(1)(D)(v) shall not apply to on-press cleaning of screens and automatic cleaning equipment used in screen reclamation provided the clean up solvent used for such cleaning activities contains no more than 500 grams of VOC per liter.

(10) Until January 1, 2009, the provisions of (c)(1)(D)(vi) shall not apply to the cleaning of metering rollers, dampening rollers and printing plates in

UV/EB ink application equipment, provided the clean-up solvent used for such cleaning contains no more than 800 grams of VOC per liter.

(11) Provisions of paragraph (d)(1) shall not apply to the following:

(A) Cleaning of the nozzle tips of automated spray equipment systems, except for robotic systems.

(B) Cleaning with spray bottles or containers described in subparagraph (c)(2)(B).

(C) Printing operations where the roller or blanket wash is applied automatically.

(12) The provisions of this rule shall not apply to cleaning operations in printing pre-press or graphic arts pre-press areas, including the cleaning of film processors, color scanners, plate processors, film cleaning, and plate cleaning.

(Adopted July 7, 1989)(Amended December 7, 1990)(Amended May 13, 1994)
(Amended December 6, 2002)(Amended June 1, 2007)(Amended February 6, 2009)

RULE 1173 CONTROL OF VOLATILE ORGANIC COMPOUND LEAKS AND RELEASES FROM COMPONENTS AT PETROLEUM FACILITIES AND CHEMICAL PLANTS

(a) Purpose

This rule is intended to control volatile organic compound (VOC) leaks from components and releases from atmospheric process pressure relief devices (PRDs).

(b) Applicability

This rule applies to components at refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants and pipeline transfer stations.

(c) Definitions:

For the purpose of this rule the following definitions shall apply:

(1) BACKGROUND is the ambient concentration of total organic compounds (TOC) in the air at least one (1) meter upwind of the component to be inspected, determined according to the test method in paragraph (j)(1).

(2) CHEMICAL PLANT is any facility engaged in producing chemicals, and/or manufacturing products by chemical processes. Any facility or operation that has 282 as the first three digits in its Standard Industrial Classification Code as defined in the Standard Industrial Classification Manual is included in this definition.

(3) COMMERCIAL NATURAL GAS is a mixture of hydrocarbons, with at least 80 percent methane by volume and less than 10 percent by weight VOC, determined according to test methods specified in paragraph (j)(2).

(4) COMPONENT is any valve, fitting, pump, compressor, pressure relief device, diaphragm, hatch, sight-glass, and meter in VOC service. They are further classified as:

(A) MAJOR COMPONENT is any 4-inch or larger valve, any 5-hp or larger pump, any compressor, and any 4-inch or larger pressure relief device.

(B) MINOR COMPONENT is any component which is not a major component.

(5) COMPRESSOR is a device used to compress gases and/or vapors by the addition of energy, and includes all associated components used for connecting and sealing purposes.

(6) FACILITY is a refinery, chemical plant, lubricating oil and grease re-refiner, marine terminal, oil and gas production field, natural gas processing plant, or pipeline transfer station.

(7) FIELD GAS means feed stock gas entering the natural gas processing plant.

(8) FITTING is a device used to attach or connect pipes or piping details, including but not limited to flanges and threaded connections.

(9) HATCH is any covered opening system that provides access to a tank, container or vessel.

(10) HEAVY LIQUID is any liquid with 10 percent or less VOC by volume evaporated at 150°C (302°F), determined according to test methods specified in paragraph (j)(2) or (j)(3).

(11) INACCESSIBLE COMPONENT is any component located over five meters above ground when access is required from the ground; or any component located over two meters away from a platform when access is required from the platform; or any component which would require the elevation of a monitoring personnel higher than two meters above permanent support surfaces.

(12) INSPECTION is a survey of components, using an appropriate analyzer, according to the test method in paragraph (j)(1), for the purpose of determining compliance with this rule, and may be either of the following:

(A) OPERATOR INSPECTION is a survey of components by the operator or their contractor.

(B) DISTRICT INSPECTION is a survey of components by District personnel or their representatives.

(13) LEAK is the dripping of either heavy or light liquid; or the detection of a concentration of TOC above background, determined according to the test method in paragraph (j)(1).

(14) LIGHT LIQUID is any liquid with more than 10 percent VOC by volume evaporated at 150°C (302°F), determined according to the test method specified in subparagraph (j)(2).

(15) LUBRICATING OIL AND GREASE RE-REFINER is a facility engaged in the blending, compounding, and re-refining of lubricating oils and greases from purchased mineral, animal, and vegetable materials, as defined in Standard Industrial Classification Code 2992. Petroleum refineries engaged in the production of lubricating oils and greases are classified in Standard Industrial Classification Code 2911 and therefore are not included in this definition.

(16) MARINE TERMINAL is a facility, equipment or structure constructed to handle the loading or unloading of organic liquid into or out of marine tank vessels, defined as in Standard Industrial Classification Codes 4226 and 5171.

(17) NATURAL GAS PROCESSING PLANT is a facility engaged in the separation of natural gas liquids from field gas and/or fractionation of the liquids into natural gas products, such as ethane, propane, butane, and natural gasoline. Excluded from the definition are compressor stations, dehydration units, sweetening units, field treatment, underground storage facilities, liquefied natural gas units, and field gas gathering systems unless these facilities are located at a natural gas processing plant.

(18) OIL AND GAS PRODUCTION FIELD is a facility on which crude petroleum and natural gas production and handling are conducted, as defined in the Standard Industrial Classification Manual as Industry No. 1311, Crude Petroleum and Natural Gas.

(19) PIPELINE TRANSFER STATION is a facility which handles the transfer and storage of petroleum products or crude petroleum in pipelines.

(20) PLATFORM is any raised, permanent, horizontal surface for the purpose of gaining access to components.

(21) PRESSURE RELIEF DEVICE (PRD) is a pressure relief valve or a rupture disc.

(22) PRESSURE RELIEF VALVE (PRV) is a device which is automatically actuated by upstream static pressure to the atmosphere (atmospheric PRV) or to a control device, and used for safety or emergency purposes.

(23) PROCESS PRD is a PRD located on process equipment other than storage tanks or pipelines used to transport material.

(24) PUMP is a device used to transport fluids by the addition of energy, and includes all associated components used for connecting or sealing purposes.

(25) REFINERY is a facility that processes petroleum, as defined in the Standard Industrial Classification Manual as Industry No. 2911, Petroleum Refining.

(26) RELEASE is any VOC emission to the atmosphere from an atmospheric PRD caused by an increase in upstream pressure. A leak caused by improper reseating of the PRD is not a release.

(27) REPAIR is corrective action for the purpose of eliminating or reducing leaks that may involve the temporary removal or taking out of service of a component or PRV.

(28) RUPTURE DISC is a diaphragm held between flanges for the purpose of isolating VOC from the atmosphere or from a downstream pressure relief valve.

(29) TAMPER-PROOF means that all the data collected shall be encrypted such that it cannot be modified.

(30) TELLTALE INDICATOR is a device installed in conjunction with a PRD, indicating whether a release has occurred.

(31) TOTAL ORGANIC COMPOUNDS (TOC) is the concentration of gaseous organic compounds determined according to the test method in paragraph (j)(1).

(32) TURNAROUND is a scheduled shutdown of a process unit for maintenance and repair work.

(33) VALVE is a device that regulates or isolates the fluid flow in a pipe, tube, or conduit by means of an external actuator.

(34) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(d) Leak Standards

(1) The operator of a facility subject to this rule shall be in violation of this rule if District inspection detects any:

(A) Light liquid leak of more than three drops per minute;

(B) Leak greater than 50,000 ppm from a component in light liquid/gas/vapor service;

(C) Leak greater than 500 ppm from a component in heavy liquid service; or

(D) Leak within any continuous 24-hour period and numbering in excess of the Leak Thresholds for that component listed below in Table 1, if it is:

(i) A leak from a component in light liquid /gas/vapor service, greater than 10,000 ppm; or

(ii) A leak from an atmospheric PRD, greater than 200 ppm; or

(iii) A leak from a pump in heavy liquid service, greater than 100 ppm.

TABLE 1. LEAK THRESHOLDS

Component Type	Max. No. of Leaks for 200 or less components inspected	Max No. of Leaks for > 200 components inspected
Valves	1	0.5% of number inspected
Pumps	2	1% of number inspected
Compressors	1	1
Atmospheric PRDs	1	1
Threaded Pipe Connectors	1	0.5% of number inspected
Other Components	1	1

The maximum number of leaks in Table 1 shall be rounded upwards to the nearest integer, where required.

(E) Open-ended lines and valves located at the end of lines that are not sealed with a blind flange, plug, cap, or a second closed valve at all times, except during operations requiring process fluid flow through the open-ended line.

(2) For the purpose of determining an oil and gas production facility's compliance with the leak standards specified in subparagraphs (d)(1)(B), (d)(1)(C), and (d)(1)(D), the operator of the facility may request a written approval from the Executive Officer to adjust a leak measurement to exclude methane and ethane, provided:

(A) The operator submits a plan identifying the components to be included under paragraph (d)(2);

(B) The operator demonstrates the methane and ethane content of the line product is 50 percent or more by volume, as determined by a District approved laboratory, according to the test method in paragraph (j)(2);

(C) The demonstration is based on a sampling and analysis of a representative sample obtained on a semiannual basis in accordance with the schedule and sample size approved by the Executive Officer; and

(D) A copy of the analysis results with laboratory analysis is provided upon request by the Executive Officer.

(E) The operator of a Title V facility shall submit an application for permit modification to incorporate the approval under paragraph (d)(2) in the Title V permit.

(e) Identification Requirements

The operator shall:

(1) Physically identify clearly and visibly all major components in light liquid/gas/vapor service and pumps in heavy liquid service for inspection, repair, replacement, and recordkeeping purposes.

(2) Clearly identify all major components in heavy liquid service other than pumps subject to paragraph (e)(1), and minor components, in Piping and Instrumentation (P&I) flow diagrams, and/or group them together functionally for inspection, repair, replacement, and recordkeeping purposes.

(3) Submit the information required to identify components in heavy liquid service, as required by paragraphs (e)(1) and (e)(2), for approval by the Executive Officer on or before September 1, 2003.

(4) Any change(s) in major component identification shall require prior written approval from the Executive Officer.

(f) Operator Inspection Requirements

(1) The operator shall:

(A) Audio-visually inspect all accessible pumps, compressors, and atmospheric PRDs once during every eight-hour operating period, except for unmanned oil and gas production fields and unmanned pipeline transfer stations.

(B) Inspect all accessible components in light liquid/gas/vapor service and pumps in heavy liquid service quarterly, with pumps in heavy liquid service beginning July 1, 2003.

(C) Inspect all inaccessible components in light liquid/gas/vapor service annually.

(D) At any refinery with more than 25,000 components:

(i) At the time of operator inspection, simultaneously record in an electronic format all component inspections beginning January 1, 2004, and

(ii) Operate and maintain the electronic recording instrument according to manufacturer's specifications.

(E) Inspect an atmospheric PRD within one calendar day and reinspect it within 14 calendar days after every release.

(F) Inspect all repaired or replaced components within 30 days of the repair or replacement.

(2) The operator may apply for written approval from the Executive Officer to change the inspection frequency for each type of accessible component other than PRD in light liquid/gas/vapor service at a facility, except pumps and compressors, as required in subparagraph (f)(1)(B) from quarterly to annually, provided that all components at that facility have been successfully operated and maintained for five consecutive quarters with no liquid leaks of more than three drops per minute, and with leaks greater than 10,000 ppm not exceeding the Leak Thresholds, by component type, listed in Table 1.

(3) The operator may apply for written approval from the Executive Officer to change the inspection frequency for all accessible atmospheric PRDs in light liquid/gas/vapor at a facility, as required in subparagraph (f)(1)(B), from quarterly to annually, provided that all atmospheric PRDs at that facility have been successfully operated and maintained for five consecutive quarters with no liquid leaks of more than three drops per minute and with leaks greater than 200 ppm not exceeding the Leak Thresholds listed in Table 1.

(4) The operator may apply for written approval from the Executive Officer to change the inspection frequency for pumps in heavy liquid service at a facility, as required in subparagraph (f)(1)(B), from quarterly to annually, provided that all pumps in heavy liquid service at that facility have been successfully operated and maintained for five consecutive quarters, with leaks greater than 100 ppm not exceeding the Leak Thresholds listed in Table 1 for pumps.

(5) The operator shall submit documentation prior to the change in inspection frequency, as per paragraphs (f)(2), (f)(3) and (f)(4), for written approval from the Executive Officer.

(6) The operator shall revert to a quarterly inspection frequency for a component type, should the annual operator inspection or District inspection show any leaks in excess of the thresholds applicable to the component type listed below:

(A) Light liquid leak of more than three drops per minute, or

(B) Leaks exceeding the maximum number of leaks, by component type, listed in Table 1 for:

(i) Components in light liquid/gas/vapor service, greater than 10,000 ppm,

(ii) Pumps in heavy liquid service, greater than 100 ppm,

(iii) Atmospheric PRDs, greater than 200 ppm.

(g) Maintenance Requirements

The operator shall:

(1) Repair, replace or remove a leaking component as soon as practicable but no later than the time period specified in Table 2, Repair Periods. For each calendar quarter, the operator may extend the repair period, as specified in Table 2, for a total number of leaking components, not to exceed 0.05 percent of the number of components inspected during the previous quarter, by type, rounded upward to the nearest integer where required.

TABLE 2. REPAIR PERIODS

Type of Leak	Time Period	Extended Repair Period
Light liquid/gas/vapor component leaks greater than 500 ppm but no more than 10,000 ppm	7 Calendar Days	7 Calendar Days
Heavy liquid component leaks greater than 100 ppm but no more than 500 ppm	7 Calendar Days	7 Calendar Days
Heavy liquid leak greater than 3 drops per minute and greater than 100 ppm but no more than 500 ppm	7 Calendar Days	
Any leak greater than 10,000 ppm but no more than 25,000 ppm	2 Calendar Days	3 Calendar Days

Type of Leak	Time Period	Extended Repair Period
Atmospheric PRD leaks greater than 200 ppm but no more than 25,000 ppm	2 Calendar Days	3 Calendar Days
Any leak greater than 25,000 ppm	1 Calendar Day	
Heavy liquid component leaks greater than 500 ppm	1 Calendar Day	
Light liquid leaks greater than 3 drops per minute	1 Calendar Day	

(2) Replace a component or parts thereof with Best Available Control or Retrofit Technology (BACT or BARCT), or vent it to an air pollution control device approved by the Executive Officer, after it has been subjected to five repair actions within a continuous twelve month period for:

(A) A light liquid leak of greater than three drops per minute,

(B) A leak greater than 10,000 ppm or

(C) A leak greater than 200 ppm for an atmospheric PRD.

(3) The reporting provisions of Rule 430 shall not be applicable to components being repaired or replaced under the provisions of this rule, except compressors.

(h) Atmospheric Process PRD Requirements

(1) The operator of a refinery shall continuously monitor atmospheric PRDs located on process equipment by installing tamper-proof electronic valve monitoring devices capable of recording the duration of each release and quantifying the amount of the compounds released according to the following schedule:

(A) For a refinery with less than 50 atmospheric process PRDs:

(i) Install monitoring devices on 50 percent of all atmospheric process PRDs by January 1, 2009; and

(ii) Install monitoring devices on the remaining atmospheric process PRDs by July 1, 2009.

(B) For a refinery with more than 50 atmospheric process PRDs:

(i) Install monitoring devices on 20 percent of all atmospheric process PRDs by January 1, 2009,

(ii) Install monitoring devices on 40 percent of all atmospheric process PRDs by July 1, 2009; and

(iii) Install monitoring devices on the remaining atmospheric process PRDs by July 1, 2010.

(C) In conjunction with the requirements of subparagraphs (h)(1)(A) and (h)(1)(B), the operator of a refinery shall continue to monitor all atmospheric process PRDs by use of electronic process control instrumentation that allows for real time continuous parameter monitoring or telltale indicators until such time that the operator of a refinery has demonstrated compliance with subparagraphs (h)(1)(A) and (h)(1)(B).

(D) Notwithstanding the requirements of subparagraphs (h)(1)(A) and (h)(1)(B), the operator of a refinery may delay the installation of the tamper-proof electronic valve monitoring devices to no later than the next scheduled turnaround following June 1, 2007 for that process unit PRD(s), provided that the operator demonstrates to the satisfaction of the Executive Officer that the installation at an earlier date is not feasible or constitutes a safety hazard.

(E) Notwithstanding the requirements of subparagraphs (h)(1)(A) and (h)(1)(B), for any atmospheric process PRD, the operator of a refinery may use tamper-proof electronic valve monitoring devices in combination with continuous parameter monitoring or tamper-proof electronic valve monitoring devices and telltale indicators that in combination can record the duration of each release and quantify the amount of the compounds released, provided that the operator demonstrates on or before the compliance dates in subparagraphs (h)(1)(A) and (h)(1)(B) to the satisfaction of the Executive Officer that the combination of tamper-proof electronic valve monitoring devices, continuous parameter monitoring or telltale indicators represents the actual process conditions at the location of the process PRD release to the atmosphere.

(F) The requirements of subparagraphs (h)(1)(A) and (h)(1)(B) do not apply to atmospheric process PRDs that will be connected in such a manner as to direct all gases and vapors that can be released by an atmospheric process PRD to a VOC vapor recovery or control system no later than the next scheduled turnaround after

December 31, 2008, for that process equipment or unit associated with those atmospheric process PRD(s). The operator of a refinery must submit a revised compliance plan no later than December 31, 2008, that identifies the applicable atmospheric process PRD(s) and the schedule for connecting the atmospheric process PRD(s) to a VOC recovery or control system. Until such time that the atmospheric process PRD(s) are connected to a VOC vapor recovery or control system, the operator shall monitor all atmospheric process PRDs by use of electronic process control instrumentation that allows for real time continuous parameter monitoring or telltale indicators.

(G) The requirements of subparagraphs (h)(1)(A) through (h)(1)(F) do not apply to atmospheric process PRDs in liquid service that release to drains and are regulated under Rule 1176, provided that the operator demonstrates to the satisfaction of the Executive Officer that all released material meets the definition of heavy liquid.

(2) The operator of a chemical plant shall monitor atmospheric process PRDs located on process equipment by one of the following options:

(A) Install tamper-proof electronic valve monitoring devices capable of recording the duration of each release and quantifying the amount of compounds released on twenty percent of the atmospheric process PRD inventory. The operator shall install the electronic valve monitoring devices during the first turnaround after December 31, 2003; or

(B) Use of electronic process control instrumentation that allows for real time continuous parameter monitoring, starting July 1, 2004, and telltale indicators for the atmospheric process PRDs where parameter monitoring is not feasible. The telltale indicators shall be installed no later than December 31, 2004.

(3) The operator of a lubricating oil and grease re-refiner or a marine terminal shall monitor atmospheric process PRDs by use of electronic process control instrumentation that allows for real time continuous parameter monitoring, starting January 1, 2009, and telltale indicators for the atmospheric process PRDs where parameter monitoring is not feasible. The telltale indicators shall be installed no later than December 31, 2007.

(4) By December 31, 2007, the operator shall submit to the District a compliance plan or a revised compliance plan, containing the inventory of atmospheric process PRDs by size, set pressure and location, and indicate the option(s) chosen to comply with paragraphs (h)(1), (h)(2) and (h)(3). If applicable, the operator shall indicate the process parameter selected for continuous monitoring and the justification for such selection.

(5) Following any release from an atmospheric process PRD in excess of 500 pounds of VOC in a continuous 24-hour period, the operator shall conduct a failure analysis and implement corrective actions within 30 days to prevent the reoccurrence of similar releases.

(6) At a refinery with a crude oil throughput greater than 20,000 barrels per day, the operator shall, as practicable but no later than the first turnaround following the requirement to connect becomes effective, connect all atmospheric process PRDs serving that equipment to a vapor recovery or control system following:

(A) a second release in excess of 500 pounds of VOC in a continuous 24-hour period, within any five year period from any atmospheric process PRD serving the same piece or pieces of equipment or

(B) any release in excess of 2,000 pounds of VOC in a continuous 24-hour period, from any atmospheric process PRD serving the same piece or pieces of equipment.

(7) In lieu of complying with paragraph (h)(6), an operator may elect to pay a mitigation fee of $350,000 to the District for any release exceeding the thresholds in paragraph (h)(6) and any subsequent release. Within 90 days of the release, the operator shall notify the Executive Officer, in writing, of the election to pay a mitigation fee and submit payment as requested by the Executive Officer.

(i) Recordkeeping and Reporting Requirements

(1) The operator shall record all leaks, repairs and reinspections, as required in subdivision (f), and submit those records as quarterly or annual inspection reports to the Executive Officer no later than 30 days after the end of each calendar quarter or no later than 60 days after the end of the calendar year, respectively. Upon request by the Executive Officer, the operator shall include in the report the reason for extending the repair period for any component, as allowed in paragraph (g)(1). The operator

shall submit the records in an electronic format approved by the Executive Officer and they shall be certified in writing by the facility official responsible for the inspection and repair program.

(2) The operator shall include in all records of operator inspection and repair, at a minimum, the component identification and type, service, location, leak rate and date and time of inspection. The operator shall maintain these records at the facility for a period of at least two (2) years or five (5) years for a Title V facility and made available to the Executive Officer on request.

(3) The operator of a refinery, chemical plant, lubricating oil and grease re-refiner, or marine terminal shall:

(A) Notify the Executive Officer, by telephone or any other District approved method, of any atmospheric process PRD release in excess of the reportable quantity limits as stipulated in 40 CFR, Part 117, Part 302 and Part 355, including any release in excess of 100 pounds of VOC, within one hour of such occurrence or within one hour of the time said person knew or reasonably should have known of its occurrence;

(B) Submit a written report to the Executive Officer within 30 days following notification of an atmospheric process PRD release, providing the following information:

(i) PRD type, size and location.

(ii) Date, time and duration of the PRD release event.

(iii) Types of VOC released and individual amounts, in pounds, including supporting calculations.

(iv) Cause of the atmospheric process PRD release event.

(v) Corrective actions taken to prevent a subsequent PRD release.

(C) Submit quarterly reports for all monitored atmospheric process PRDs to comply with paragraphs (h)(1), (h)(2) and (h)(3) in an electronic format approved by the Executive Officer, indicating the parameter(s) monitored as a function of time, no later than 30 days after the end of each calendar quarter.

(D) Keep records of the process parameter(s) monitored for a period of five years, where elected to comply with paragraphs (h)(1), (h)(2)

and (h)(3) and make them available to the Executive Officer upon request.

(j) Test Methods

(1) Measurements of leak concentrations shall be conducted according to the United States Environmental Protection Agency (U.S. EPA) Reference Method 21 using an appropriate analyzer calibrated with methane. The analyzer shall be calibrated before inspection each day.

(2) The VOC content shall be determined according to ASTM Method D 1945 for gases, SCAQMD Method 304-91 for liquids. The percent VOC of a liquid evaporated at 150°C (302°F) shall be determined according to ASTM Method D 86.

(3) The flash point of heavy liquids shall be determined according to ASTM Method D 93.

(4) Equivalent Test Methods

A person may use other method to determine compliance with this rule provided it is demonstrated to be equivalent and approved in writing by the Executive Officers of the District, the California Air Resources Board (CARB), and the Regional Administrator of the U.S. EPA, Region IX, or their designees.

(k) Other Rules and Regulation Applicability

In case of conflict between the provisions of this rule and any other rule, the provisions of the rule which more specifically applies to the subject shall prevail.

(l) Exemptions

(1) The provisions of this rule shall not apply to the following cases, where the person seeking the exemption shall supply the proof of the applicable criteria to the satisfaction of the Executive Officer:

(A) Components which present a safety hazard for inspection as documented and established in a safety manual or policy, previously, or with the prior written approval of the Executive Officer except that the operator shall monitor these components for leaks when it is safe to do so. Upon detection of a leak, the operator shall repair or replace the component(s) as soon as the repairs or replacement can be carried out safely.

(B) Components being repaired or replaced within the specified repair or replacement period, as given in Table 2.

(C) Components exclusively handling commercial natural gas.

(D) Components exclusively handling fluids with a VOC content of ten percent by weight or less, determined according to test methods specified in paragraph (j)(2).

(E) Components incorporated in lines, while operating under negative pressures.

(F) Components totally contained or enclosed such that there are no VOC emissions into the atmosphere.

(G) Components buried below ground.

(H) Pressure vacuum valves on storage tanks.

(I) Storage tank hatches subject to Rule 1178.

(2) The provisions of subdivision (h) and paragraphs (i)(2) and (i)(3) shall not apply to PRVs installed for protection from overpressure due to variation in ambient temperature provided that they are vented to drains or back into the pipeline. A person seeking an exemption under this paragraph shall supply proof of the applicable criteria to the satisfaction, upon request, of the Executive Officer.

(3) The provisions of Rules 466, 466.1, and 467 shall not apply to facilities subject to this rule.

(4) The provisions of paragraph (e)(1) and subdivision (f) shall not apply to components handling liquids with a flash point greater than 121°C (250°F), as determined according to the test method specified in paragraph (j)(3).

(5) Atmospheric PRD releases demonstrated to the satisfaction of the Executive Officer that result from natural disasters, acts of war or terrorism, or external power curtailment beyond the refinery's control, excluding power curtailment due to an interruptible service agreement, shall not be subject to the provisions of paragraphs (h) (6) and (h)(7).

(6) Except for the requirements of subdivision (e), the requirements of this rule shall not become effective as to lubricating oil and grease re-refiners and to marine terminals until December 31, 2007. Lubricating oil and grease re-refiners and marine terminals shall comply with the requirements of subdivision (e) no later than September 30, 2007.

5/13/91

(Adopted October 5, 1990)

RULE 1174. CONTROL OF VOLATILE ORGANIC COMPOUND EMISSIONS FROM THE IGNITION OF BARBECUE CHARCOAL

(a) Applicability

This rule applies to manufacturers, distributors, and/or retailers of materials and/or methods used to ignite barbecue charcoal.

(b) Definitions

(1) BARBECUE CHARCOAL is any solid, carbon-based material used as a fuel source for outdoor direct-flame cooking.

(2) CHIMNEY is a metal cylinder with a bottom grate and vent at the bottom to allow the flow of air. Paper tinder is placed on the grate and charcoal briquets are placed on top of the tinder.

(3) ELECTRIC PROBE is any electric device designed and specifically marketed for the purpose of igniting charcoal.

(4) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

(c) Requirements

(1) A person shall not supply, sell, or offer for sale any material and/or methods used to ignite barbecue charcoal within the District, unless it has been demonstrated to the satisfaction of the Executive Officer, in accordance with District Test Protocol, that the VOC emissions resulting from the ignition of the barbecue charcoal are less than or equal to 0.02 pound of VOC per start.

(2) Manufacturers, distributors, and/or retailers of materials or methods subject to provisions of subparagraph (c)(1) shall provide certification of the test performed, including product formulation and test results to the Executive Officer for approval.

(3) Manufacturers, distributors, and/or retailers supplying, selling, or offering for sale within the jurisdiction of the District any barbecue charcoal ignition material or method not listed in (e), which has been approved by the Executive Officer, shall clearly and correctly indicate on the container

that the material or method complies with District Rule 1174, and shall describe on the container the proper procedures for use or application of the method or material so that it complies with Rule 1174. This requirement may be satisfied by affixing a sticker or label to the container which sets forth this information.

(4) Reformulation of a barbecue charcoal ignition material shall require recertification.

(d) Compliance Schedule

The provisions of this rule shall become effective January 1, 1992.

(e) Exemptions

The following methods/materials used to ignite barbecue charcoal will not require certification:

(1) Electric starter (electric probe);

(2) Chimneys using paper tinder;

(3) Natural gas; and

(4) Propane

(Adopted November 3, 1989)(Amended January 5, 1990)
(Amended May 13, 1994)(Amended September 7, 2007)
(Amended November 5, 2010)

RULE 1175. CONTROL OF EMISSIONS FROM THE MANUFACTURE OF POLYMERIC CELLULAR (FOAM) PRODUCTS

(a) Applicability

This rule shall apply to polymeric cellular products manufacturing operations including but not limited to expandable polystyrene, extruded polystyrene, polyurethane, isocyanurate and phenolic foam operations. All steps of the manufacturing operation and the storage of the final product for a maximum of 48 hours are subject to the requirements of this rule.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) APPROVED EMISSION CONTROL SYSTEM means any system used to reduce manufacturing and storage emissions and consists of an emission collection system and a control device, which are approved, in writing, by the Executive Officer, that has been demonstrated to perform and operate according to the following provisions:

(A) The emission collection system shall collect at least 90 percent by weight of the manufacturing emissions; and

(B) The emission collection system shall collect at least 90 percent by weight of the storage emissions; and

(C) The control device shall reduce emissions from the emission collection system by at least 95 percent, by weight.

(2) BLOWING AGENT means a liquid, gaseous or solid material that facilitates the formation of a cellular product from raw polymeric material.

(3) CERTIFICATE OF ANALYSIS is a written document that cites the range of pentanes in expandable polystyrene bead, expressed as the percentage by weight of a manufactured bead-lot, prior to shipment from the manufacturer. It also contains the name of the manufacturer, a bead-lot number, and grade and type identifiers, along with a signature of an officer or an officer's designee of the bead-lot manufacturer.

(4) CHLOROFLUOROCARBON (CFC) is any chlorinated fluorinated compound of carbon.

(5) EXEMPT COMPOUNDS (see Rule 102 - Definition of Terms)

(6) EXPANDABLE POLYSTYRENE (EPS) MOLDING OPERATIONS consist of a series of processes, where polystyrene beads and blowing agent are expanded by exposure to steam or any other expansion agent and processed through cup, block or shape molding into low-density, closed cell, cellular products. EPS products include but are not limited to drinking cups, insulation board, packaging material, and ice chests.

(7) EXTRUDED POLYSTYRENE (XPS) FOAM OPERATIONS consist of a series of processes, where a blowing agent is injected into molten polystyrene and upon exit of the extrusion die the blowing agent vaporizes thus expanding the molten resin into foam, where it expands in both thickness and width, and includes directly associated processes that incorporate reprocessed material into XPS products. XPS products include but are not limited to food containers and insulation foams used in the construction of structures for both residential and commercial buildings, such as under concrete slabs, roofing, decks, steel and wood framed wall sheathing.

(8) LOW-PENTANE BEAD is an expandable polystyrene bead containing pentane as a blowing agent with an upper limit less than 4.0 percent by weight, prior to shipment, as certified upon delivery by an accompanying bead lot manufacturer's Certificate of Analysis.

(9) MANUFACTURING EMISSIONS are any emissions of VOC, CFC, or methylene chloride that occur during the manufacturing operation.

(10) MANUFACTURING OPERATION means every step of the processing of a polymeric material from the delivery of the raw material, until the storage of the final cellular product.

(11) MID PENTANE BEAD is an expandable polystyrene bead containing pentane as a blowing agent within the range of 4.0 to 5.2 percent by weight, prior to shipment, as certified upon delivery with an accompanying bead lot manufacturer's Certificate of Analysis.

(12) RAW MATERIAL means all polystyrene beads, polyurethane, reprocessed material and blowing agent used in the manufacture of polymeric cellular products.

(13) REPROCESSED MATERIAL means all regrind trim, scrap or recycled material.

(14) RIGID POLYURETHANE is a closed cell polyurethane, primarily manufactured as rigid slabstock, laminated boardstock, field spray foam or pour-in-place foam.

(15) STORAGE EMISSIONS are VOC emissions occurring for a maximum of 48 hours after the polymeric cellular foam product is manufactured.

(16) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(c) Emission Control Requirements

(1) Manufacturing Operations, Excluding Expandable Polystyrene Molding Operations and Extruded Polystyrene Foam Operations

(A) No polyurethane operation subject to this rule shall use any VOCs.

(B) Each manufacturing operation, excluding rigid polyurethane operations shall reduce yearly emissions from its 1988 emissions baseline, based on Rule 301 emission fees filing, by 100 percent, beginning calendar year 1994.

(2) Expandable Polystyrene Molding and Extruded Polystyrene Foam Operations

The owner or operator of an expandable polystyrene molding operation or an extruded polystyrene foam operation shall demonstrate, to the satisfaction of the Executive Officer, manufacturing emissions and post-manufacturing emissions, assuming all the blowing agent is released from the product, are less than 2.4 lbs per 100 lbs of raw material processed.

(3) The owner or operator of any polymeric cellular manufacturing operation, subject to the requirements of paragraphs (c)(1) or (c)(2), shall submit a plan to be approved by the Executive Officer, that demonstrates compliance with paragraph (c)(1) or (c)(2).

(4) The owner or operator of any polymeric cellular manufacturing operation that has not achieved the requirements specified in paragraph (c)(1), (c)(2), or (c)(3) shall:

(A) Submit permit applications for the installation of an emission control system within four months of the date that compliance with such requirement was not achieved; and

(B) Within twelve months of failing to meet the requirements of paragraph (c)(1), (c)(2), or (c)(3), the following provisions must be satisfied:

(i) An approved emission control system is installed and operated with all sources of manufacturing emissions collected and reduced according to subparagraphs (b)(1)(A) and (b)(1)(C); this system, including any critical operational techniques and parameters (e.g., minimum temperature and time in aging/curing areas venting to the control system, if applicable), must be incorporated in a federally enforceable permit, such as a Title V operating permit, as approved by the Executive Officer; and

(ii) All sources of storage emissions from the final manufactured product are collected and reduced according to subparagraphs (b)(1)(B) and (b)(1)(C) for at least:

(I) 48 hours, in the case of expandable polystyrene molding operations that process more than 800,000 pounds per calendar year of raw material; or

(II) 24 hours, in the case of all other manufacturing operations.

(5) Expanded polystyrene block molding operations may, in lieu of complying with the specific control requirements of clauses (c)(4)(B)(i) and (c)(4)B)(ii), collect and reduce, manufacturing emissions by at least 93 percent overall by weight (the product of capture and control device efficiencies), provided, at least 60 percent of the annual expanded polystyrene block throughput is manufactured with low-pentane bead and the remainder with mid-pentane bead. Any owner or operator of a facility who elects to comply using this alternate compliance method shall demonstrate the requisite 93 percent reduction through a source test approved in writing by the Executive Officer. Facilities with a Title V permit shall repeat such demonstration every five (5) years. This alternate compliance method, including any critical operational techniques and parameters (e.g., minimum temperature and time in aging/curing areas venting to the control system, if applicable), must be incorporated in a federally enforceable permit, such as a Title V operating permit, as approved by the Executive Officer.

(6) The owner or operator of a facility utilizing an approved emission control system shall conduct source testing, to be approved in writing by the Executive Officer, to demonstrate compliance with paragraphs (c)(2) or

(c)(4). Facilities with a Title V permit shall repeat such demonstration every five (5) years.

(d) Prohibition of Use

No polymeric cellular product operation subject to this rule shall use methylene chloride, or any CFC, unless specifically approved as an acceptable alternative under 40 CFR Part 82 Subpart G – Significant New Alternatives Policy Program.

(e) Exemptions

(1) The provisions of paragraph (c) shall not apply to any:

(A) Expandable polystyrene operation that processes less than 200 pounds per day of raw material.

(B) Rigid polyurethane operation that processes less than 1,000 pounds per day of raw material.

(2) The provisions of clause (c)(4)(B)(ii) shall not apply to any facility that only manufactures:

(A) Rigid polyurethane foam; or

(B) Expanded polystyrene foam and the highest concentration of the blowing agent in the cellular product is 1.8 percent or less by weight within 15 minutes of completion of the manufacturing operation. Verification of the concentration shall be demonstrated annually, pursuant to a written protocol submitted to and approved by the Executive Officer.

(f) Recordkeeping

(1) Any owner or operator subject to this rule or claiming an exemption under subdivision (e) shall maintain a daily record of operations, including but not limited to the amount of raw material processed, the equipment used, and the type of blowing agent used. Such records shall be retained in the operator's files for a period of five (5) years and be made available to the Executive Officer upon request.

(2) Owners and/or operators using any emission control system as a means of complying with this rule shall maintain daily records of the operation and maintenance of the emission control system. These records shall include key system operating parameters such as temperatures, pressures, flowrates, and other measures needed to demonstrate compliance with paragraphs (c)(4), (c)(5) and (c)(6). Such records shall be retained in the

operator's files for a period of five (5) years and be made available to the Executive Officer upon request.

(g) Methods of Analysis

All applicable methods of analysis shall be as cited in paragraphs (g)(1) through (g)(4) below, or any other applicable method approved by the Executive Officer, the United States Environmental Protection Agency (U.S. EPA), and the California Air Resources Board (CARB), provided the approved alternative method is equivalent to those listed below.

(1) Determination of VOC Content

The VOC content of materials subject to the provisions of this rule shall be determined by the following methods:

(A) U.S. EPA Reference Method 24 (Code of Federal Regulations Title 40 Part 60, Appendix A). The exempt solvent content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds will be analyzed as exempt compounds for compliance with subdivision (c), only when manufacturers specify which individual compounds are used in the manufacture of polymeric cellular products:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

In addition, the manufacturers must identify the U.S. EPA, CARB, and SCAQMD approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Pentanes in Expandable Styrene Polymers

The weight percent pentane in expandable polystyrene polymer shall be determined by SCAQMD Method 306 (Analysis of Pentanes in Expandable Styrene Polymers) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(3) Determination of Efficiency of Emission Control System

(A) Capture efficiency specified in paragraph (b)(1) or paragraph (c)(5) shall be determined by the procedures presented in the U.S. EPA technical guidance document “Guidelines for Determining Capture Efficiency, January 9, 1995”, or U.S. EPA Methods 204 A-F.

(B) The efficiency of the control device of the emission control system specified in paragraph (b)(1) or paragraph (c)(5) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by U.S. EPA Test Methods 25, 25A, SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon), or SCAQMD Method 25.3 (Determination of Low Concentration of Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources) as applicable. U.S. EPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(4) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(Adopted November 3, 1989)(Amended January 5, 1990)
(Amended May 13, 1994) (Amended September 13, 1996)

RULE 1176. VOC EMISSIONS FROM WASTEWATER SYSTEMS

(a) Purpose

This rule is intended to limit volatile organic compound (VOC) emissions from wastewater systems.

(b) Applicability

This rule applies to wastewater systems and associated control equipment located at petroleum refineries, on-shore oil production fields, off-shore oil production platforms, chemical plants, and industrial facilities.

(c) Definitions

For purposes of this rule, the following definitions apply:

(1) CATCH BASIN is an open basin which serves as a single collection point for rainwater or stormwater run-off directly from ground surfaces.

(2) AIR POLLUTION CONTROL (APC) DEVICE means air pollution control equipment which eliminates, reduces or controls the issuance of air contaminants.

(3) BACKGROUND LEVEL is the ambient concentration of VOC in the air as measured pursuant to paragraph (h)(1).

(4) CERTIFIED INSPECTOR is a person who has successfully completed a District approved fugitive emissions compliance inspection program and holds a current valid inspector certificate issued by the Executive Officer.

(5) CERTIFIED INSTRUCTOR is a person who has successfully completed a District fugitive emissions compliance inspection program or any other program determined to be equivalent and approved by the Executive Officer and holds a current valid instructors certificate issued by the Executive Officer.

(6) CHEMICAL PLANT is any facility engaged in producing chemicals, and/or manufacturing products by chemical processes. Any facility or operation that has 282 as the first three digits in its Standard Industrial Classification Code as defined in the Standard Industrial Classification Manual is included in this definition.

(7) CLOSED VENT SYSTEM is a system that is not open to the atmosphere and that is composed of piping, ductwork, connections, and if necessary, flow-inducing devices that collect and transport gas or vapor from an emission source to an APC device or into gas recovery and/or combustion equipment. In that case, gas recovery and/or combustion equipment shall not be considered a closed vent system and is not subject to closed vent system standards.

(8) DRAIN SYSTEM COMPONENT (DSC) is a process drain, manhole cover, junction box vent or other wastewater system vent, excluding closed vent systems. DSCs are categorized as follows:

(A) NON-EMITTING DSC is a DSC which is controlled using a gas tight barrier between the sewer and the atmosphere that for the most recent six month period does not emit VOC emissions, or is a DSC which is uncontrolled that for the most recent 24 month period does not emit VOC emissions, as measured pursuant to paragraph (h)(1) in excess of 10 ppm above background level.

(B) LOW-EMITTING DSC is a DSC that has not emitted excess emissions for the most recent six month period or is effectively controlled pursuant to subparagraph (e)(7)(A).

(C) HIGH-EMITTING DSC is a DSC that has at least one excess emission in the most recent six months.

(D) REPEAT-EMITTING DSC is a petroleum refinery DSC that has emitted excess emissions at least three times during any consecutive 12 months, unless it has been effectively controlled pursuant to subparagraph (e)(7)(A).

(9) DSC CONTROL is any control measure for a DSC which utilizes water seal controls, APC devices, hardpiping, or complete capping, plugging, or source elimination. Any other alternate control measure such as permanent source reduction may qualify as a DSC control, if approved in writing by the Executive Officer.

(10) EXCESS EMISSIONS are VOC emissions measured pursuant to paragraph (h)(1) to be greater than 500 ppm above background levels.

(11) FIXED COVER is any impermeable cover installed in a permanent stationary position.

(12) FLOATING COVER is any impermeable cover which is in contact with a liquid surface at all times.

(13) INACCESSIBLE DSC is any DSC located over 15 feet above ground when access is required from the ground; or any component located over six feet away from a platform when access is required from a platform; or any component which would require the elevation of monitoring personnel higher than six feet above permanent support surfaces. Inaccessible DSCs do not include DSC vents and wastewater system associated vents, where the vent pipes are extended more than four feet in length.

(14) INDUSTRIAL FACILITIES are those engaged in the production and distribution of natural gas, pipeline distribution or wholesale distribution of crude petroleum and petroleum products , as classified under the Standard Industrial Classification group numbers 492, or 461, respectively, of the Standard Industrial Classification Manual.

(15) JUNCTION BOX is a structure with a manhole or access point to a wastewater sewer system lines.

(16) NON-CONTACT WATER is any water which does not come into contact with wastewater.

(17) OIL PRODUCTION FIELD is a facility at which crude petroleum production and handling are conducted, as defined in the Standard Industrial Classification Manual as Industry No. 1311, Crude Petroleum and Natural Gas.

(18) PETROLEUM REFINERY is a facility that processes petroleum, as defined in the Standard Industrial Classification Manual as Industry No. 2911, Petroleum Refining.

(19) PROCESS DRAIN is any opening (including covered or controlled openings) which is installed or used to receive or convey wastewater into the wastewater system.

(20) SEPARATOR FOREBAY is that section of a gravity-type separator which receives the untreated wastewater from the preseparator flume and acts as a header which distributes the influent to the separator channels.

(21) SEWER LINE is a lateral trunk line, branch line, ditch, channel, or other conduit used to convey wastewater.

(22) SUMP is a surface impoundment or excavated depression in the ground, which is part of the wastewater system and used for storage of wastewater or separation of petroleum liquids, VOC containing liquids, water, and/or solids.

(23) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(24) WASTEWATER is a water stream or other liquid waste stream generated in a manner which may contain petroleum liquid, emulsified oil, VOC, or other hydrocarbons.

(25) WASTEWATER SEPARATOR is any device, used to separate petroleum liquids and/or VOC containing liquids from wastewater including such devices as separator forebays, clarifiers and tanks including dissolved air flotation tanks, induced gas flotation tanks and induced air flotation tanks.

(26) WASTEWATER SYSTEM is any system which consists of one or more process drains, sewer lines, junction boxes, manholes, sumps, or wastewater separators, including all of their associated components, used to receive, convey, separate, treat, or process wastewater.

(27) WATER SEAL CONTROL is a seal pot, p-leg trap, or other type of trap filled with any non-VOC containing liquid to create a liquid barrier between the sewer and the atmosphere.

(d) Identification Requirements

The facility operator shall comply with the following provisions:

(1) Requirements for Facilities other than Petroleum Refineries:

Within 60 days of written request by the Executive Officer, submit a detailed schematic drawing identifying the location within the facility of all the components of the wastewater system and all associated APC devices. In lieu of identifying the locations of the DSCs on the schematic, the DSCs locations may be identified on a separate list attached to the schematic.

(2) Requirements for Petroleum Refineries:

By June 30, 1997, submit to the District a compliance plan which shall include the following:

(A) A statement regarding which compliance option listed in either subparagraphs (e)(7)(A) or (e)(7)(B) has been chosen; and

(B) A detailed schematic drawing of the location of the wastewater system, within the facility. The schematic shall also include all of the APC devices associated with the wastewater system; and

(C) A complete DSC list identifying their total number, individual location and if controlled, the type of DSC control. The list shall also identify each DSC as either non-emitting, low-emitting, high-emitting, or repeat-emitting according to the initial monitoring

frequency in subparagraph (f)(1)(A). Historical monitoring data collected during the most recent 12 months may be used to categorize each DSC in lieu of subparagraph (f)(1)(A), except for uncontrolled non-emitting DSCs which shall be required to use the most recent 24 months of historical data. Any inaccessible DSC shall be identified for District's verification and approval; and

(D) Historical monitoring data and/or the monitoring data collected pursuant to subparagraph (f)(1)(A) used to categorize each DSC, and

(E) An identification of the proposed methods of control, if necessary, for each junction box vent based on its emission characteristics; and

(F) Any alternate DSC control which is not already identified in paragraph (c)(9) and the operator requests approval in advance by the Executive Officer for use as a DSC control. A complete description of the proposed DSC control and its specific applications shall be included.

(e) Operation and Control Requirements

The facility operator shall comply with the following provisions:

(1) Wastewater System Emissions:

Wastewater systems and closed vent systems, except sump and wastewater separator covers in compliance with clause (e)(2)(B)(vi), shall not emit VOC emissions measured pursuant to paragraph (h)(2) to be greater than 500 ppm above background levels according to the compliance dates in Table 1. The compliance date in Table 1 may be extended pursuant to subparagraphs (e)(2)(C) and (e)(5)(B).

Table 1

EQUIPMENT	COMPLIANCE DATE
Separator forebays, clarifiers, dissolved air flotation tanks, induced gas flotation tanks, and induced air flotation tanks which are not controlled.	June 30, 1997
Sumps which are not controlled.	June 30, 1997
Junction box vents and manhole cover openings.	June 30, 1997
All other parts of the wastewater system not specifically listed above.	November 3, 1989

(2) Sumps and Wastewater Separators :

(A) Sumps and Wastewater Separators shall be provided with one of the following except as provided in subparagraph (e)(2)(C):

(i) A floating cover equipped with seals.

(ii) A fixed cover, equipped with a closed vent system vented to an APC device as specified in paragraph (e)(6).

(iii) Any other alternate control measure which is demonstrated by the facility operator to be equivalent to, or more effective in reducing VOC emissions than the requirements of clauses (e)(2)(A)(i) or (e)(2)(A)(ii), and approved in writing by the Executive Officer.

(B) Sump and Wastewater Separator Covers, both fixed and floating, shall meet all of the following requirements:

(i) The cover material shall be impermeable to VOCs, and free from holes, tears, or openings.

(ii) Drains on covers shall be provided with a slotted membrane fabric cover, or equivalent, over at least 90 percent of the open area.

(iii) Gauging or sampling openings on the separator shall be covered. The covers shall be kept closed, with no visible gaps between the cover and the separator, except when the gauging or sampling device is actively being used.

(iv) Hatches on covers shall be kept closed and free of gaps, except when opened for active inspection, maintenance, sampling, or repair.

(v) The perimeter of a cover, except for a floating cover, shall form a seal free of gaps with the foundation to which it is attached.

(vi) A floating cover shall be designed and maintained so that the gap between the separator or sump wall and the seal does not exceed 1/8 inch for a cumulative length of 97 percent of the perimeter of the separator. No gap between the wall and the seal shall exceed 1/2 inch.

(C) For initial modification of sumps, separator forebays, clarifiers, dissolved air flotation tanks, induced gas flotation tanks, or induced air flotation tanks to comply with subparagraphs (e)(2)(A)

and (e)(2)(B) which require a permit to construct, compliance with paragraph (e)(1) and subparagraphs (e)(2)(A) and (e)(2)(B) shall be achieved no later than six months after the District issues the initial permit to construct, provided that a complete application for a permit to construct is submitted to the District on or before November 13, 1996.

(3) Sewer lines:

(A) All sewer lines shall be completely enclosed so that no liquid surface is exposed to the atmosphere. The manhole cover shall remain fully closed, except when opened for active inspection, maintenance, sampling, or repair.

(B) By June 30, 1997, all openings in the sewer line manhole covers shall be completely sealed.

(4) Process drains:

Any new process drain installed after September 13, 1996, shall be equipped with water seal controls or any other alternative control measure which is demonstrated by the applicant to be equivalent, or more effective than water seal controls in reducing VOC emissions, as approved in writing by the Executive Officer.

(5) Junction boxes:

(A) Junction boxes shall be totally enclosed with a solid, gasketed, fixed cover or a manhole cover. Each fixed cover shall be allowed to have an open vent pipe no more than four inches in diameter and at least three feet in length. Each manhole cover on junction boxes shall be allowed to have openings totaling no more than 12 square inches. The manhole cover shall remain fully closed, except when opened for active inspection, maintenance, sampling, or repair.

(B) For initial modification of junction boxes to comply with paragraph (e)(1), compliance shall be achieved no later than six months after the District issues the initial permit to construct for the DSC controls which require a permit to construct, provided that a complete application for a permit to construct is submitted to the District on or before June 30, 1997.

(6) APC Devices shall meet one of the following requirements:

(A) An APC device receiving vapors from a closed vent system shall achieve a control efficiency of 95 percent by weight or greater of VOC. An annual performance test shall be conducted to determine the APC device control efficiency according to the test method specified in paragraph (h)(3),

(B) The outlet of the APC device shall not emit VOC emissions measured pursuant to paragraphs (h)(1) or (h)(2) to be greater than 500 ppm above background. The frequency of monitoring shall be at least monthly, or

(C) Any APC device or other alternate system that collects vapors through a closed vent system and subsequently controls the vapors in a device, which has been issued a permit to construct or a permit to operate by the Executive Officer, and determined by the Executive Officer to provide an equivalent level of VOC emission controls as specified in subparagraphs (e)(6)(A) or (e)(6)(B).

(7) Additional Requirements for DSCs at Petroleum Refineries:

Comply with the control requirements of either subparagraphs (e)(7)(A) or (e)(7)(B) according to the schedule specified in these subparagraphs.

(A) Control of Repeat Emitting DSCs:

Within 60 days or longer, as approved by the Executive Officer, after a DSC becomes a repeat emitting DSC, effectively control the DSC by installing a DSC control, if previously uncontrolled, or a more efficient DSC control to eliminate excess emissions from the DSC.

(B) Control of All DSCs:

DSC controls shall be installed on all DSCs that are uncontrolled as of September 13, 1996, according to the following schedule:

(i) At least 25 percent of uncontrolled DSCs by December 31, 1997,

(ii) At least 50 percent of uncontrolled DSCs by December 31, 1998,

(iii) At least 75 percent of uncontrolled DSCs by December 31, 1999, and

(iv) 100 percent of uncontrolled DSCs by December 31, 2000.

(f) Inspection, Monitoring and Maintenance Requirements

The facility operator shall comply with the following provisions:

(1) Inspection and Monitoring Frequency:

Wastewater systems and closed vent system(s) shall be inspected and monitored according to the following monitoring frequency:

(A) For Petroleum Refineries Choosing Option (e)(7)(A):

Inspect and monitor wastewater separators, closed vent systems, and all DSCs monthly until the compliance plan is submitted pursuant to paragraph (d)(2). After the compliance plan is submitted:

(i) Inspect and monitor the wastewater system according to Table 2, or

(ii) After June 30, 1997, inspect and monitor the wastewater system according to Table 2, except that low-emitting DSCs may be monitored semi-annually, provided that:

(I) 0.5 percent or less of all DSCs, have emitted excess emissions as measured pursuant to paragraph (h)(1) for the most recent 12 month period, and

(II) The above is substantiated by documentation of the verified inspection and monitoring records, and submitted to the District for written approval by the Executive Officer.

The inspection and monitoring frequency, approved in clause (f)(1)(A)(ii), shall revert to clause (f)(1)(A)(i), should the facility operator's inspection records or District inspection show that greater than 0.5 percent of all DSCs have emitted excess emissions measured pursuant to paragraph (h)(1) in excess of the level specified in subclause (f)(1)(A)(ii)(I).

Table 2	
EQUIPMENT	FREQUENCY
Wastewater separator(s) and associated closed vent system(s)	Monthly
High-Emitting DSCs	Monthly
Low-Emitting DSCs	Quarterly
Non-Emitting DSCs	Semi-annually
Inaccessible DSCs	Annually

(B) Petroleum Refineries Choosing Option (e)(7)(B):

(i) Inspect and monitor wastewater separators, closed vent systems, and all DSCs monthly until the compliance plan is submitted pursuant to paragraph (d)(2).

(ii) After the compliance plan is submitted, inspect and monitor the wastewater system according to Table 3.

Table 3	
EQUIPMENT	FREQUENCY
Wastewater separator(s) and associated closed vent system(s).	Monthly
DSCs (Excluding Non-Emitting DSCs)	Quarterly
Non-Emitting DSCs	Semi-annually
Inaccessible DSCs	Annually

(C) For Oil Production Fields, Chemical Plants, and Industrial Facilities:

Effective September 13, 1996, inspect and monitor wastewater separator(s), associated closed vent system(s) and DSCs quarterly, except that non-emitting DSCs and inaccessible DSCs, may be inspected annually.

(2) On or after July 1, 1997, or a later date as approved in writing by the Executive Officer, all inspections and monitoring required under paragraph (f)(1) shall be done by a certified inspector.

(3) Wastewater systems with excess emissions or otherwise found in violation through either operator inspection or District inspection shall be repaired

or rectified within three calendar days of detection. The repaired or rectified component shall be reinspected by the facility operator between 24 hours to 48 hours for petroleum refineries and between 24 hours to 15 calendar days for other facilities after the repair or rectification to ensure that the repaired or rectified component is in compliance with this rule. The operator shall take all feasible steps to minimize emissions during the repair or replacement period.

(g) Recordkeeping, Reporting and Verification of Records Requirements

The facility operator shall comply with the following provisions:

(1) Recordkeeping:

(A) All records shall be maintained at the facility for a period of two years and made available to District staff upon request.

(B) Any operator using an APC device for a wastewater system as a means of complying with this rule, shall maintain records of system operation or maintenance which will demonstrate proper operation and compliance of the APC device during periods of emission producing activities.

(C) Inspection records for the wastewater system shall be made and documented as follows:

(i) The inspection record shall include and document all written or machine recorded operator inspections, VOC measurements including corresponding background levels, source tests, repairs, replacements, and reinspection records.

(ii) The inspection record shall include the date(s) they were taken.

(iii) The inspection record shall include the name and signature of the certified inspector(s). An electronic identification code may be used instead of a signature provided that the certified inspector verifies, in writing, that he or she has conducted the inspection and monitoring.

(2) Reporting requirements for refineries:

(A) Any change to the wastewater system or any other component required to be identified by paragraph (d)(2), shall be submitted to

the District within 60 calendar days after construction is completed.

(B) For facility operators complying with subparagraph (e)(7)(A), a quarterly report shall be submitted to the District in a format approved by the Executive Officer, within 30 calendar days after the end of each quarter. The report shall include all of the following:

(i) The identification of all DSCs with recordings of excess emissions and the corresponding levels of emissions in ppm,

(ii) The identification of repeat emitting drains including each record of excess emissions and subsequent repairs within the last 12 months before corrective actions,

(iii) The corrective actions taken pursuant to subparagraph (e)(7)(A), and

(iv) Each monitoring record after corrective actions until the report is submitted.

(C) For facility operators complying with subparagraph (e)(7)(B), semi-annual reports shall be submitted to the District, each within 30 days after the end of each six month period, showing:

(i) Which DSCs identified in paragraph (d)(2) have been controlled and the type of control, until all DSCs are controlled, and

(ii) All DSCs identified to have an excess emission.

(3) Verification of Records:

All inspection records and reports submitted to the District, shall be signed by the facility official with responsibility for operation of the equipment subject to this rule, to verify that the inspection(s) have been conducted by certified inspectors consistent with the requirements of this rule.

(4) Any inaccurate verification of inspection records shall constitute a violation of this rule.

(h) Test Methods

(1) EPA Reference Method 21:

Measurement of gaseous VOC concentration shall be conducted according to EPA Reference Method 21, using an appropriate analyzer calibrated

with methane, or any other method demonstrated by the applicant to be equivalent and approved in writing by the Executive Officers of the District, the California Air Resources Board (CARB), and the Regional Administrator of the United States Environmental Protection Agency (U.S. EPA), Region IX, or their designees. Background level shall be measured using the Method 21 procedure for determining local ambient concentration around the source.

(2) District Grab Sample Method:

Sampling and analysis shall be conducted according to the test methods contained in Attachment A, or any other procedure and method demonstrated by the applicant to be equivalent and approved in writing by the Executive Officers of the District, the CARB, and the Regional Administrator of the U.S. EPA, Region IX, or their designees.

(3) EPA Reference Method 25:

Measurement of control efficiency of an air pollution control device shall be conducted according to EPA Reference Method 25, District Test Method 25.1, or any other method demonstrated by the applicant to be equivalent and approved in writing by the Executive Officers of the District, the CARB, and the Regional Administrator of the U.S. EPA, Region IX, or their designees. Emissions determined to exceed any limits established by this rule through either of the referenced test methods in paragraph (h)(3) shall constitute a violation of this rule. Test procedures shall be performed in accordance with a protocol approved by the Executive Officer.

(i) Exemptions

Specified provisions of this rule shall not apply if the wastewater system meets the applicable criteria shown below. Any person seeking to qualify for any one of the following exemptions has the burden of proving its wastewater system meets the applicable specified criteria:

(1) The provisions of subdivision (e) shall not apply to equipment which, if covered, would present unavoidable explosion or fire hazards, as approved in writing by the Executive Officer.

(2) The provisions of paragraph (e)(1) shall not apply to process drains while receiving petroleum liquids and/or VOC containing liquids.

(3) The provisions of paragraph (e)(1) and subparagraph (e)(2)(B) shall not apply to components which the facility operator has detected and recorded to be in violation or to emit excess emissions, prior to District discovery and which is repaired and reinspected pursuant to paragraph (f)(3). This exemption is limited to the period of time between recording and reinspection.

(4) The provisions of paragraph (e)(6) and subparagraph (f)(1)(C) shall not apply to natural gas handling facilities which are primarily operated to receive and inject natural gas into the ground for underground storage and subsequent processing and distribution with at least 80 percent methane (by volume), and of pipeline quality, such as the gas sold or distributed by any utility company regulated by the California Public Untilities Commission, provided that:

(A) None of the wastewater separators, DSCs, closed vent systems and APC devices at the facility emit VOC emissions greater than 500 ppm as measured pursuant to paragraph (h)(2) at any time, and

(B) The facility operator requests this exemption and provides inspection and monitoring records for the most recent two years, which demonstrates compliance with subparagraph (i)(4)(A), for the most recent two years, and the request is approved in writing by the Executive Officer.

This approval and exemption shall automatically expire should facility operator's subsequent inspection records or District inspection show that the facility does not comply with the requirements of subparagraph (i)(4)(A). If the exemption is lost due to non-compliance with subparagraph (i)(4)(A), the facility may reapply for an exemption pursuant to subparagraph (i)(4)(B)

(5) All the provisions of this rule shall not apply to the following:

(A) Components which present a safety hazard for inspection as documented and established in a previous safety manual or policy, or with the prior written approval of the Executive Officer except that these components shall be monitored for excess emissions when it is safe to do so. Upon detection, the excess emission shall be corrected as soon as the repairs or replacement can be carried out safely.

(B) Wastewater separator pressure-vacuum valves when open, due to a vacuum produced within the wastewater system.

(C) Spill containments for tanks.

(D) Open pipe channels designed for spill containment.

(E) Tanks subject to Rule 463.

(F) Valves, fittings, pumps, compressors, pressure relief devices, diaphragms, hatches, site-glasses, and meters which are subject to or exempt from the requirements of Rule 1173.

(G) Equipment, including catch basins, that exclusively receive, hold, or discharge rainwater, stormwater runoff, or non-contact water.

(H) Well cellars used in emergencies at oil production fields, if clean-up procedures are implemented within 24 hours after each emergency occurrence and completed within ten (10) calendar days.

(I) Sampling junction boxes of the wastewater system prior to discharge into the municipal sewer lines and which are designated as the legal sample point on the facility's industrial wastewater permit.

(J) Wastewater system(s), if the VOC content of each liquid stream entering each sump and/or wastewater separator does not exceed at all times 5 mg per liter, as determined by EPA Test Method 8240 or any other method demonstrated by the applicant to be equivalent and approved in writing by the Executive Officers of the District, the CARB, and the Regional Administrator of the U.S.-EPA, Region IX, or their designees. Samples of the liquid stream shall be collected from each inlet to the sump and/or wastewater separator. A safe sampling site or sampling port to meet the requirements of this subparagraph shall be installed upon request of the Executive Officer. The sampling site or port shall be installed within two weeks after request by the Executive Officer or by any other date as approved by the Executive Officer.

(K) Biological wastewater treatment units and their downstream equipment in a secondary treatment system that is installed and operated to meet the National Pollutant Discharge Elimination System (NPDES) discharge requirements if the VOC content of each liquid stream entering the secondary treatment system does

not exceed at all times 5 mg per liter, as determined by EPA Test Method 8240 or any other method demonstrated by the applicant to be equivalent and approved in writing by the Executive Officers of the District, the CARB, and the Regional Administrator of the U.S.-EPA, Region IX, or their designees. Samples of the liquid stream shall be collected from each inlet to the sump and/or wastewater separator. A safe sampling site or sampling port to meet the requirements of this subparagraph shall be installed upon request of the Executive Officer. The sampling site or port shall be installed within two weeks after request by the Executive Officer or by any other date as approved by the Executive Officer.

(L) Sanitary sewers and sanitary sewer systems not processing wastewater.

ATTACHMENT A

District Grab Sample Method

The grab sample procedure and method of analysis shall be according to the following:

1. Sampling Apparatus

The sampling system shall consist of at a minimum:

a. A 3 liter volume type 316 stainless steel tank.
b. A valve for leak tight shut off.
c. Two vacuum gauges which can measure 0 inch Hg to 30 inches of Hg.
d. A glass rotameter which can accurately measure a flowrate of 1 liter per minute and larger.
e. A one-eighth inch diameter Teflon connector.
f. An inlet probe, and metallic fittings.

The dead space volume in the sample line shall be kept to a minimum. All metallic components including the gauges shall be constructed of stainless steel. A type 304 stainless steel tank may be allowed provided there are no acids in the sample. Refer to Figure 1 for a schematic diagram of the sampling apparatus. The glass rotameter shall be calibrated once every three months.

2. Sample Tank Evacuation and Leak Check

The evacuation and leak check of the sample tank shall be performed according to the corresponding section of EPA Method 25.

3. Leak Check the Sampling Line

3.1. The sampling line shall be leak checked at the site before and after sampling using the following procedure:
   a. Cap the inlet probe.
   b. Open the shut off valve slowly and briefly to allow 1 inch of Hg of vacuum in the line.
   c. Close the valve immediately.
   d. The sampling line is leak free if there is no change in vacuum for one minute.

3.2. As an alternative, the sampling line may be leak checked before and after sampling using the following procedure:
   a. Insert one end of a vacuum gauge at the inlet probe.
   b. Cap or seal the other end of the vacuum gauge attached to the probe.
   c. Follow procedures 3.1.b. through 3.1.d.

4. Sampling

a. Purge the sample line.
b. Record the vacuum prior to sampling.
c. Use the section on "Individual Source Surveys" of EPA Reference Method 21 to take samples with the inlet probe of the sampling apparatus.

d. The rotameter shall be level to the horizon.
e. Open the shut off valve slowly.
f. Adjust the rotameter to a constant 1 liter per minute flowrate. Maintain this constant flowrate throughout sampling.
g. Close the shut off valve when the vacuum has dropped to between 5-10 inches of Hg.
h. Record the vacuum after sampling is completed.

5. Analysis of Sampling

The sample shall be analyzed according to the applicable analytical gaseous sections of EPA Method 25, or District Test Method 25.1.

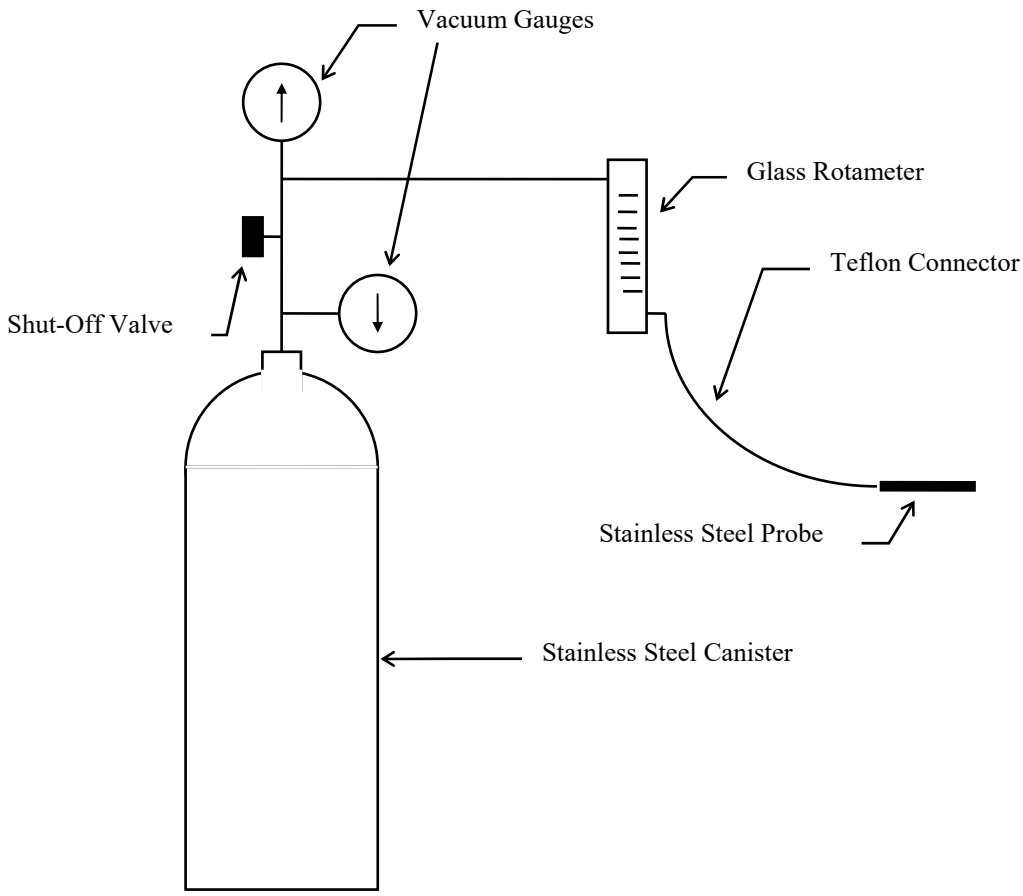


Figure 1
Schematic Diagram of Sampling Apparatus

(Adopted June 1, 2012)

RULE 1177. LIQUEFIED PETROLEUM GAS TRANSFER AND DISPENSING

(a) Purpose

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs) associated with the transfer and dispensing of liquefied petroleum gas (LPG).

(b) Applicability

This rule applies to the transfer of LPG from any cargo tank, stationary storage tank or cylinder into any other cargo tank, stationary storage tank, cylinder, or portable storage tank.

(c) Definitions

For the purpose of this rule the following definitions shall apply:

(1) BOBTAIL TRUCK is a vehicle that is equipped with a cargo tank without a trailer and is used to deliver propane.

(2) BUBBLE TEST is the application of a soap solution, detergent, aerosol spray or similar material that promotes the formation of bubbles at the site of any potential LPG vapor leak source and observing for bubbles.

(3) CARGO TANK is a container that is used to transport LPG and is either mounted on a conventional truck chassis or is an integral part of a cargo transporting vehicle, such as a bobtail, mobile fueler or rail tank car.

(4) CONNECTOR is any component, including an adapter, hose, fitting, valve or coupling that is used to facilitate the transfer of LPG from one container to another, and that is disconnected following completion of an LPG transfer or dispensing activity.

(5) CONTAINER is any vessel, including cylinders, stationary tanks, portable storage tanks, and cargo tanks, used for the transporting or storage of LPG.

(6) CYLINDER is a container designed, constructed, tested and marked in accordance with U.S. Department of Transportation (DOT) specifications, Title 49, Code of Federal Regulations or in accordance with a valid DOT special permit.

(7) FILL BY WEIGHT is the filling of an LPG container without use of an FLLG and monitoring the fill level to prevent overfilling by weighing the container and the LPG in the container and limiting the filling to no more than the rated maximum capacity.

(8) FIXED LIQUID LEVEL GAUGE (FLLG) is a liquid level indicator that uses a positive shutoff vent valve to indicate that the liquid level in a container being filled has reached the point at which the indicator communicates with the liquid level in the container.

(9) INSPECTION is a physical survey of all LPG connectors for evidence of leakage through use of a bubble test. Use of a test method in accordance with subdivision (h) may be substituted for an inspection.

(10) LIQUID TIGHT is a visible liquid leak rate not exceeding three drops per minute or exhibiting a visible liquid mist.

(11) LOW EMISSION FLLG is fixed liquid level gauge with a number 72 orifice size (0.025 inch) or physical configuration that results in an equivalent or lower emission rate that is tested and demonstrated using a method for which written approval of the Executive Officer has been obtained.

(12) LPG or LIQUEFIED PETROLEUM GAS is an organic compound having a vapor pressure not exceeding that allowed for commercial propane that is composed predominantly of the following hydrocarbons, either by themselves or as mixtures: propane, propylene, butane (normal butane or isobutane) and to a lesser extent butylenes, and that is stored and transported under pressure in a liquid state.

(13) LPG BULK LOADING FACILITY is an LPG transfer and dispensing facility where the primary function is to store LPG for further distribution and has one or more stationary storage tanks with a water capacity of 10,000 gallons or more.

(14) LPG LOW EMISSION CONNECTOR is any component, including an adapter, hose, fitting, valve or coupling that is used to facilitate transfer of LPG from one container to another and that is designed to result in a maximum emission release of four (4) cubic centimeters of LPG when disconnected.

(15) LPG TRANSFER AND DISPENSING FACILITY is a mobile fueler or a stationary facility consisting of one or more stationary storage tanks and associated equipment which receives, stores and either transfers or

dispenses LPG to stationary storage tanks, cargo tanks, or portable storage tanks.

(16) LPG VAPOR RECOVERY OR EQUALIZATION SYSTEM is a system installed on an LPG mobile fueler or a rail tank car that facilitates the transfer of liquid LPG and allows for the collection and recovery of LPG vapors displaced or emitted from the stationary storage tank, or cargo tank when LPG is transferred to or from the mobile fueler or rail tank car.

(17) LPG VAPORS are the organic compounds in vapor form as well as entrained liquid LPG displaced during LPG transfer and dispensing operations.

(18) MOBILE FUELER is any tanker truck or trailer, including a bobtail truck, which is used to transport LPG stored in an onboard cargo tank.

(19) OWNER/OPERATOR is any person who owns, leases, or operates any facility subject to this rule.

(20) PORTABLE CYLINDER is a container that is designed, constructed, tested and marked in accordance with U.S. Department of Transportation (DOT) specifications, Title 49, Code of Federal Regulations or in accordance with a valid DOT special permit. Examples of portable cylinders that contain LPG include those used with small hand torches, forklifts, barbecue grills and agricultural weed burners.

(21) PORTABLE STORAGE TANK is a container or portable cylinder designed to be moved readily, as opposed to a container or stationary cylinder designed for stationary installations.

(22) RAILROAD TANK CAR is a mounted cargo tank designated for transport over rail.

(23) STATIONARY CYLINDER is the largest DOT approved cylinder and is typically used in residential, commercial and industrial applications.

(24) STATIONARY STORAGE TANK is a container that is used for the storage of LPG, including, but not limited for residential, commercial or industrial usage, and includes containers constructed in accordance with the American Society of Mechanical Engineers Code .

(25) VALVE is a device that regulates or isolates the fluid flow in a pipe, tube, tank, or conduit by means of an external actuator.

(26) VAPOR TIGHT is the leak-free condition of LPG connectors established in accordance with the provisions of subdivision (h).

(d) Equipment and Operation Requirements

(1) LPG transfer at LPG Bulk Loading Facilities

Effective July 1, 2013, an owner/operator of an LPG bulk loading facility shall not transfer, allow the transfer or provide equipment for the transfer of LPG, from any cargo tank to a stationary storage tank located at the facility or from any stationary storage tank to a cargo tank unless all the following conditions are met:

(A) Any railroad tank car or mobile fueler equipped with an LPG vapor recovery or equalization system is maintained and operated according to the specifications of the vapor recovery and equalization system manufacturer;

(B) All vapor return lines and liquid lines are properly connected between the cargo tank and the stationary storage tank so that associated connectors are maintained in a vapor tight and liquid tight condition during LPG transfer; and

(C) The transfer hose assembly, which includes the hose, fittings and gaskets, is properly maintained in order to maintain vapor tight conditions.

(2) LPG transfer at LPG Transfer and Dispensing Facilities

Effective July 1, 2013, an owner/operator of an LPG transfer and dispensing facility shall not transfer LPG from any stationary storage tank, cargo tank, or cylinder into any stationary storage tank, cargo tank, cylinder, portable storage tank, or vehicle fuel tank unless the specific containers meet the following applicable conditions:

(A) The leased or owned stationary storage tank meets one or more of the following conditions:

(i) The stationary storage tank FLLG is closed during LPG transfer, using a filling technique or technology that monitors the maximum fill level to prevent overfilling without use of the FLLG; or

(ii) The stationary storage tank is equipped with a low emission FLLG according to the following schedule:

(I) If the stationary storage tank is either put into or returned to service, it shall be equipped with a low emission FLLG; and

(II) If the stationary storage tank does not meet the provisions of subclause (d)(2)(A)(ii)(I), it shall be equipped with a low emission FLLG by July 1, 2015, or by July 1, 2017 if the owner/operator demonstrates through documentation prior to July 1, 2015 that the stationary storage tank being filled is equipped with an FLLG that cannot be retrofitted with a low emission FLLG in a safe manner without relocation of the stationary storage tank. Documentation shall be made available to the Executive Officer upon request; and

(B) The cargo tank, if equipped with a FLLG, meets one or more of the following conditions:

(i) The cargo tank FLLG is closed while being filled using a filling technique or technology that monitors the maximum fill level to prevent overfilling without use of the FLLG; or

(ii) The cargo tank FLLG is equipped with a low emission FLLG according to the following schedule:

(I) If manufactured on or after July 1, 2013, the cargo tank shall be equipped exclusively with one or more low emission FLLGs; or

(II) The cargo tank shall be equipped exclusively with one or more low emission FLLGs by July 1, 2013, or as soon thereafter at the next service in which the cargo tank is evacuated, but no later than July 1, 2017; and

(C) If the container is a cylinder or portable storage tank, the container shall meet one or more of the following conditions:

(i) The cylinder or portable storage tank FLLG is closed during LPG transfer, using a fill by weight technique or alternative technique or technology that monitors the maximum fill level to prevent overfilling without use of the FLLG; or

(ii) The cylinder or portable storage tank is equipped with a low emission FLLG no later than July 1, 2017; and

(D) Notwithstanding the above effective date of July 1, 2013, the stationary storage tank, cargo tank or cylinder used to transfer or dispense LPG is fitted exclusively with LPG low emission connectors that are maintained in a vapor tight and liquid tight condition, except when actively connecting or disconnecting, after December 31, 2013.

(e) Owner/Operator Leak Detection and Repair Program Requirements

Effective January 1, 2013, the owner/operator of any LPG bulk loading facility or any LPG transfer and dispensing facility that offers LPG for sale to an end user shall:

(1) On a daily basis, physically check all connectors involved with the transfer of LPG for evidence of leakage, such as the presence of odorant, hissing, or staining.

(2) Conduct an inspection as defined in paragraph (c)(9), for any owned or leased stationary storage tank or cargo tank used to supply LPG to any other stationary storage tank or cargo tank once every 90 days, or if the time between fillings is greater than 90 days, during or upon completion of a transfer of LPG.

(3) Conduct a periodic training program for any employee that implements the provisions of paragraph (e)(1) or (e)(2). The training program shall incorporate:

(A) Written training procedures;

(B) The training frequency and the scheduled training dates; and

(C) A written record of the dates of training provided for each employee.

(4) Remove from service any connector which is identified as leaking in accordance with paragraph (e)(1) or (e)(2). The connector shall not be put back into service until the leaky connector is repaired or replaced and inspected. An entry of such leak and repair/replacement activity shall be recorded in accordance with paragraph (f)(1) before the connector is returned to service. The identified leak repaired pursuant to this paragraph shall not constitute a violation of subparagraph (d)(1)(B) and (d)(2)(D).

(f) Recordkeeping Requirements

(1) Effective January 1, 2013, the following records shall be maintained for a period of at least two years and shall be made available to the Executive Officer upon request:

(A) A person who performs the installation of FLLGs or connectors, inspections, as defined by paragraph (c)(9), or repairs connectors at any LPG transfer and dispensing facility or any LPG bulk loading facility, shall provide the owner/operator with all applicable records listed below immediately after service is completed, and the owner/operator shall maintain all provided records:

(i) Records of all FLLGs and connectors installed.

(ii) Service or sales receipts or repair logs confirming follow-up repairs for any leaks identified and repaired in accordance with paragraph (e)(1) and (e)(2), which shall include:

(I) Date and time of each repair;

(II) The name of any person who performed the repair and, if applicable, the name, address and phone number of their employer;

(III) A description of the service performed; and,

(IV) Identification of the FLLG or connector that was installed, repaired, serviced or removed, such as FLLG or connector identification information and FLLG or connector manufacturer name.

(B) The owner/operator of any railroad tank car or mobile fueler equipped with an LPG vapor recovery or equalization system shall maintain records to demonstrate that the system is maintained and operated according to the specifications of the vapor recovery and equalization system manufacturer.

(2) The owner/operator of any LPG transfer and dispensing facility shall maintain and provide to the Executive Officer upon request, documentation that demonstrates that any connector or FLLG used to comply with subdivision (d) meets the definition of LPG low emission connector or low emission FLLG, respectively.

(g) Reporting Requirements

(1) By July 1 of each year from 2014 through 2016, the owner/operator of an LPG bulk loading facility or an LPG transfer and dispensing facility that offers LPG for sale to an end user shall submit an annual report containing the monthly LPG purchase volume and dispensing volume to the Executive Officer for the prior calendar year, in a format approved by the Executive Officer. The reporting facility shall maintain copies of all purchase and sales records used to support the submitted report for a period of at least two years, and make such records available to the Executive Officer upon request.

(2) In lieu of submitting the above annual report, the owner/operator of an LPG transfer and dispensing facility that offers LPG for sale to an end user shall meet all of the following conditions:

(A) Provide that all the facility's LPG suppliers for that prior calendar year include the name of the facility with the supplier's annual report and have the supplier notify the District and the facility by March 1 of the reporting year that the supplier will include the facility in its annual report.

(B) The facility shall maintain copies of all purchase records and notifications from all LPG suppliers for a period of at least two years, and make such records available to the Executive Officer upon request.

(3) By July 1, 2014, the owner/operator of an LPG bulk loading facility shall submit to the Executive Officer an end of year inventory of all facility located LPG low emission connectors, including all LPG low emission connectors installed on facility-owned or leased mobile fuelers associated with the transfer or storage of LPG for calendar year 2013. This inventory shall include the specific storage or transfer equipment or operation involved and the manufacturer and identification or part number of all low emission connectors.

(4) By July 1 of each year from 2014 through 2018, the owner/operator of an LPG bulk loading facility shall submit to the Executive Officer an end of year inventory of all facility located containers, including all facility-owned or leased mobile fuelers associated with the transfer or storage of LPG that are equipped with one or more FLLGs for the prior calendar year. This inventory shall include a summary, by size and classification,

and the associated number of installed low emission FLLGs, submitted in a form approved by the Executive Officer.

(h) Test Method

Measurements of leak concentrations shall be conducted according to the United State Environmental Protection Agency (U.S. EPA) Reference Method 21 using an appropriate analyzer calibrated with methane. The analyzer shall be calibrated before inspection on the day of inspection. For the purposes of this rule, a measurement at or below 10,000 ppm shall be considered to be vapor tight.

(i) Exemptions

(1) The provisions of this rule shall not apply to the transfer of LPG into any container with a water capacity less than four (4) gallons.

(2) The provisions of this rule shall not apply to facilities that are subject to the requirements of Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants.

(3) The provisions of subparagraph (d)(2)(C) shall not apply to LPG cylinders that are specifically dedicated for and installed for use with recreational vehicles.

(Adopted December 21, 2001)(Amended April 7, 2006)

RULE 1178. FURTHER REDUCTIONS OF VOC EMISSIONS FROM STORAGE TANKS AT PETROLEUM FACILITIES

(a) Purpose

The purpose of this rule is to further reduce emissions of volatile organic compounds (VOC) from storage tanks located at petroleum facilities.

(b) Applicability

The rule applies to all aboveground storage tanks that have capacity equal to or greater than 75,000 liters (19,815 gallons), are used to store organic liquids with a true vapor pressure greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions, and are located at any petroleum facility that emits more than 40,000 pounds (20 tons) per year of VOC in any emission inventory year starting with the emission inventory year 2000.

(c) Definitions

For the purpose of this rule the following definitions shall apply:

(1) ACCESS HATCH is an opening in the roof with a vertical well and a cover attached to it. Access hatch provides passage for workers and materials through the roof for construction or maintenance.

(2) AMBIENT TEMPERATURE is the temperature of an organic liquid within a storage tank that has been influenced by atmospheric conditions only and is not elevated by a non-atmospheric means of heating at the tank which includes but is not limited to steam, hot water, heaters, heat exchangers, tank insulation, or tank jacketing.

(3) CERTIFIED PERSON is a person who has successfully completed the District tank self-inspection program and a District approved fugitive emissions compliance inspection program, and who holds a certificate issued by the Executive Officer evidencing that such person is in good standing in this program.

(4) CONTINUOUS SEAL is a seal that forms a continuous closure that completely covers the annular space between the wall of the storage vessel and the edge of the floating roof. A continuous seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

(5) DOMED ROOF is a self-supporting fixed roof attached to the top of an external floating roof tank to reduce evaporative losses.

(6) EMISSION CONTROL SYSTEM is a combination of capture system(s) and control equipment used to recover, reduce, remove or control the release of VOC to the atmosphere. Such equipment includes, but is not limited to, absorbers, adsorbers, compressors, condensers, incinerators, flares, boilers, and process heaters.

(7) EMISSION INVENTORY YEAR is the annual emission-reporting period beginning from July 1 of the previous year through June 30 of a given year. For example, emission inventory year 2000 covers the period from July 1, 1999 through June 30, 2000.

(8) EXTERNAL FLOATING ROOF TANK is a storage tank with a roof consisting of a double deck or pontoon single deck which rests or floats on the liquid being contained.

(9) EXEMPT COMPOUNDS are as defined in Rule 102.

(10) FACILITY is any equipment or group of equipment or other VOC-emitting activities, which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility.

(11) FIXED ROOF SUPPORT COLUMN AND WELL is a column made of round pipe or of structural shape with an irregular cross section that passes through the floating roof via a peripheral vertical well and is used to support the roof of an internal floating roof tank.

(12) FIXED ROOF TANK is a storage tank with a permanently affixed roof.

(13) FUEL GAS SYSTEM is the piping and control system that gathers gaseous stream(s) generated by onsite operations and transports the gaseous stream for sale or for use as fuel gas in combustion devices, or in-process combustion equipment such as furnaces and gas turbines, either singly or in combination.

(14) GAUGE FLOAT is a device that is used to indicate the level of liquid within the tank. The float rests on the liquid surface and is housed inside a well that is closed by a removable cover.

(15) GAUGE HATCH/SAMPLE PORT is an opening in the roof that provides access for gauging or sampling. A gauge hatch/sample port is usually equipped with a closing cover or a funnel and slit-fabric seal to cover the opening.

(16) GUIDEPOLE is an anti-rotation device that is fixed to the top and bottom of the tank, passing through a well that is equipped with a sliding cover. The guidepole is used to prevent adverse movement of the roof and subsequent damage to the roof fittings and rim seals, or as access for level gauging or sampling of the liquid stock. The guidepole can be solid or equipped with slots or holes for gauging purpose.

(17) INTERNAL FLOATING ROOF TANK is a storage tank equipped with a fixed roof and a floating roof which rests on the liquid being contained.

(18) LADDER AND WELL is a ladder that passes through a well, and is used to access the tank bottom of an internal floating roof tank.

(19) LIQUID MOUNTED PRIMARY SEAL is a primary seal that is mounted in full contact with the liquid in the annular space between the tank shell and the floating roof.

(20) MECHANICAL SHOE PRIMARY SEAL is a metallic band attached to the floating roof sliding in contact with the tank shell. The shoes are supported and held against the tank shell by a mechanical device, and are joined together to form a ring. The vapor space between the shoe and the roof is sealed from the atmosphere by a primary seal of coated or VOC impervious fabric.

(21) ORGANIC LIQUID is any liquid containing VOC.

(22) PETROLEUM FACILITY is any facility primarily engaged in the production, refining, storage, transfer or distribution of crude petroleum or petroleum products as defined in the Standard Industrial Classification for crude petroleum and natural gas (SIC code 1311), petroleum refining (SIC code 2911), petroleum bulk stations and terminals (SIC code 5171), or other related industries (e.g., SIC codes 4226, 4612, 4613, 4923 and 5541).

(23) POLE FLOAT is a device located inside a guidepole that floats on the surface of the stored liquid, and is used to indicate the liquid level inside the tank.

(24) POLE SLEEVE is a device that extends from either the cover or the rim of an opening in a floating roof deck to the outer surface of a pole that passes through the opening.

(25) POLE WIPER is a seal that extends from either the cover or the rim of an opening in a floating roof deck to the outer surface of a pole that passes through the opening.

(26) PRESSURE-VACUUM VENT is a vent that is used to minimize tank emissions due to breathing effects.

(27) PRIMARY SEAL is a seal mounted below a secondary seal of a rim seal system that consists of two seals. A primary seal, which is in contact with the floating roof tank shell, can be either mechanical shoe, resilient filled, or wiper type.

(28) RESILIENT FILLED PRIMARY SEAL is an envelope filled with resilient foam (non-metallic polyurethane) mounted at the rim of the floating roof that makes contact with the shell. A resilient filled nonmetallic primary seal can be liquid-mounted or vapor-mounted.

(29) RIM MOUNTED SECONDARY SEAL is a secondary seal mounted on the rim of the floating roof of a storage tank. Rim mounted secondary seals are effective at reducing losses from the primary seal fabric.

(30) RIM SEAL SYSTEM is a closure device between the shell of the storage tank and the floating roof edge. A rim seal system may consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal.

(31) RIM VENT is a device consisting of a weighted pallet that rests on a valve seat. Rim vents are used to release any excess pressure or vacuum present in the vapor pocket between the seal and the rim area of a floating roof tank.

(32) ROOF DRAIN is a drain on the roof of a floating roof tank that is used to remove rainwater from the floating roof. There are two types of roof drains. A closed roof drain removes the rainwater from the surface of the roof through a flexible hose through the stored liquid prior to exiting the tank. With a closed roof drain, the rainwater does not come in contact with the liquid stored in the tank. An open roof drain is any drain other than the closed roof drain. An open roof drain is typically used only during an emergency.

(33) ROOF LEG is a device that holds the floating roof at a predetermined distance from the tank bottom to allow for tank cleaning or repair. There are two types of roof legs, adjustable or fixed. Fixed legs are attached to

the floating roof or hangers suspended from the roof, whereas adjustable legs pass through a well or sleeve, and penetrate the roof.

(34) ROOF OPENING is any opening through a floating roof of a storage tank for any roof fitting including but not limited to access hatch, fixed roof support column and well, gauge float, gauge hatch, sample port, guidepole, ladder and well, rim vent, roof drain, roof leg, and vacuum breaker, and excluding rim seal system.

(35) SECONDARY SEAL is a seal mounted above the primary seal of a rim seal system that consists of two seals. Secondary seals can be shoe mounted or rim-mounted.

(36) SHOE MOUNTED SECONDARY SEAL is a secondary seal mounted on the primary mechanical shoe. Shoe mounted secondary seals are effective at reducing vapor losses from the gaps between the shoe and the tank shell.

(37) SLOTTED GUIDEPOLE is a guidepole that has slots or holes through the wall of the guidepole. The slots or holes allow the stored liquid to flow into the pole at liquid levels above the lowest operating level.

(38) STORAGE TANK is a stationary aboveground container that has capacity equal to or greater than 75,000 liters (19,815 gallons) and is used to store organic liquids with a true vapor pressure greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions.

(39) TRUE VAPOR PRESSURE is the vapor pressure of a liquid at actual storage conditions.

(40) VACUUM BREAKER is a device used to equalize the pressure of the vapor space across the deck as the floating roof is either being landed on or floated off its legs. A vacuum breaker consists of a well with a cover. Attached to the underside of the cover is a guided leg long enough to contact the tank bottom as the floating roof is being landed. When in contact with the tank bottom, the guided leg mechanically lifts the cover off the well.

(41) VAPOR MOUNTED PRIMARY SEAL is a primary seal that does not come in contact with the liquid in the annular space between the tank shell and the floating roof.

(42) VAPOR TIGHT CONDITION is a condition that exists when the reading on a portable hydrocarbon analyzer is less than 500 parts per million (ppm), expressed as methane, above background, measured using EPA Reference Method 21.

(43) VISIBLE GAP is a gap of more than 1/8 inch between any gasket or seal and the opening that it is intended to seal. Visible gap for primary and secondary seals is a gap that does not meet the requirements specified in subdivision (d).

(44) VOLATILE ORGANIC COMPOUNDS (VOC) as defined in Rule 102.

(45) WASTE STREAM TANK is a storage tank containing at least 75% water by volume, and some liquid waste stream generated in a manner which contains petroleum liquid, emulsified oil, VOC or other hydrocarbons. For the purpose of this rule, waste stream tanks include waste water tanks and recovered oil (or slop oil) tanks.

(46) WIPER PRIMARY SEAL is a continuous annular blade of flexible material (e.g. rubber, urethane, or foam filled) fastened to a mounting bracket on the deck perimeter that spans the annular rim space and contacts the tank shell. A wiper seal system may consist of a single primary seal, or dual (multiple) seals where one seal is mounted above the other.

(d) Requirements

(1) External Floating Roof Tanks

(A) No later than July 1, 2003, the operator of an external floating roof tank containing organic liquids having true vapor pressure of less than 3 psia at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 shall:

(i) Equip each access hatch and gauge float well with a cover that is gasketed and bolted. The cover shall be closed at all times, with no visible gaps, except when the hatch or well must be opened for access.

(ii) Equip each gauge hatch/sample well with a cover that is gasketed. The cover shall be closed at all times, with no visible gaps, except when the hatch or well must be opened for access.

(iii) Gasket or cover each adjustable roof leg with a VOC impervious sock at all times when the roof is floating.

(iv) Gasket each rim vent. Rim vents shall be closed at all times, with no visible gaps, when the roof is floating; and

shall be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(v) Gasket each vacuum breaker. Vacuum breakers shall be closed at all times, with no visible gaps, when the roof is floating; and shall be set to open only when the roof is being floated off or is being landed on the roof leg supports.

(vi) Equip each open floating roof drain with a slotted membrane fabric cover or other device with an equivalent control efficiency that covers at least 90 percent of the area of the opening.

(vii) Equip each unslotted guidepole well with a gasketed sliding cover and a flexible fabric sleeve or wiper.

(viii) Equip each unslotted guidepole with a gasketed cover at the end of the pole. The cover shall be closed at all times, with no visible gaps, except when gauging or sampling.

(ix) Equip each slotted guidepole with a gasketed cover, a pole wiper and a pole sleeve. The pole sleeve shall be extended into the stored liquid.

(x) Equip each slotted guidepole having a pole float with a gasketed cover, a pole wiper, and a pole float wiper. The wiper or seal of the pole float shall be at or above the height of the pole wiper.

(xi) Cover each slotted guidepole opening with a gasketed cover at all times, with no visible gaps, except when the cover must be opened for access.

(xii) Maintain the pole float in a condition such that it floats within the guidepole at all times except when it must be removed for sampling or when the tank is empty.

(xiii) Except for vacuum breakers and rim vents, ensure that each opening in the external floating roof shall provide a projection below the liquid surface.

(xiv) Except for vacuum breakers, rim vents, roof drains, and leg sleeves, equip all other openings in the roof with a gasketed cover or seal which is closed at all times, with no visible

gaps, except when the cover or seal must be opened for access.

(B) No later than July 1, 2003, the operator of an external floating roof tank containing organic liquids having true vapor pressure of less than 3 psia at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 shall equip the tank with a rim seal system meeting the following requirements:

(i) The primary seal shall be a mechanical shoe or liquid mounted.

(ii) The secondary seal shall be rim mounted and shall not be attached to the primary seal.

(iii) Gaps between the tank shell and the primary seal shall not exceed 1.3 centimeters (1/2 inch) for a cumulative length of 30 percent of the circumference of the tank, and 0.32 centimeter (1/8 inch) for 60 percent of the circumference of the tank. No gap between the tank shell and the primary seal shall exceed 3.8 centimeters (1-1/2 inches). No continuous gap between the tank shell and the primary seal greater than 0.32 centimeter (1/8 inch) shall exceed 10 percent of the circumference of the tank.

(iv) Gaps between the tank shell and the secondary seal shall not exceed 0.32 centimeter (1/8 inch) for a cumulative length of 95 percent of the circumference of the tank. No gap between the tank shell and the secondary seal shall exceed 1.3 centimeters (1/2 inch).

(v) Mechanical shoe primary seals shall be installed so that one end of the shoe extends into the stored organic liquid and the other end extends a minimum vertical distance of 61 centimeters (24 inches) above the stored organic liquid surface.

(vi) The geometry of the shoe shall be such that the maximum gap between the shoe and the tank shell is no greater than double the gap allowed by the seal gap criteria specified in clause (d)(1)(B)(iii) for a length of at least 46 centimeters (18 inches) in the vertical plane above the liquid surface.

(vii) The primary seal envelope shall be made available for unobstructed inspection by the Executive Officer along its circumference. In the case of riveted tanks with resilient filled primary seals, at least eight such locations shall be made available; for all other types of seals, at least four such locations shall be made available. If the Executive Officer deems it necessary, further unobstructed inspection of the primary seal may be required to determine the seal's condition along its entire circumference.

(viii) The secondary seal shall be installed in a way that permits the Executive Officer to insert probes up to 3.8 centimeters (1-1/2 inches) in width to measure gaps in the primary seal.

(ix) There shall be no holes, tears or openings in the secondary seal or in the primary seal envelope surrounding the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal.

(x) Except during the preventive maintenance, repair, or inspection periods specified in subdivision (f) and (g) of this rule that do not exceed 72 hours with prior notification to the Executive Officer, both the primary seal and the secondary seal shall cover the annular space between the external floating roof and the wall of the storage tank in a continuous fashion, with no visible gaps.

(xi) The operator shall use a rim seal system that is identified on the current list of seals approved by the Executive Officer. The operator requesting the use of an alternative rim seal system shall submit a written application including emission test results and analysis demonstrating that the alternative rim seal system is better in performance and has a rim seal loss emission factor that is less than or equal to the current design.

(C) No later than July 1, 2003, in lieu of complying with the requirement of no visible gap in subparagraph (d)(1)(A), the operator of an external floating roof tank shall maintain all roof openings in a vapor tight condition at all times except during

preventive maintenance, repair, or inspection periods specified in subdivision (f) and (g) of this rule.

(2) Domed External Floating Roof Tanks

(A) Phase I: The operator at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 shall install domed roofs on all external floating roof tanks that contain organic liquids having true vapor pressure greater than or equal to 3 psia as reported in the Annual Emissions Report pursuant to Rule 301 - Permit Fees for the emission inventory year 2000 according to the following schedule:

(i) At least 1/3 of the tanks subject to this provision by January 1, 2004;

(ii) At least 2/3 of the tanks subject to this provision by January 1, 2006;

(iii) All tanks subject to this provision by January 1, 2008.

(iv) As an alternative to clauses (i) through (iii) above, an operator may submit a compliance plan demonstrating that 75% of the tanks subject to this provision have domes installed by December 31, 2006, and 100% of such tanks shall have domes installed by December 31, 2008. The Executive Officer shall approve any plan which convincingly demonstrates compliance and may impose conditions of approval necessary to assure compliance. The operator shall comply with all provisions and conditions of an approved plan.

(B) Phase II: For additional external floating roof tanks that are not identified under Phase I but contain organic liquids having true vapor pressure greater than or equal to 3 psia as reported in the Annual Emissions Report pursuant to Rule 301 - Permit Fees for any emission inventory year after 2000, the operator who is subject to Phase I shall comply with the requirements specified in subparagraph (d)(2)(A) no later than two years after becoming subject to the rule. In those cases where the two-year period falls within Phase I, the operator shall complete the installation of the domes on all Phase II tanks by no later than January 1, 2010, or December 31, 2010 if choosing to comply with the alternative in

clause (d)(2)(A)(iv). The applicability and compliance verification of waste stream tanks and recovered oil tanks shall be based on a monthly average true vapor pressure greater than or equal to 3 psia. The monthly average true vapor pressure of waste stream shall be determined based on at least one representative sample or multiple samples collected from the top surface layer that is no deeper than 6 inches at a frequency committed to in writing by the affected facility no later than January 1, 2003. The facility shall monitor and keep records of sampling results and monthly average true vapor pressures on site and make them available to the Executive Officer upon request.

(C) In lieu of complying with the requirements in subparagraph (d)(2)(B), the operator who is subject to Phase I shall accept permit conditions to limit the true vapor pressure of the organic liquids stored in the tanks to lower than 3 psia by the end of Phase I.

(D) The operator of a domed external floating roof tank shall equip and maintain all roof openings in accordance with the specifications listed in subparagraph (d)(1)(A) by the applicable compliance date in subparagraph (d)(2)(A) and (d)(2)(B).

(E) The operator of a domed external floating roof tank shall equip the tank with a rim seal system consisting of a primary and a secondary seal meeting the specifications listed in subparagraph (d)(1)(B) by the applicable compliance date in subparagraphs (d)(2)(A) and (d)(2)(B).

(F) The operator shall ensure that the concentration of organic vapor in the vapor space above a domed external floating roof shall not exceed 30 percent of its lower explosive limit (LEL) by the applicable compliance date in subparagraph (d)(2)(A) and (d)(2)(B).

(G) The operator shall submit to the Executive Officer an annual status report including at a minimum all of the following:

(i) A list of all external floating roof tanks subject to the requirement in subparagraphs (d)(2)(A) and (d)(2)(B);

(ii) A general description of each tank including information such as tank identification, District permit number or District device identification, tank type, tank capacity, type

of liquid stored, and if applicable, number of representative samples, frequency of sampling, averaging method used to determine the monthly average true vapor pressure of waste stream or recovered oil tanks, and the results.

(iii) A compliance status for each tank; and

(iv) An estimated compliance date for each external floating roof tank that is not yet in compliance with the requirement in subparagraph (d)(2)(A) and (d)(2)(B).

(3) Internal Floating Roof Tanks

When an internal floating roof tank is scheduled for emptying and degassing, but no later than January 1, 2007, the operator of an internal floating roof tank at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 shall:

(A) Equip each fixed roof support column and well with a sliding cover that is gasketed or with flexible fabric sleeves;

(B) Equip each ladder well with a gasketed cover. The cover shall be closed at all times, with no visible gaps, except when the well must be opened for access;

(C) Equip and maintain other roof openings according to the specifications listed in subparagraph (d)(1)(A) or (d)(1)(C);

(D) Equip the tank with a rim seal system consisting of either a primary seal, or a primary and a secondary seal meeting the specifications listed in subparagraph (d)(1)(B), with the exception of a mechanical shoe primary seal which shall have one end extend a minimum vertical distance of 15 centimeters (6 inches) above the liquid surface and the other end extend into the liquid a minimum of 10 centimeters (4 inches); and

(E) Ensure that the concentration of organic vapor in the vapor space above the internal floating roof shall not exceed 50 percent of its lower explosive limit (LEL) for those installed prior to June 1, 1984 and 30 percent of its LEL for those installed after June 1, 1984.

(4) Fixed Roof Tanks

(A) No later than January 1, 2007, the operator of a fixed roof tank at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 shall equip

each fixed roof tank containing organic liquids with true vapor pressure greater than 0.1 psia with an emission control system meeting the following requirements:

(i) The tank emissions are vented to an emission control system with an overall control efficiency of at least 95% by weight or the tank emissions are vented to a fuel gas system.

(ii) Any tank gauging or sampling device on a tank shall be equipped with a vapor tight cover which shall be closed at all times, with no visible gaps, except during gauging or sampling. The roof of such tank shall be properly maintained in a vapor tight condition with no holes, tears or uncovered opening.

(iii) All openings on the roof shall be properly installed and maintained in a vapor tight condition at all times.

(iv) The operator shall equip each fixed roof tank with pressure-vacuum vents that shall be set to the lesser of 10% below the maximum allowable working pressure of the roof or 0.5 psig.

(v) The operator shall maintain pressure-vacuum vents in a vapor tight condition at all times except when the operating pressure of the fixed roof tank exceeds the manufacturer's recommended setting.

(B) In lieu of complying with the requirement in subparagraph (d)(4)(A), the operator may choose to convert the fixed roof tank to an external floating roof tank or an internal floating roof tank meeting the requirements specified in paragraph (d)(1) or (d)(3).

(5) The operator of any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for any emission inventory year subsequent to 2000 reporting pursuant to Rule 301 – Permit Fees shall:

(A) Comply with the requirements for external floating roof tanks specified in paragraph (d)(1) no later than one year after becoming subject to this rule.

(B) Comply with the requirements for domed external floating roof tanks specified in paragraph (d)(2) no later than six years after becoming subject to this rule. Any external floating roof tank that

later becomes subject to this requirement based on any subsequent emission inventory year, shall comply with the requirements in paragraph (d)(2) no later than two years after becoming subject to this rule.

(C) Comply with the requirements for internal floating roof tanks specified in paragraph (d)(3) when the tanks are scheduled for emptying and degassing, but no later than five years after becoming subject to this rule.

(D) Comply with the requirements for fixed roof tanks specified in paragraph (d)(4) no later than five years after becoming subject to this rule.

(6) The operator of all tanks for which a permit to construct and operate has been issued by the Executive Officer on and after January 1, 2002 for new construction shall comply with the requirements of subdivision (d).

(e) Identification Requirements

(1) The operator shall permanently identify all tanks subject to the requirements of this rule by a visible sign that includes the tank number, on the outside wall of the tank for inventory, inspection and record keeping purposes.

(2) The operator shall notify the Executive Officer of any change(s) in tank identification.

(f) Monitoring Requirements

(1) External Floating Roof Tanks

To demonstrate compliance with paragraph (d)(1), the operator shall have a certified person conduct the following in accordance with the procedures and guidelines specified in Attachment A:

(A) Conduct an EPA Method 21 inspection or measure gaps of all roof openings on a semiannual basis and each time the tank is emptied and degassed.

(B) Perform complete gap measurements of the rim seal system on a semiannual basis and each time the tank is emptied and degassed.

(2) Domed External Floating Roof Tanks and Internal Floating Roof Tanks

To demonstrate compliance with paragraph (d)(2) and (d)(3), the operator shall have a certified person conduct the following in accordance with the procedures and guidelines specified in Attachment A:

(A) Visually inspect the rim seal system and roof openings and use an explosimeter to measure the lower explosive limit (LEL) on a semiannual basis.

(B) Perform complete gap measurements of the rim seal system each time the tank is emptied and degassed but no less than once every ten years.

(C) Perform complete gap measurements of all roof openings each time the tank is emptied and degassed but no less than once every ten years.

(3) Fixed Roof Tanks

(A) No later than 180 days after the effective date of the requirements, the operator of a facility who elects to install an emission control system to comply with the requirements in clause (d)(4)(A)(i) shall conduct an initial performance testing to determine the overall efficiency of the emission control system and submit a complete test report to the Executive Officer. The performance testing of the emission control system shall be repeated when the system is modified or an operating parameter is changed in a manner that affects the capture or control efficiency. In such case, the performance test shall be conducted and the test report submitted to the Executive Officer within 180 days after the modification. Subsequent to the initial performance test, the operator shall conduct annual performance tests, and shall monitor and record applicable operating parameters on a weekly basis to ensure that the emission control system is achieving 95% overall control efficiency.

(B) To demonstrate compliance with clause (d)(4)(A)(ii), (d)(4)(A)(iii) and (d)(4)(A)(v), the operator shall have a certified person conduct EPA Method 21 measurements on a quarterly basis.

(C) To demonstrate compliance with clause (d)(4)(A)(iv), the operator shall keep engineering data sheet for pressure-vacuum vents installed after January 1, 2002.

(g) Maintenance Requirements

The operator shall repair, or replace any piping, valves, vents, seals, gaskets, or covers of roof openings that are found to have defects or visible gaps, or are not vapor tight, and do not meet all the requirements of this rule before filling or refilling an emptied and degassed storage tank, or within 72 hours after any operator inspection specified in subdivision (f).

(h) Record Keeping and Reporting Requirements

(1) During the inspections specified subdivision (f), the operator shall keep records of all findings, including but not limited to the readings measured according to EPA Reference Test Method 21.

(2) The operator shall record all inspections of primary, secondary seals, and roof openings on compliance inspection report forms approved by the Executive Officer as described in Attachment A.

(3) The operator shall submit all inspection reports and documents to the Executive Officer semiannually within five working days of completion of the inspections specified in paragraph (f)(1) and (f)(2); and within thirty working days of completion of two consecutive quarterly inspections specified in paragraph (f)(3).

(4) If the operator determines that a tank is in violation of the requirements of this rule during the inspections specified subdivision (f), the operator shall submit a written report to the Executive Officer within 120 hours of the determination of non-compliance, indicating corrective actions taken to achieve compliance.

(5) The operator who elects to install or modify an emission control system to comply with the requirement in clause (d)(4)(A)(i) shall conduct an initial performance test as described in clause (f)(3)(A) and submit a complete test report to the Executive Officer no later than 180 days after the effective date of the requirement for new installation; or 180 days after the modification. Subsequent annual performance test and test report shall be submitted annually within 60 days after the end of each emission inventory year.

(6) The operator shall keep all monitoring, inspection, maintenance, and repair records at the facility for a period of five years and shall make the records available to the Executive Officer upon request.

(i) Test Methods and Procedures

The following test methods and procedures shall be used to determine compliance with this rule. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.

(1) Measurements of gaseous volatile organic compound leaks shall be conducted according to EPA Reference Method 21 using an appropriate analyzer calibrated with methane.

(2) Organic liquids that are stored at ambient temperatures with a true vapor pressure of greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions shall be determined as those with a flash point of less than 100 °F as determined by ASTM Method D-93.

(3) Organic liquids that are stored at above ambient temperatures with a true vapor pressure greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions shall be determined as those whose volume percent evaporated is greater than ten percent at an adjusted temperature T_{Adj} as determined by ASTM Method D-86 of:

$$T_{Adj} = 300\ ^{o}F + T_{l} - T_{a}$$

Where:

T_{l} = Liquid Storage Temperature (^{o}F)

T_{a} = Ambient Temperature (^{o}F) = 70 ^{o}F

(4) Organic liquids with a true vapor pressure of greater than or equal to 3 psia shall be determined by ASTM Method D-323 for Reid vapor pressure and converted to true vapor pressure using applicable nomographs in EPA AP-42 or District and EPA approved nomographs. The actual storage temperature used for determining true vapor pressure shall be 70 degrees Fahrenheit for organic liquids that are stored at ambient temperatures, and actual storage temperature for organic liquids that are stored at above ambient temperatures.

(5) Control efficiency of an emission control system, on a mass emissions basis, and the VOC concentrations in the exhaust gases shall be determined by U.S. EPA Test Methods 25, 25A; District Method 25.1 - Determination of Total Gaseous Non-Methane Organic Emissions as Carbon; or District Method 25.3 – Determination of Low Concentration

Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources, as applicable.

(6) When more than one test method or set of test methods are specified for any testing, the application of these methods to a specific set of test conditions is subject to approval by the Executive Officer. In addition, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(7) The sampling, analysis, and reporting shall be conducted by a laboratory that has been approved under the District Laboratory Approval Program (LAP) for the cited District reference test methods, where LAP approval is available. For District reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one year after the date that the LAP program becomes available for that District reference test method.

(8) Tests to determine emission factors for an alternative control device for rim seal or deck opening shall accurately simulate conditions under which the device will operate, such as wind, temperature, and barometric pressure. Test methods that can be used to perform the testing required in this paragraph include, but are not limited to, the following methods, which shall be performed by a laboratory certified by American Petroleum Institute (API):

(A) API Manual of Petroleum Measurement Standards, Chapter 19, Section 3, Part A, Wind Tunnel Test Method for the Measurement of Deck-Fitting Loss Factors for External Floating-Roof Tanks;

(B) API Manual of Petroleum Measurement Standards, Chapter 19, Section 3, Part B, Air Concentration Test Method for the Measurement of Rim Seal Loss Factors for Floating-Roof Tanks.

(C) API Manual of Petroleum Measurement Standards, Chapter 19, Section 3, Part E; Weight Loss Test Method for the Measurement of Deck-Fitting Loss Factors for Internal Floating-Roof Tanks.

(j) Exemptions

(1) The provisions of this rule shall not apply to pressurized storage tanks designed to operate in excess of 15 pounds per square inch gauge (psig)

without any emissions to the atmosphere except under emergency conditions.

(2) Domed external floating roof tanks installed prior to January 1, 2002 shall be exempt from the requirements of subparagraph (d)(2)(D) and (d)(2)(E) for secondary seals.

(3) Any facility with a facility emission cap equal to or less than 40,000 pounds (20 tons) per year of VOC shall be exempt from the requirements of this rule.

(4) Portable Baker tanks containing organic liquids having true vapor pressures from 0.1 psia to 0.5 psia equipped with carbon canisters to reduce the emissions from the storage tanks to less than 500 ppm outlet concentration shall be exempt from the performance testing requirements specified in clause (d)(4)(A)(i) and subparagraph (f)(3)(A) provided that the operator conducts EPA Reference Method 21 measurement weekly to ensure that the system achieves the emission standard of 500 ppm.

(5) External floating roof tanks having permit conditions that limit the true vapor pressure of the organic liquids stored in the tanks to lower than 3 psia shall be exempt from the requirements of paragraph (d)(2).

(6) External floating roof tanks subject to clause (d)(1)(A)(i) shall be exempt from this requirement until the next time the tank is emptied and degassed, provided that the operator has demonstrated to the satisfaction of the Executive Officer that in order to properly bolt, the covers for access hatches and gauge float wells must be welded. The operator shall use equivalent means, such as clamping, to secure the covers during the interim period.

(7) External floating roof tanks permitted to contain more than 97% by volume crude oil shall be exempt from the doming requirements of paragraph (d)(2)(A) and (d)(2)(B) but shall comply with other remaining applicable requirements of this rule.

ATTACHMENT A

INSPECTION PROCEDURES AND COMPLIANCE REPORT FORMS

Equipment Needed:

Organic Vapor Analyzer (OVA) calibrated with methane in accordance with EPA Test Method 21, explosimeter calibrated with methane (for internal floating roof tanks), liquid resistant measuring tape or device, tank probe (to measure gaps in tank seals - 1/8 inch, 1/2 inch, 1-1/2 inch), flashlight.

Inspection Procedures:

1. The findings of all tank self-inspections, whether completed or not, shall be recorded on the Rule 1178 Compliance Report forms prescribed by the Executive Officer and submitted to the District's Refinery Section in accordance with the rule's requirements. If an inspection is stopped before completion, indicate the reason for this action in the Comments section of the compliance report form.
2. During the compliance inspection, the person(s) conducting the inspection must have a copy of the Permit to Operate or Permit to Construct pertinent to the tank being inspected. Any discrepancies between the permit equipment description and the existing tank or the permit conditions and the actual operating conditions of the tank as verified during inspection must be recorded in the Comments section of the compliance report form.
3. Inspect the ground level periphery of each tank for possible leaks in the tank shell. Complete the tank information section (D) on the report.
4. For external floating roof tanks:
    - o From the platform, conduct an overall visual inspection of the roof and check for obvious permit or rule violations. Record the information as shown under section F of the compliance report form.
    - o During visual inspection of the roof, check for unsealed roof legs, open hatches, open emergency roof drains or vacuum breakers and record the findings on the report accordingly. Indicate presence of any tears in the fabric of both seals.
    - o Conduct an inspection of the roof fittings for vapor tight condition and record any leaks above 500 ppm in the fugitive emissions tank report OR conduct an inspection of the roof fittings using the 1/8" probes.

- o Conduct an inspection of the entire secondary seal using the 1/8" and 1/2" probes. Record the gap data in section F(4) of the report.
- o Conduct an inspection of the entire primary seal using the 1/8", 1/2", and 1-1/2" probes. Inspect the primary seal by holding back the secondary seal. Record the gap data in section F(5) of the report.
- o Record all cumulative gaps between 1/8 inch and 1/2 inch; between 1/2 inch and 1-1/2 inch; and in excess of 1-1/2 inches, for both primary and secondary seals in section G of the report. Secondary seal gaps greater than 1/2 inch should be measured for length and width, and recorded in Comments under section (J) of the report.

5. For internal floating roof and domed tanks:
   - o Using an explosimeter, measure the concentration of the vapor space above the internal floating roof in terms of lower explosive limit (LEL), and record the reading in section (E) of the report.
   - o Conduct a visual inspection of the roof openings and the secondary seal, if applicable, and record findings on the report .
   - o Conduct gap measurements of the rim seal system and roof openings each time the tank is emptied and degassed but no less than once every ten years.

6. For fixed roof tanks:
   - o Conduct an inspection of the pressure relief valves, piping, valves and fittings located on the roof for vapor tight condition and record any readings in excess of 500 ppm in the fugitive emissions tank report.

7. Complete all necessary calculations and record all required data accordingly on the report.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
RULE 1178 COMPLIANCE REPORT

PLEASE COMPLETE FORM LEGIBLY IN BLACK INK

Tank No. _____ SCAQMD Permit No. _____ Inspection Date _____ Time _____

Is This a Follow-up Inspection? No ☐ Yes ☐ If yes, Date of Previous Inspection _____

A. COMPANY INFORMATION:

Company Name _____

Location Address _____ City _____ Zip _____

Mailing Address _____ City _____ Zip _____

Contact Person _____ Title _____

Phone _____

B. INSPECTION CONDUCTED BY:

Name _____ Title _____

Company Name _____ Phone _____

Mailing Address _____ City _____ Zip _____

C. TANK INFORMATION:

Capacity _____ (bbls) Installation Date _____ Tank Diameter _____ (ft) Tank Height _____ (ft)

Product Type _____ Product RVP _____

Type of Tank: Riveted ☐ Welded ☐ Other ☐ (describe) _____

Color of Shell _____ Color of Roof _____

Roof Type: Pontoon ☐ Double Deck ☐ Other(describe) _____

External floating roof ☐ Internal floating roof or domed tank ☐

D. GROUND LEVEL INSPECTION:

1) Product Temperature _____ ° F 2) Product level _____ (ft)

3) List type and location of leaks found in tank shell.

_____

4) List any discrepancies between the existing equipment and the equipment description on the Permit.

_____

5) Is tank in compliance with Permit conditions? No ☐ Yes ☐ If no, explain _____

_____

_____

E. INTERNAL FLOATING ROOF OR DOMED TANK:

1) Check vapor space between floating roof and fixed roof with explosimeter. _____ % LEL

2) Conduct visual inspection of roofs and secondary seals, if applicable.

3) Are all roof openings covered? No ☐ Yes ☐ If no, explain in Comments section (J) and proceed to part (H)(6).

F. EXTERNAL FLOATING ROOF TANK (or DOMED TANK AND INTERNAL FLOATING ROOF TANK when needed)

1) On the diagram (below) indicate the location of the ladder, roof drain(s), anti-rotation device(s), platform, gauge well, and vents or other appurtenances. *Note information in relation to North (to the top of the worksheet).*

2) Describe any uncovered openings found on the roof in the Comments section (J). (Refer to Rule 463(a)(1)(F)):

3) Identify any tears in the seal fabric. Describe and indicate on diagram (below):

4) Secondary Seal Inspection

a) Type of Secondary Seal: _____

b) Does 1/2" probe drop past seal? No ☐ Yes ☐ if yes, measure length(s) and show on diagram

c) Does 1/8" probe drop past seal? No ☐ Yes ☐ if yes, measure length(s) and show on diagram.

d) Record dimensions of gap for gaps > 1/8" _____ >1/2" _____

NOTE: Record the actual width and cumulative length of gaps in feet and inches.

(Do not include gaps > 1/2" in 1/8" measurements)

5) Primary Seal Inspection

a) Type of Primary Seal: ☐ Shoe; ☐ Tube; ☐ Other _____

b) (shoe seal) does 1-1/2" probe drop past seal? No ☐ Yes ☐; if yes, measure length(s) and show on diagram.

c) (shoe seal) does 1/2" probe drop past seal? No ☐; Yes ☐; if yes, measure length(s) and show on diagram.

d) (tube seal) does 1/2" probe drop past seal? No ☐ Yes ☐ if yes, measure length(s) and show on diagram.

e) (all seal types) does 1/8" probe drop past seal? No ☐ Yes ☐ if yes, measure (length(s) and show on diagram.

f) Record dimensions of gaps for gaps >1/8" _____ > 1/2" _____

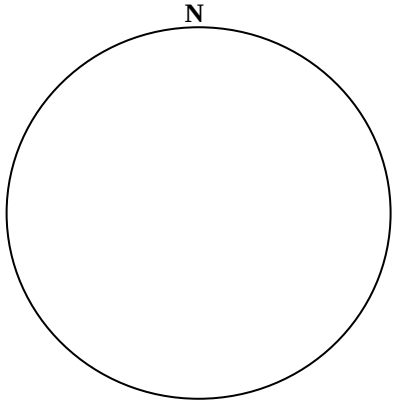
>1-1/2" _____ *NOTE: Record the actual width and cumulative length of gaps in feet and inches.*

(Do not include gaps > 1/2" in 1/8" measurements, or gaps > 1-1/2" in 1/2" measurements)

6) Deck Fitting Inspection

(circle one) does 1/8" probe drop past gasket seal or pass Method 21? No ☐ Yes ☐ if yes, identify

NOTE: Show defects using symbols. Show seal gaps and lengths.



LEGEND:

Equipment:

	Antirotational device
	Gauge well
⊤	Leg stand
	Roof drain
*	Emergency roof drain
∞	Vacuum breaker
	Vent
	Platform & ladder

Defects:

	Leg top
╫	Leg pin
	Open hatch
\/\	Torn seal
|-P-|	Primary seal gap
|-S-|	Secondary seal gap

Tank No. _____ SCAQMD Permit No. _____

IF INTERNAL FLOATING ROOF OR DOMED TANK, PROCEED TO PART H(6) WHEN APPROPRIATE:

G. CALCULATIONS - complete all applicable portions of the following:

Record dimensions of indicated gaps [from F(4)(d), F(5)(b), and F(5)(f)]. Record in feet and inches.

Gaps in primary seal between 1/8 and 1/2 inch: _____

Gaps in primary seal between 1/2 and 1-1/2 inch: _____

Gaps in primary seal greater than 1-1/2 inches: _____

Gaps in secondary seal between 1/8 and 1/2 inch: _____

Gaps in secondary seal greater than 1/2 inch: _____

Multiply diameter (ft) of tank to determine appropriate gap limits:

5% circumference = diameter X 0.157 = _____ 60% circ. = diam. X 1.88 = _____

10% circumference = diameter X 0.314 = _____ 90% circ. = diam. X 2.83 = _____

30% circumference = diameter X 0.942 = _____ 95% circ. = diam. X 2.98 = _____

H. DETERMINE COMPLIANCE STATUS OF TANK:

1)	Were any openings found on the roof?		No ☐	Yes ☐
2)	Were any tears in the seals found:		No ☐	Yes ☐
3)	Is the product level lower than the level at which the roof would be floating?		No ☐	Yes ☐
4)	Secondary Seal:			
		Did 1/2" probe drop between shell and seal?	No ☐	Yes ☐
		Did cumulative 1/8" - 1/2" gap exceed 95% circumference length?	No ☐	Yes ☐
5)	Primary Seal			
	Shoe	Did 1-1/2" probe drop between shell and seal?	No ☐	Yes ☐
		Did cumulative 1/2" - 1-1/2" gap exceed 30% circumference length, and		
		Did cumulative 1/8 - 1/2" gap exceed 60% circumference length?	No ☐	Yes ☐
		Did any <u>single continuous</u> 1/8" - 1-1/2" gap exceed 10% circ. length?	No ☐	Yes ☐
	Tube	Did 1/2" probe drop between shell and seal	No ☐	Yes ☐
		Did cumulative 1/8" - 1/2" gap exceed 95% circumference length?	No ☐	Yes ☐
6)	Internal floating roof (installed before 6/1/84) did LEL exceed 50%		No ☐	Yes ☐
		(installed after 6/1/84) or domed tank did LEL exceed 30%?	No ☐	Yes ☐
7)	Does tank have permit conditions?		No ☐	Yes ☐
		Does tank comply with these conditions?	No ☐	Yes ☐

I. IF INSPECTION WAS TERMINATED PRIOR TO COMPLETION FOR ANY REASON, PLEASE EXPLAIN:

_____

_____

J. **COMMENTS:**

Use this section to complete answers to above listed items and to describe repairs made to the tank; include date and time repairs were made.

K. ***I(We) certify the foregoing information to be correct and complete to the best of my(our) knowledge.***

Inspection completed by: _____ Date: _____
(signature) (Certification ID #)

Compliance status by: _____ Date: _____
(signature) (Certification ID #)

Company Representative: _____ Date: _____
(signature) (Certification ID #)

SEND COMPLETED REPORT (both sheets) TO:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 E. Copley Drive
Diamond Bar, CA. 91765 FAX: (909)396 -3341
Attn: Rule 1178 Supervising Inspector

FOR SCAQMD USE ONLY: Date received_____

Reviewed by:_____ Date reviewed_____
(signature) (Certification ID #)

Tank Status: [ ] in compliance [ ] in violation, Rule(s)_____
Comments:_____

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765
(909) 396-2000

RULE 1178 FUGITIVE EMISSIONS TANK REPORT

Company Information							
Company Name							
Address							
Contact/Phone Number							
SCAQMD ID #				Report Date			
Tank ID	**Type**	**Fitting**	**Date**	**Leak Rate**	**Type of Repair**	**Date**	**Post Repair Leak Rate**

9/14/92

(Adopted June 7, 1991)(Amended March 6, 1992)

RULE 1179. PUBLICLY OWNED TREATMENT WORKS OPERATIONS

(a) Applicability

This rule applies to all existing Publicly Owned Treatment Works (POTWs).

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) EXEMPT COMPOUNDS are any of the following compounds:

(A) Group I (General)

chlorodifluoromethane (HCFC-22)
dichlorotrifluoroethane (HCFC-123)
tetrafluoroethane (HFC-134a)
dichlorofluoroethane (HCFC-141b)
chlorodifluoroethane (HCFC-142b)

(B) Group II (Under Review)

methylene chloride
1,1,1-trichloroethane (methyl chloroform)
trifluoromethane (FC-23)
trichlorotrifluoroethane (CFC-113)
dichlorodifluoromethane (CFC-12)
trichlorofluoromethane (CFC-11)
dichlorotetrafluoroethane (CFC-114)
chloropentafluoroethane (CFC-115)

(2) LARGE-CAPACITY POTWs are Publicly Owned Treatment Works that have a design capacity of 10 million gallons per day, or greater.

(3) ODOR is a characteristic of a substance that is detectable by the human olfactory organs and may contribute to a public nuisance.

(4) ODOROUS EMISSIONS are odor parameters measured by dynamic dilution olfactometry and odor panels. Odor emissions are expressed as dilution-to-thresholds ratios or odor concentration units.

(5) PUBLICLY OWNED TREATMENT WORKS (POTWs) are wastewater treatment or reclamation plants owned or operated by a public entity, including all operations within the boundaries of the wastewater and sludge treatment plant.

(6) SMALL-CAPACITY POTWs are Publicly Owned Treatment Works that have a design capacity of less than 10 million gallons per day.

(7) VOLATILE ORGANIC COMPOUND (VOC) is any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, carbonates, methane, and the exempt compounds.

(c) Requirements for Large-Capacity POTWs

(1) On or before June 1, 1992, the operator of each POTW shall submit an Emissions Inventory Plan to the Executive Officer for approval. The Emissions Inventory Plan shall:

(A) Include and specify the procedures, source test protocols, methods of analysis, and combustion source test data, where available, that will be used to quantify VOC and odorous emissions as part of a facility-wide VOC Emissions Inventory Report and Odor Evaluation Report, respectively.

(B) Include a description, the name, the operating agency, and the exact location of the facility.

(C) Provide the plant parameters, including, but not limited to, the plant design capacity, the operating capacity, projected capacity, the diurnal and seasonal flow profiles, and a list identifying and quantifying the unit processes and operations used at the facility.

(D) Provide a detailed description of the service area, including the geographic location of the service area boundary in terms of Universal Transverse Mercator (UTM) coordinates, and a plot plan of the main sewer and interceptor lines.

(E) Provide the disaggregated population estimates for service area from the 1991 Air Quality Management Plan, and the projected service population for the years 1995, 2000, 2005, and 2010. Provide the methodology used to project plant flow from population data.

(2) The operator of each POTW shall, within 180 days of approval of the Emissions Inventory Plan, implement the Emissions Inventory Plan as approved by the Executive Officer, and shall submit to the District a

facility-wide VOC Emissions Inventory Report. The facility-wide VOC Emissions Inventory Report shall:

(A) Provide separate, quantitative measurements of the controlled and uncontrolled VOC emissions for each unit process and unit operation at the POTW, except for combustion processes or sources.

(B) Provide a quantitative estimate of the total facility-wide VOC emissions, including the VOC emissions resulting from combustion processes or sources.

(3) The operators of each POTW shall, within 180 days of approval of the Emissions Inventory Plan, prepare and submit to the District an Odor Evaluation Report based on the approved Emissions Inventory Plan. The Odor Evaluation Report shall:

(A) Provide quantitative measurements of the controlled and uncontrolled odorous emissions for each unit process and unit operation at the POTW.

(B) Identify all existing and potential sources of odorous emissions, and specify the likely physical and biological conditions leading to the generation of odorous emissions.

(C) Provide the facility's equipment and process breakdown history for the past two years that have led to odor complaints, and the total number of odor-related citizen complaints received for the past two years.

(D) Recommend any processes, procedures, or operations for facility-wide odorous emissions abatement or elimination.

(d) Requirements for Small-Capacity POTWs

(1) On or before July 1, 1992, the operators of each POTW shall submit a Facility Description Report to the District. The Facility Description Report shall:

(A) Include a description, the name, the operating agency, and the exact location of the facility.

(B) Provide the plant parameters, including, but not limited to, the plant design capacity, the operating capacity, the projected

capacity, the diurnal and seasonal flow profiles, and a list identifying and quantifying the unit processes and operations used at the facility.

(C) Provide a detailed description of the service area, including the geographic location of the service area boundary in terms of Universal Transverse Mercator (UTM) coordinates, and a plot plan of the main sewer and interceptor lines.

(D) Provide the disaggregated population estimates for service area from the 1991 Air Quality Management Plan, and the projected service population for the years 1995, 2000, 2005, and 2010. Provide the methodology used to project plant flow from population data.

(2) On or before January 1, 1993, the operators of each POTW shall submit a wastewater analysis report that provides the mass rate of VOCs present in the influent and effluent wastewater. The analysis shall include measurements for average and peak flow rates.

(e) Joint VOC Emissions Testing

Except for headworks and grit chambers for all large-capacity POTWs, and sedimentation tanks and activated sludge systems for POTWs with a design capacity of 50 million gallons per day or greater, joint VOC emissions testing of unit processes and unit operations may be conducted by two or more of the large-capacity POTWs provided the following conditions are met:

(1) A written request for joint VOC emissions testing is incorporated in the Emissions Inventory Plan required by paragraph (c)(1), including detailed protocols and program description;

(2) A demonstration is made that emissions estimates derived for each unit process or unit operation will be representative of emissions from this type of unit process or unit operation at any of the POTWs involved in the joint VOC testing program;

(3) That emissions estimates developed under joint VOC emissions testing be correlated against wastewater parameters and other POTW emissions data for the same unit process or unit operation; and

(4) That written approval from the Executive Officer is granted.

(f) Exemptions

Odorous emissions resulting from combustion sources are exempt from the requirements of subparagraphs (c)(1)(A) and (c)(3)(A).

(Adopted February 14, 1997)(Amended December 11, 1998)
(Amended September 10, 1999)(Amended April 2, 2004)
(Amended July 11, 2008)

RULE 1186. PM_{10} EMISSIONS FROM PAVED AND UNPAVED ROADS, AND LIVESTOCK OPERATIONS

(a) Purpose

The purpose of this rule is to reduce the amount of particulate matter entrained in the ambient air as a result of vehicular travel on paved and unpaved public roads, and at livestock operations.

(b) Applicability

The provisions of this rule shall apply to specified land uses and activities conducted within the South Coast Air Quality Management District which result in fugitive dust.

(c) Definitions

(1) AVERAGE DAILY TRIPS (ADT) means the average number of vehicles that cross a given surface during a specified 24-hour time period as determined by the most recent Institute of Transportation Engineers trip generation manual, tube counts, or observations.

(2) CERTIFIED STREET SWEEPER is a sweeper that has been certified by the District as meeting the Rule 1186 sweeper certification procedures and requirements for PM_{10}-efficient sweepers.

(3) CHEMICAL STABILIZERS mean any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(4) CHEMICAL STABILIZATION means a method of dust control implemented by a person to mitigate fugitive dust and corresponding PM_{10} emissions which involves the use of non-toxic chemical stabilizers in sufficient quantities to maintain a stabilized surface.

(5) CONTRACT DATE is the date the contract has been signed by both parties but no earlier than 6 months before sweeping begins. Renewals of sweeping contracts are considered new contracts.

(6) DISTRICT'S TEST PROTOCOL: RULE 1186 CERTIFIED STREET SWEEPER COMPLIANCE TESTING means the reference test method contained in Appendix A, or hereafter approved by the Executive Officer and the U.S. Environmental Protection Agency to be an equivalent method.

(7) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(8) ESSENTIAL PUBLIC SERVICES are sewage treatment facilities, prisons, police facilities, fire fighting facilities, schools, hospitals, landfills, and water delivery operations.

(9) FEED LANE ACCESS AREAS are roads providing access from the feed preparation areas to and including feed lane areas at a livestock operation. These access roads are typically used to distribute feed from feed trucks to the animals.

(10) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of man.

(11) INDEPENDENT TESTING FACILITY (OR LABORATORY) means a testing facility that meets the requirements of District Rule 304, subdivision (k) and is approved by the District to conduct certification testing under the District's Test Protocol: RULE 1186 Certified Street Sweeper Compliance Testing.

(12) LIVESTOCK OPERATIONS means any operation directly related to the raising of more than 50 animals for the primary purpose of making a profit or for a livelihood.

(13) OWNER/OPERATOR is any person who owns, leases, or operates a land use or activity subject to the requirements of this rule.

(14) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any

other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(15) PM_{10} is particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(16) PURCHASE OR LEASE DATE is the date the purchase or lease contract for delivery of sweeping equipment has been signed by both parties. Renewals of leasing contracts are considered new leases.

(17) ROUTINE STREET SWEEPING is street sweeping performed by local governments or their contractors at least once every three months for a given paved road.

(18) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(19) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust.

(20) STREET CLEANING means the removal of post-event visible roadway accumulations using street sweeping equipment, front end loaders, haul vehicles, manual shoveling, street flushing, or any other methods determined effective by the responsible agency.

(21) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt or any other material of equivalent performance as determined by the Executive Officer, the California Air Resources Board, and the U.S. EPA.

(22) UNPAVED ACCESS CONNECTIONS means any unpaved road connection with a paved public road.

(23) UNPAVED ALLEY means any roadway not exceeding 25 feet in width, which is primarily used for access to the rear or side entrances of abutting property, and that is not covered by typical roadway materials.

(24) UNPAVED ROADS are any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved

roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all unpaved roadways not defined as public. This definition excludes horse trails, hiking paths, bicycle paths, or other similar pathways used exclusively for purposes other than travel by motorized vehicles.

(25) VISIBLE ROADWAY ACCUMULATIONS means the deposit of particulate matter onto paved roads as a result of wind or water erosion, haul vehicle spillage, or any other event excluding vehicular track-out, which results in the accumulation of visible roadway dust covering a contiguous area in excess of 200 square feet.

(26) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(d) Requirements

Paved Roads

(1) Any owner or operator of a paved public road on which there is visible roadway accumulations shall begin removal of such material through street cleaning within 72 hours of any notification of the accumulation and shall completely remove such material as soon as feasible. If removal cannot be completed within 10 days of notification, the owner/operator shall notify the Executive Officer and provide information on the location of the accumulation(s) and estimated removal completion date.

(2) Any government or government agency which contracts to acquire street sweeping equipment or street sweeping services for routine street sweeping on public roads that it owns and/or maintains, shall acquire or use only certified street sweeping equipment.

(3) Any government or government agency subject to the requirements of paragraph (d)(2) and/or its contractors shall operate and maintain the certified street sweeping equipment in accordance with the manufacturer's specifications. The use of parts determined by the Executive Officer to be substantially similar under the provisions of paragraph (f)(4) shall not be deemed a violation of this subparagraph.

(4) Beginning January 1, 2006, any owner or operator of a public or private paved road shall construct, or require to be constructed, all new or widened paved roads in accordance with the American Association of State Highway and Transportation Officials (AASHTO) guidelines or the applicable equivalent

locally adopted guidelines for curbing, width of shoulders, and medians as specified below:

(A) New construction or widening of paved roads with projected average daily trips of 500 vehicles or more shall be constructed with curbs or as an alternative paved outside shoulders using typical roadway materials and having the following minimum widths:

Average Daily Trips	Minimum Shoulder Width
500 - 3,000	4 feet
3,000 or greater	8 feet

(B) New construction or widening of paved roads with medians and projected average daily trips of 500 vehicles or more shall pave the median area with typical roadway materials unless:

(i) the speed limits are set at or below 45 miles per hour; or

(ii) the medians are landscaped and maintained with grass or other vegetative ground cover and are surrounded by curbing; or

(iii) the medians are treated with chemical stabilizers in sufficient quantity and frequency to establish a stabilized surface and are surrounded by curbing.

Unpaved Roads

(5) Any owner or operator of an unpaved public road in the South Coast Air Basin shall annually treat unpaved roads that have greater than the average ADT of all unpaved roads in its jurisdiction (as determined by the owner/operator) beginning January 1, 1998 and each of the 8 calendar years thereafter by either:

(A) Paving at least 1 mile of such roads using typical roadway materials; or

(B) Applying chemical stabilization to 2 miles of such roads in sufficient quantities to maintain a stabilized surface; or

(C) Taking one or more of the following actions on 3 miles of such roads:

(i) Installing signage at 1/4 mile intervals that prohibits vehicular speeds in excess of 15 miles per hour (mph) as authorized by California Vehicle Code section 22365 and/or

(ii) Installing speed control devices (e.g., speed bumps) every 500 feet and/or

(iii) Maintaining the roadway in such a manner that inhibits vehicular speeds in excess of 15 mph.

(Note: Treatment in excess of the annual requirement can be credited toward future year requirements.)

Livestock Operations

(6) Any owner or operator of a livestock operation shall cease all hay grinding activities between 2:00 and 5:00 p.m. each day, if visible emissions extend more than 50 feet from a hay grinding source.

(7) Any owner or operator of a livestock operation shall treat all unpaved access connections and unpaved feed lane access areas with either pavement, gravel (maintained to a depth of four inches), or asphaltic road-base no later than January 1, 1998.

(e) Street Sweeper Testing and Certification Procedures

(1) Any manufacturer seeking certification of street sweeping equipment as a certified street sweeper shall utilize the following procedures;

(A) The manufacturer shall submit a signed and dated certification request to the Executive Officer, and attest to the accuracy of all statements therein, that shall include:

(i) the name and address of the manufacturer, the brand name, the model number, and a complete description of the sweeper's dust collection and suppression system by submitting all of the information in paragraph (f)(2); and

(ii) confirmation that the specific sweeper configuration to be certified has been tested in accordance with District's Test Protocol: Rule 1186 Certified Street Sweeper Compliance Testing by an independent test facility or laboratory, and that test results demonstrate that the sweeper meets the Rule 1186 sweeper certification limits specified in paragraph (e)(2).

(B) Manufacturers of certified street sweeping equipment may submit a certification request for additional equipment that has substantially similar material collection and dust suppression system(s) as equipment that was certified under the provisions of paragraph (e)(2), by providing the information specified in clause (e)(1)(A)(i). If the Executive Officer determines that the information submitted by the manufacturers in

support of an equivalency determination and previous certification test results are sufficient to certify the additional equipment, the Executive Officer will approve the request.

(2) The Executive Officer will certify street sweeping equipment provided such equipment meets the following conditions based on a single certification test:

(A) The pick-up efficiency, as defined in the District's Test Protocol: Rule 1186 Certified Street Sweeper Compliance Testing, is greater or equal to 80 percent; and

(B) The normalized mass of entrained PM_{10}, as defined by District's Test Protocol: Rule 1186 Certified Street Sweeper Compliance Testing, is less than or equal to 200 mg/m.

(f) Street Sweeper Performance Characteristics

(1) Any manufacturer of a street sweeper that has previously been certified under the provisions of subdivision (e) shall, no later than November 11, 2008, submit to the Executive Officer a complete description of the dust collection and suppression systems of the equipment as configured during the certification testing or as otherwise certified under the provisions of subparagraph (e)(1)(B).

(2) The description of the dust collection and suppression systems required under paragraph (f)(1) shall, at a minimum, consist of the following:

(A) Dust collection

(i) Gutter broom

(I) material composition;

(II) bristle count and weight;

(III) tensile strength expressed as pounds per square inch (PSI); and

(IV) dimensions including length, thickness, and width.

(ii) Main pickup broom (if part of the original certified street sweeper)

(I) material composition and pounds of fiber per broom;

(II) tensile strength expressed as PSI; and

(III) dimensions including length, thickness, and width.

(iii) Blower/Vacuum system (if part of the original certified street sweeper)

(I) horsepower; and

(II) drive type.

(B) Dust suppression

(i) Water suppression

(I) schematic drawing showing water nozzle locations and orifice nozzle sizes; and

(II) minimum system relief valve setting for water pump expressed as pounds per square inch (PSI).

(ii) Filter-based suppression

(I) filter media type and surface area; and

(II) filtration cleansing system, including mechanism and frequency.

(3) Any manufacturer of street sweeping equipment shall notify the Executive Officer through submission of a plan regarding any change to a part specification or part supplier submitted pursuant to paragraph (f)(2). Street sweeping manufacturers shall be required to submit sufficient specifications and other data as determined by the Executive Officer to demonstrate that the equipment performance has not been affected by the change of a part specification or part supplier prior to the continued distribution of equipment as a certified street sweeper. In the event the Executive Officer determines that the certification of performance is not maintained, the manufacturer shall lose equipment certification for the specific street sweeper.

(4) Any street sweeper parts supplier may sell parts to an entity required to procure certified street sweeping equipment provided that:

(A) such parts were installed on equipment that was certified under the provisions of subdivision (e). Documentation that a given part was on a street sweeper during certification testing must be submitted to the Executive Officer as a plan and must include the following:

(i) Invoices from the parts supplier to the manufacturer, or

(ii) Contractual agreements between the parts supplier to the manufacturer, or

(iii) Any other documentation that the Executive Officers deems sufficient to demonstrate that a given part was on a piece of equipment that was previously certified; or

(B) the supplier submits a plan that demonstrates to the satisfaction of the Executive Officer that the replacement part is substantially similar to the original equipment manufacturer part.

(5) Any person subject to the plan submittal requirements under paragraphs (f)(3) or (f)(4) shall be assessed applicable filing and evaluation fees pursuant to Rule 306 (Plan Fees).

(6) Any plan submitted under the requirements under paragraphs (f)(3) or (f)(4) shall be either approved, conditionally approved or disapproved in writing by the Executive Officer within 120 days of the receipt of a complete plan.

(g) Recordkeeping

(1) Any person subject to paragraph (d)(3) shall maintain operational and maintenance records demonstrating compliance with paragraph (d)(3). Such records for the previous two years of operation (or total period of operation, if less than two years) must be made available to the Executive Officer upon request.

(2) Any person subject to paragraph (d)(5) shall maintain records that document compliance with the requirements specified in paragraph (d)(5). Such records must be updated annually and must be made available to the Executive Officer upon request.

(h) Exemptions

(1) The provisions of this rule shall not apply to essential public services that are in compliance with District Rule 403 (Fugitive Dust).

(2) The provisions of paragraph (d)(1) shall not apply to:

(A) visible roadway accumulations that occur on roads with fewer than 500 average daily trips.

(B) paved roads that have been closed until such time that the road is again opened to vehicular activity.

(C) events of such magnitude that a State of Emergency has been declared by the Governor, provided that removal of visible roadway accumulations associated with such events are initiated and completed as soon as feasible.

(3) The provisions of paragraph (d)(5) shall not apply to:

(A) any unpaved road 3,000 feet above mean sea level with fewer than 500 ADT.

(B) any unpaved road used for emergency fire or flood protection or emergency maintenance of essential service utilities to provide electricity, natural gas, telephone, water, and sewer.

(C) any unpaved public road where public access is prohibited.

(D) any unpaved alley.

(E) any government agency if it:

(i) notifies the Executive Officer that it has less than 5 miles of unpaved road mileage and implements once at least one of the control strategies identified in either subparagraph (d)(5)(A) or (d)(5)(B) or (d)(5)(C) on the unpaved road mileage with greater than the average ADT (as determined by the owner/operator) by January 1, 2000; or

(ii) notifies the Executive Officer that it has more than 5 but less than 10 miles of unpaved road mileage and implements at least one of the control strategies identified in either subparagraph (d)(5)(A) or (d)(5)(B) or (d)(5)(C) on unpaved roads with greater than the average ADT (as determined by the owner/operator) in each three year period beginning January 1, 1998 (with final treatments completed by December 31, 2005); or

(iii) notifies the Executive Officer that all of its remaining unpaved roads have 20 ADT or less (as determined by the owner/operator).

(4) The provisions of paragraphs (d)(6) and (d)(7) shall not apply to livestock operations whose contiguous bounded areas do not exceed ten acres.

(5) The provisions of subparagraph (d)(4)(A) shall not apply to unpaved road shoulders provided that the area extending eight feet from the outside edge of the pavement is landscaped and maintained with grass or other vegetative ground cover.

(i) Alternative Control Options

In lieu of complying with the provisions of paragraphs (d)(5) and (d)(7), a person may submit for approval by the Executive Officer and the U.S. Environmental Protection Agency a plan for achieving equivalent emissions reductions through alternative control measures.

7/26/00

(Adopted January 21, 2000)

RULE 1189. EMISSIONS FROM HYDROGEN PLANT PROCESS VENTS

(a) Purpose and Applicability

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs) from hydrogen plant process vents. The rule applies to all hydrogen plants that produce any hydrogen for use in petroleum refining operations.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) EXISTING HYDROGEN PLANT is a hydrogen plant that is not a new or reconstructed hydrogen plant.

(2) HYDROGEN PLANT is a facility that produces hydrogen with steam hydrocarbon reforming, partial oxidation of hydrocarbons, or other processes. Hydrogen plants include steam reforming or hydrogen generation reactors, shift conversion reactors, gas purification or separation units, condensate deaerators or degassifiers, steam generators, direct or indirect contact cooling systems, and their associated systems including the units used to recover carbon dioxide from the vent gas. Hydrogen plants do not include refinery process units, such as catalytic reforming and isomerization units, where hydrogen is produced as a byproduct, provided that all gaseous streams are vented to closed systems except for safety relief devices.

(3) NEW OR RECONSTRUCTED HYDROGEN PLANT is a hydrogen plant for which a permit to construct is issued or, if construction has not begun, an extension to the permit to construct is granted on or after January 21, 2000. A hydrogen plant shall be considered as "reconstructed" if the fixed capital cost of the alteration exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new plant.

(4) PETROLEUM REFINING is a process by which gasoline, kerosene, distillate fuel oils, residual fuel oils, or lubricants are produced, through fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking or other processes, as defined in the Standard Industrial Classification Manual as Industry No. 2911, Petroleum Refining.

(5) PROCESS VENT is an opening where a gas stream is continuously or periodically discharged during normal operation of a hydrogen plant. Process vents include openings where gas streams are discharged directly to the atmosphere, or are discharged to the atmosphere after being routed to a control device or a product recovery device. Process vents do not include any exhaust stack from a process heater or furnace to which a hydrogen plant vent stream may be directed, provided that the vent stream is introduced into a location where the vent stream will be exposed to a minimum temperature of 1,400 degrees F for at least one second, and that the combustion device has been issued a valid permit by the Executive Officer in accordance with all District rules applicable to the device.

(6) THIRD-PARTY FACILITY is a carbon dioxide recovery facility owned and operated by a person (or persons under common control) other than the operator of the hydrogen plant.

(c) Requirements for Existing Hydrogen Plants

(1) On or before July 1, 2000, the operator of an existing hydrogen plant shall conduct initial source testing in accordance with the test methods listed in subdivision (f) to determine the emission rate of the plant and submit a complete test report to the Executive Officer. Notwithstanding the above, the initial source testing and reporting for an existing hydrogen plant that has been placed out of operation for more than one year as of January 21, 2000, shall be conducted within six months of startup of the plant.

(2) On or after July 1, 2001, an operator shall not operate any existing hydrogen plant, unless the plant complies with one of the following:

(A) The total VOC emissions from all process vents of the plant combined are less than 2.5 pounds of VOC per million standard cubic feet of hydrogen produced as determined by test methods listed in subdivision (f); or

(B) The total VOC content in the process condensate is reduced by at least 80 percent from the baseline levels determined by the initial source testing pursuant to paragraph (c) (1). The total VOC content in the process condensate shall be determined in ppm VOC as carbon by weight using the condensate trap analysis of District Method 25.3. Representative samples of process condensate shall

be collected downstream of the cooler following the final shift reactor or at the inlet to the deareator, as appropriate; or

(C) The low temperature shift reactor of the hydrogen plant is equipped and operating exclusively with a low-methanol generating catalyst for which the operator demonstrates compliance by submitting to the Executive Officer, prior to July 1, 2001, the following:

(i) A bill of sale indicating the catalyst type and manufacturer.

(ii) A written statement that the catalyst has been installed and is in operation.

(iii) Catalyst manufacturer's pilot study data or other supporting document verifying that, under the representative operating conditions of the hydrogen plant, the catalyst produces at least 80 percent less methanol over the catalyst's life cycle, when compared with the conventional catalyst supplied by the manufacturer.

(3) On or after January 1, 2003, an operator shall not operate any existing hydrogen plant, unless the total VOC emissions from all process vents of the plant combined are less than 2.5 pounds of VOC per million standard cubic feet of hydrogen produced as determined by test methods listed in subdivision (f). Notwithstanding the above, the compliance date may be extended to July 1, 2003, provided that the operator submits a written statement to the Executive Officer no later than January 1, 2003, indicating that a retrofit control equipment is required for the hydrogen plant to comply with the emission limit of 2.5 pounds of VOC per million standard cubic feet of hydrogen produced and a complete application for Permit to Construct has been filed.

(d) Requirements for New or Reconstructed Hydrogen Plants

(1) Within six months of its initial startup, the operator of a new or reconstructed hydrogen plant shall conduct an initial source testing in accordance with test methods listed in subdivision (f) and submit a complete test report to the Executive Officer.

(2) An operator shall not operate a new or reconstructed hydrogen plant, unless the total VOC emissions from all process vents of the hydrogen

plant combined are less than 0.5 pounds per million standard cubic feet of hydrogen produced as determined by test methods listed in subdivision (f).

(e) Monitoring, Reporting and Recordkeeping Requirements

(1) The operator of a hydrogen plant shall conduct annual compliance testing to demonstrate compliance with paragraphs (c)(2), (c)(3), and (d)(2), as applicable. All compliance testing subsequent to the initial source testing for an existing, new or reconstructed hydrogen plant shall be conducted and test reports submitted to the Executive Officer within 12 calendar months from previous testing and reporting. Notwithstanding the above, an operator who elects to comply with subparagraph (c)(2)(C) shall conduct semiannual testing commencing no later than July 1, 2001, and submit the test reports to the Executive Officer within six calendar months from previous testing and reporting until the operator complies with the requirements of paragraph (c)(3), after which the annual compliance testing is required.

(2) To demonstrate compliance with paragraphs (c)(2), (c)(3), and (d)(2), as applicable, the operator shall certify that the information contained in the test reports is, to the best of his or her knowledge, accurate and represents the actual operating conditions of the plant at the time of the testing. The operator shall further certify that, based on the test results, the hydrogen plant is or is not in compliance with the applicable emission limit of this rule.

(3) In the event that a VOC-containing process stream from a hydrogen plant is delivered to a third-party facility for processing, the Executive Officer may exclude VOC emissions from process vents located at the third-party facility from the compliance demonstration required in paragraphs (c)(2), (c)(3), and (d)(2), as applicable, provided that the operator of the hydrogen plant complies with the following:

(A) The operator submits a written request to the Executive Officer to exclude such emissions; and

(B) The operator conducts source testing in accordance with the test methods listed in subdivision (f) to quantify the VOCs contained in the process stream entering the third-party facility and reports them as VOC emissions for compliance determination purposes.

(4) The operator of a hydrogen plant shall install a metering device to measure the total flow rates of hydrogen produced. This metering device shall be maintained in good operating condition and calibrated for the range in which it operates during source tests.

(5) The operator of a hydrogen plant shall maintain all information required to determine the emission rate for compliance demonstration, including but not limited to the test results and operating parameters as required under Attachment A - Source Test Protocol for VOC Emissions from High Moisture Hydrogen Plant Process Vents. This information shall be maintained in a manner approved by the Executive Officer for a period of at least five years and made available to the Executive Officer upon request.

(f) Test Methods

The following test methods shall be used, as applicable, to determine compliance with this rule. All test methods referenced below shall be the most recent version issued by the respective organization. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, and by the California Air Resources Board and the U.S. Environmental Protection Agency.

(1) District Source Test Protocol for VOC Emissions from High Moisture Hydrogen Plant Process Vents - Attachment A of this rule, or any equivalent revisions hereafter as approved by the Executive Officer.

(2) District Method 25.3 - Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources.

(3) District Method 5.1 - Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train.

(4) EPA Method 5 - Determination of Particulate Emissions from Stationary Sources.

Attachment A

Source Test Protocol for VOC Emissions from High Moisture Hydrogen Plant Process Vents

PURPOSE

This source test protocol provides guidance for determining the VOC emission rates from hydrogen plant process vents in terms of pounds of VOCs per million standard cubic feet of hydrogen produced (lb/MMscf). It specifies general conditions under which the source tests should be conducted in order for the Executive Officer to accept the test results as evidence for compliance demonstration with applicable provisions of Rule 1189. The SCAQMD Method 25.3 is the primary reference test method upon which this test protocol relies to determine the VOC and CO_2 concentrations in various streams. Other standard methods such as SCAQMD Methods 1.1/2.1 and 5.1 are also used to determine flow rates and for collecting representative samples. The protocol establishes guidelines for appropriate use of these test methods on hydrogen plant process vents. Since some of the vent streams from the hydrogen plants are difficult or in some cases impossible to be tested by the reference methods, the protocol also establishes criteria under which the principles of mass balance (material balance) may be used instead.

GENERAL REQUIREMENTS

1. The sampling, analysis, and reporting must be conducted by an SCAQMD Laboratory Approval Program (LAP) approved laboratory for the reference test methods where LAP approval is available.

2. All of the applicable process vents from a hydrogen plant must be tested simultaneously. This includes the deaerator, CO_2, and any other atmospheric process vents that may contain VOC emissions. Alternatively, the testing of the individual stacks can be conducted at different times provided that the operating conditions listed in Item No. 4 below remain constant and records of operating conditions are properly maintained.

3. Testing must be conducted under normal operating conditions. Additionally, the hydrogen production must not be less than the annual operating hourly average.

4. The following operational parameters must be recorded during sampling and reported along with the measured emissions: hydrogen production rate, gas feed rate, shift reactor catalyst type, catalyst age, shift reactor inlet temperature, shift reactor inlet and outlet CO concentrations, steam-to-carbon ratio, and other measurable operating parameters that may affect VOC emissions.

5. All test results and calculation methods, including mass balance calculations, are subject to SCAQMD approval as to their consistency with the SCAQMD published and/or

approved test methods, procedures, and protocols, as well as to the engineering and scientific principles, as applicable.

6. All measurements and process information used in calculating the emissions for compliance, particularly the hydrogen production rate, must be obtained using calibrated equipment within the range for which it is calibrated. Furthermore, the equipment must be calibrated within the calibration intervals specified by the manufacturer. The purity of the hydrogen product must also be determined using calibrated instrumentation or an SCAQMD approved analytical method so that the monitored product stream flow rate can be corrected to reflect exclusively the hydrogen production rate.

DETERMINATION OF FLOW RATE

Flow rates shall be determined by direct measurement except when direct measurement is infeasible and the Executive Officer approves an alternative mass balance approach upon request. Direct flow rate measurement shall follow the standard SCAQMD Method 1.1/2.1 Pitot tube traverse approach with sampling ports installed. Cyclonic flow checks are required as part of each test. Installation of sampling ports, when possible, is recommended for purposes of improved accuracy.

Where sample location or other constraints do not allow direct measurement of flow rates, the hydrogen plant operator shall submit a written request to the Executive Officer for approval of an alternative mass balance approach. The request shall include descriptions of the test constraints, the input to be used for calculating the flow rate and descriptions of the reliability of the input. Flow rates of CO_2 vents can be calculated by a carbon mass balance on the process and feed material. Mass emissions by this approach would require measurements of VOC and CO_2 at the CO_2 vents utilizing SCAQMD Method 25.3 as described in this protocol. Flow rates must be determined and carbon and hydrogen stoichiometric analyses must be performed for all feed streams that enter the process.

Flow rates for the deaerator vents can be difficult to measure either directly or by mass balance. Direct measurement is impeded by the common use of silencers at the deaerator vents causing elevated pressures at sampling ports. When practicable, a stack extension shall be employed in these cases for sampling. Mass balances cannot be applied for calculating flow rate since the primarily steam effluent condenses to an unknown extent in the process. Therefore, upon approval by the Executive Officer, an alternative mass balance approach may be used to directly calculate VOC mass emissions from deaerator vents without determining the flow rate. This approach is described in the section *Determination of Deaerator Emissions Using Mass Balance*.

DETERMINATION OF GASEOUS VOC OR TOTAL VOC WHEN DROPLETS ARE NOT PRESENT

To determine the appropriate sampling method for the VOC emissions, a determination of whether or not droplets are present at the sampling location must be made. The absence of droplets is verified by a stack temperature above the dew point of the gases at the sampling

location (higher temperature if under pressure). Alternatively, the absence of droplets can be verified by similar (within 10%) emissions as measured by both condensable methods of this protocol (Method 5.1 versus Method 25.3) as measured by previous testing.

Provided that it has been determined that droplets are not present at the sampling location, SCAQMD Method 25.3 as shown in Figure 1 must be used to measure the gaseous portion of the VOC, and/or the total VOC. For most cases, the CO_2 vent can be sampled by using Method 25.3 since the temperature is expected to be above the dew point at the sampling location. For the primarily steam, deaerator exhaust, Method 25.3 must be supplemented by impinger sampling if the temperature is less than 212 °F.

For the deaerator vent, the trap volume specified in Method 25.3 must be increased to accommodate the high moisture. Using the six-liter canisters specified in Method 25.3, approximately 50 ml condensing water may be present. To accommodate for an initial 10 ml water charge and 1 ml of line rinse, a trap volume of 70 - 90 ml should be employed. For the CO_2 vent, the trap volume specified in Method 25.3 may or may not need to be increased depending on the moisture present.

To accommodate for potentially high concentrations as compared to the 50 ppm range that Method 25.3 is intended, the calibration range of the analytical instrument can be extended and/or dilution techniques employed. This is acceptable to the applicability of Method 25.3 since the method allows its use for higher concentrations when primarily water soluble VOC are present, subject to SCAQMD approval.

In employing Method 25.3, condensation must not occur prior to the flexible Teflon connector hose as in Figure 1.

DETERMINATION OF CONDENSABLE VOC WHEN DROPLETS ARE PRESENT

When droplets are present, a sample must be collected isokinetically using SCAQMD Method 5.1 (EPA Method 5) with the filter omitted. This method is likely to be applied exclusively to the deaerator vent and only when the temperature is less than 212 °F and the mass balance approach cannot be applied. The allowable range of isokinetics can be extended to 110% or less due to difficulties in maintaining isokinetics with the high moisture causing isokinetics of much less than 100%. The condensable VOC is expected to consist primarily of water-soluble methanol. For purposes of this protocol only, it can be assumed that the minimum 30 cubic feet of required sampling volume can be satisfied by applying the wet volume collected with an added safety margin. A minimum wet volume of 60 actual cubic feet and a minimum dry volume of 1.5 dry cubic feet are therefore required. These are similar to the volumes collected in previous development work. This wet sample volume is subject to the additional requirement that the analysis yields results of greater than five times the lower detection limit. The sampling rate is, therefore, much lower than is normally seen at the meter. The nozzle is sized so that the specified sample volume is collected over an approximate 60 minute period or less if the last non-silica gel impinger becomes full during the sampling. For sampling periods of less than 60 minutes, triplicate sampling is required.

Method 5.1 has provisions for including additional or larger volume impingers for high moisture sources. For 100 cubic feet of wet sample, this equates 2000 ml or more of condensate, which is capable of filling several standard impingers. The additional impinger approach is preferred over the enlarged impinger approach due to difficulties associated with poor heat-transfer surface area. The front impingers have been observed to experience overflow difficulties due to higher gas velocities in the front section. For these reasons a precondenser is highly recommended. The recommended configuration is a precondenser followed by five empty impingers followed by the standard Method 5.1 train without a filter as shown in Figure 2.

After completion of the sampling, the sampling train must be tightly sealed and kept chilled by ice or kept at 32 °F - 45 °F until analysis and during recovery. The sampling train is weighed then recovered and mixed into two composites (back and front sections) of the impinger contents using a minimal amount of rinse water. The back section consists of the last two impingers before the silica gel. The front section consists of the remaining non-silica gel impingers and probe and line rinses. During the recovery, sample agitation must be kept at a minimum to avoid loss of the volatile components. The samples must be analyzed within 72 hours of collection. The front section and back section composites are weighed and analyzed separately for VOC by the condensate trap analysis of SCAQMD Method 25.3. The stack concentration and mass emissions are calculated as in the Calculation section.

DETERMINATION OF DEAERATOR EMISSIONS USING MASS BALANCE

The mass balance approach for calculating deaerator mass emissions must only be used when safety constraints dictate that direct measurement should not be performed. Since past experiences with the mass balance approach have yielded high variability, a minimum of eight runs are required. Each run shall consist of collecting process samples and flow rate data for all streams that enter and exit the deaerator including the steam (condensate). The samples must be collected in an inert container such as glass with Teflon lined lids with zero headspace. The samples must be kept chilled until analysis and analyzed within 72 hour of collection for ppm VOC as carbon by weight by the condensate trap analysis in SCAQMD Method 25.3. Process flow rates must be obtained using calibrated instruments. Additionally, aside from the VOC emissions rate, the deaerator vent rate must be calculated as the difference between total inlet and outlet flows for quality assurance. A negative value, a high positive value, or large deviation between runs may be an indicator of an error and may cause the Executive Officer to reject the test results.

CALCULATION PROCEDURES

CO_2 Vent Flow Rate - Material Balance Alternative. If the CO_2 vent flow rate is determined by the carbon material balance, the flow rate shall be determined by the following relationship:

$$Q_{CO2} = Q_{Cin} - Q_{Cout} \qquad \text{Equation 1}$$

Where:

Q_{CO2} = CO_2 vent flow rate (dscfm)

Q_{Cin} = Flow rate into the unit on a carbon basis (dscfm) based on the feed rates or the average hydrogen production rate and a stoichiometric analysis of carbon and hydrogen in the process feed during testing.

Q_{Cout} = Flow rate out of the unit on a carbon basis for streams containing carbon such as with the hydrogen product stream.

Condensable VOC when Droplets are Present. If droplets are present and the Method 5.1 sampling was employed, the concentration of condensable VOC is determined for both front and back sections of each sample using the following equation in Method 25.3 Section 4.7 with the variables redefined as follows:

$$C_w = (C_i \times V_i \times V_{id})/(V_c \times A_c) \qquad \text{Equation 2}$$

Where:

A_c = Atomic weight of carbon (12.01 g/mol)

C_w = gaseous concentration of TOC as ppmC in condensate trap water

C_i = TOC concentration in ug/ml of condensate trap water

(Assume TOC concentration ug/g = ug/ml at 4°C)

V_i = volume collected in all impingers excluding the silica gel in ml

V_{id} = volume of ideal gas per mole (gram mole) at 60 °F (0.836 scf/mol)

V_c = metered gas volume in dry standard cubic feet

If the back section concentration is more than 10% of the front section concentration, then the sampling must be invalidated and re-run with more cooling in the front section.

VOC Concentration. If droplets were present, as verified by stack temperature or previous testing, the VOC concentration (ppmC) is reported as the sum of both sections of the VOC analysis of the Method 5.1 train, and the canister portion of the Method 25.3 analysis in units of ppmC. If no droplets were present, the ppm VOC is reported as the sum of the Method 25.3 trap and canister analysis as ppmC. The following relationship is used generically for both cases for each process vent:

$$C = C_{cond} + C_{gas} \qquad \text{Equation 3}$$

Where:

C = VOC concentration (ppmC by volume)

C_{cond} = Concentration of condensable VOC by both sections of Method 5.1 if droplets present or by Method 25.3 if no droplets present (ppmC by volume)

C_{gas} = Concentration of gaseous VOC by Method 25.3 (ppmC by volume)

VOC Mass Emissions. Mass emissions from each stack are calculated using the concentration in Equation 3 in ppmC by volume, the dry standard volumetric flow rate from each stack, and the molecular weight and carbon number of methanol (MW = 32 lb/lb-mol, C# = 1) as follows:

$$M = F \times C \times (MW/C\#) \times Q \qquad \text{Equation 4}$$

Where:

F = 1.583×10^{-7} (Conversion factor in min-lb-mol/hr-scf-ppm)

M = VOC mass emissions (lb/hr)

C = VOC concentration (ppmC as volume)

MW/C# =32 lb/lb/mol

Q = Flow rate (dscfm)

Alternative VOC Mass Emissions for Deaerator. When the mass balance approach is used, the emissions from the deaerator vent may be calculated using process flow rates and Method 25.3 analyses of process samples using the following equation:

$$M = \Sigma(Q_{in} \times C_{in} \times F_{mw} / 10^6) - \Sigma(Q_{out} \times C_{out} \times F_{mw} / 10^6) \qquad \text{Equation 5}$$

Where:

M = VOC mass emissions (lb/hr)

Q_{in} = Inlet Process Flow Rates (lb/hr)

C_{in} = VOC concentration in inlet process streams by Method 25.3 (ppmw)

F_{mw} = Molecular weight correction = (32 lb/lb-mole) / (12 lb/lb-mole) = 2.67

Q_{out} = Outlet Process Flow Rates (lb/hr)

C_{out} = VOC concentration in outlet process streams by Method 25.3 (ppmw)

Total VOC Mass Emissions. Total VOC Mass Emissions in lb/hr is calculated by summing VOC Mass Emissions from all vent stacks using the following equation:

$$T = \Sigma M \qquad \text{Equation 6}$$

Where:

T = Total VOC Mass Emissions (lb/hr)

M = VOC Mass Emissions from all individual vents stacks (lb/hr)

Total VOC Mass Emissions per Hydrogen Produced. Total VOC Mass Emissions in units of $lb/MMscf_{hydrogen\ produced}$ is calculated by using the following equation:

$$E = (2400 \times T) / (P \times H_2) \qquad \text{Equation 7}$$

Where:

E = Emissions in $lb/MMscf_{hydrogen\ produced}$

T = Total VOC Mass Emissions (lb/hr

P = Purity of hydrogen product stream (%) as determined by an approved method

H_2 = Average hydrogen production rate during testing (MMdscfm)

TEST REPORT REQUIREMENTS

The final Source Test Report must include the following information:

1. A summary of the Source Test results presented in units of lb/MMscf of hydrogen produced.

2. A brief process description. Indicate equipment operation during testing, the operating parameters as specified in this protocol, as well as any other information which may influence the final report.

3. A simple schematic diagram of the process, showing the sampling locations.

4. A stack schematic depicting the sampling locations with respect to the upstream and downstream distances from flow disturbances. Also include a cross-sectional diagram of the stack or duct at the sampling location, depicting the sampling points with respect to compass direction.

5. The sampling and analytical procedures. Be specific about all aspects of sampling and analysis. Include diagrams of test equipment and methods.

6. Complete raw field data, including production data indicative of the testing interval, lab analyses, and the test results (show all calculations). The lab analyses must also include the associated chromatograms or other raw data generated during both sample and standard runs.

7. Calibration data regarding all sampling and measuring equipment utilized during testing (see District Source Testing Manual, Chapter III or "Quality Assurance Handbook For Air Pollution Measurement Systems", Vol. III, US EPA-600/4-77-0276).

8. A "No Conflict of Interest Statement" pursuant to SCAQMD Rule 304.

9. The sample "Chain of Custody" containing time and dated signatures of the person of responsible charge of the sample from the point of origination to analysis.

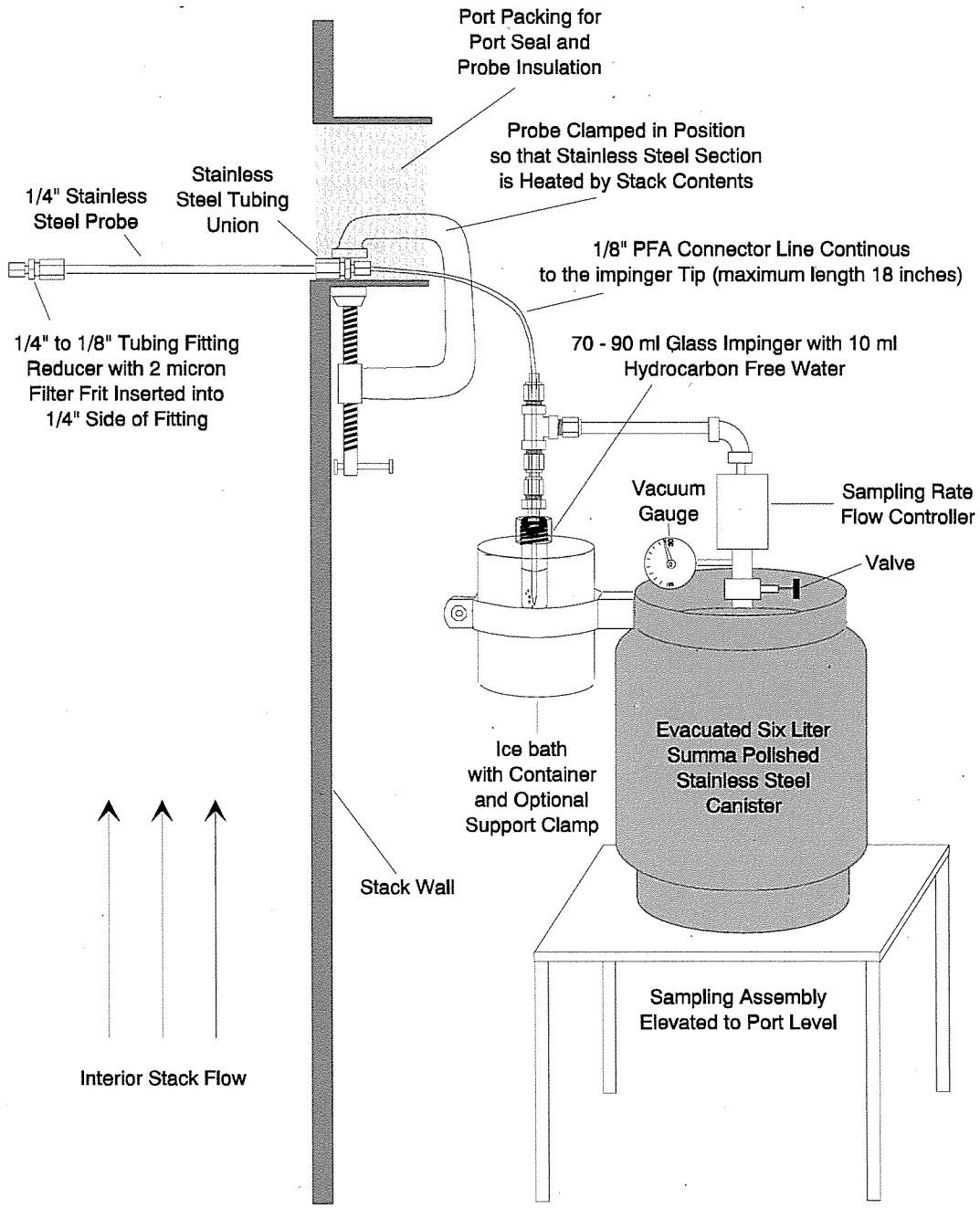


Figure 1- Sampling Equipment for Gaseous VOC or Total VOC When Droplets are not Present

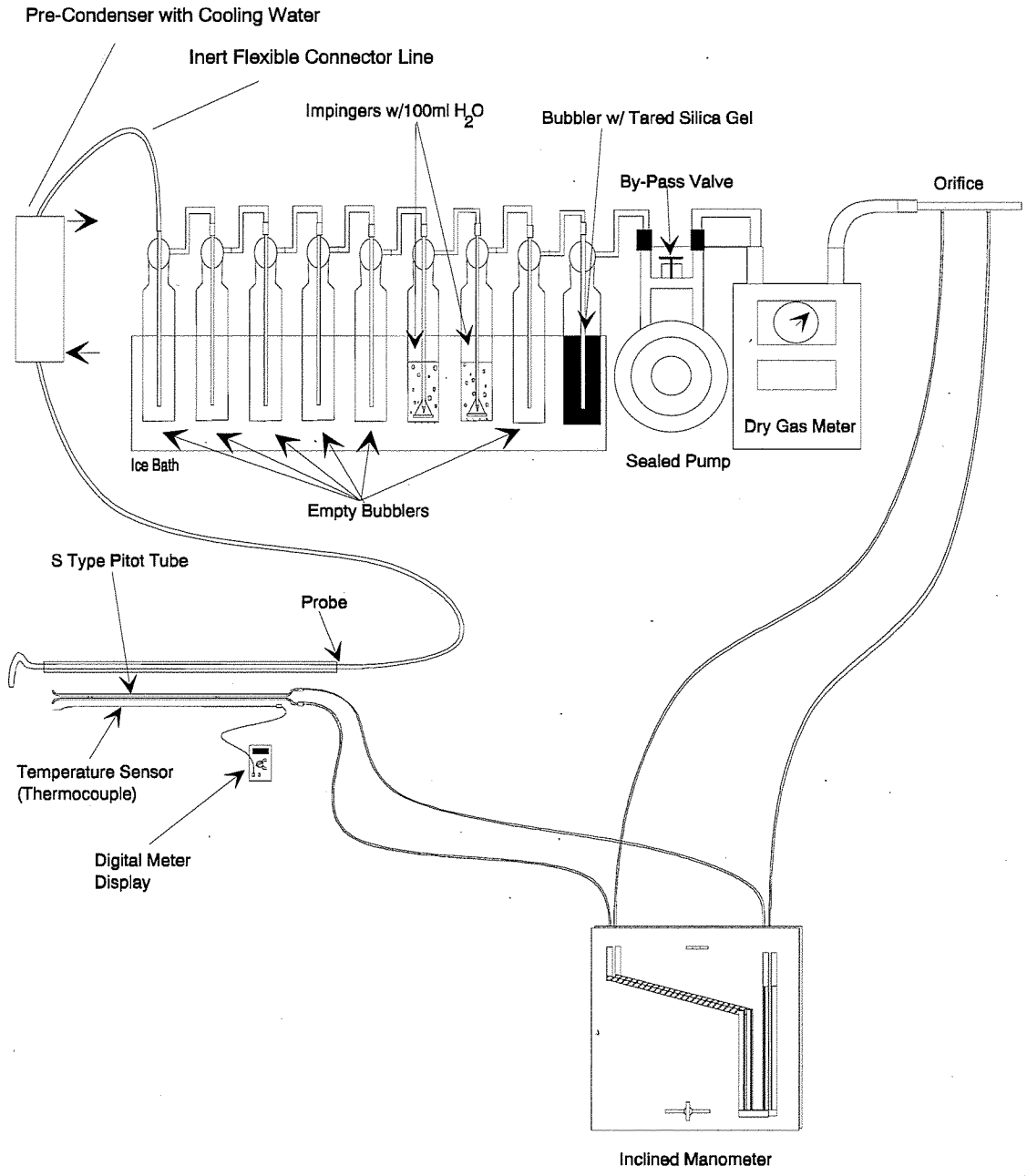


Figure 2- Sampling Equipment for Condensable VOC when Droplets are Present