5-30-91

RULE 461.2 VEGETABLE OIL PROCESSING OPERATIONS

I. APPLICABILITY

The provisions of this rule shall apply to vegetable oil plants.

II. DEFINITIONS:

A. Conveyor: any mechanical device which removes the meal from one location to another location.

B. Desolventizer-Toaster: a process unit in which steam and air are forced through and across the meal to volatilize the solvent.

C. Equipment in Organic Service: any pump, valve, pressure relief valve, sight glass, sample connection, open-ended valve, or connector, by which materials containing organic compounds come into contact or are handled.

D. Extractor: equipment which has as its function the removal of oil from the oil-bearing material by the use of a solvent.

E. Leak: any dripping or indication of dripping of liquid from equipment in organic service; or an emission of organic compounds which causes a portable hydrocarbon detection instrument to register at least 10,000 ppm as methane, as determined by EPA Method 21.

F. Meal: spent vegetable seed flakes containing adsorbed solvent.

G. Mineral Oil Scrubber: a packed tower using mineral oil as an adsorbent for the extraction solvent.

H. Portable Hydrocarbon Detection Instrument: a hydrocarbon analyzer which uses the flame ionization detection or thermal conductivity methods and satisfies Method 21, 40 CFR Part 60.

I. Solvent: the extraction medium being used to extract the oil in the vegetable seed cake.

J. Solvent Extraction: removal of vegetable oil from the seed or bean using a solvent in a contact system.

K. Tumbler or Cooler: a device which reduces the temperature or moisture from the meal.

L. Vegetable Oil Plant: any facility engaged in the extraction or refining of vegetable oil.

M. Volatile Organic Compound (VOC): any compound containing at least one atom of carbon except for the following exempt compounds:

methane,
carbon monoxide,
carbon dioxide,
carbonic acid,
metallic carbides or carbonates,
ammonium carbonates,
methylene chloride,
methyl chloroform (1,1,1-trichloroethane),
CFC-113 (trichlorotrifluoroethane),
CFC-11 (trichlorofluoromethane),
CFC-12 (dichlorodifluoromethane),
CFC-22 (chlorodifluoromethane),
FC-23 (trifluoromethane),
CFC-114 (dichlorotetrafluoroethane),
CFC-115 (chloropentafluoroethane),
HCFC-123 (dichlorotrifluoroethane),
HFC-134a (tetrafluoroethane),
HCFC-141b (dichlorofluoroethane), and
HCFC-142b (chlorodifluoroethane).

III. Requirements

A. Extractor, Desolventizer-Toaster:

A person shall not operate any extractor or desolventizer-toaster that emits more than 6.8 kg (15 lb) of volatile organic compounds per day, (excluding the meal discharge) unless such emissions are controlled by one of the following:

1. A condenser and mineral oil scrubber with a combined capture and control efficiency of at least 90 percent by weight; or

2. An emission control device, with a combined capture and control efficiency of at least 90 percent by weight, confirmed by source testing. Control device shall be under District permit.

B. Desolventizer-Toaster Conveyor, Cooler or Tumbler: A person shall not operate a vegetable oil plant unless the desolventizer-toaster discharge conveyor prior to the cooler or tumbler is vented to a mineral oil scrubber having a combined capture and control efficiency of at least 90 percent by weight.

C. Equipment in Organic Service: The owner or operator of a vegetable oil extraction plant shall inspect at least once a month all equipment in organic service for any indication of any leak of volatile organic compounds. Monthly inspections shall be carried out in accordance with EPA Method 21. If the detected leakage level exceeds 10,000 ppm (expressed as methane), or if leaks are visible, the leaking equipment shall be repaired within ten (10) days.

D. A owner or operator shall not use any equipment in organic service at a vegetable oil plant unless such equipment does not leak.

E. Emissions from leaks in equipment in organic service which have been tagged by the owner or operator for repair in accordance with the requirements of Subsection IV.A or which have been repaired and are waiting reinspection pursuant to Subsection IV.A shall not constitute a violation of Subsection III.D.

IV. Administrative Requirements

A. Record Keeping:

Records shall be maintained for two (2) years and be made available to the Control Officer upon request.

1. The owner or operator of a vegetable oil plant shall maintain records such that daily solvent consumption can be determined.

2. A readily visible identification, in the form of a weatherproof tag, shall be attached to any equipment in organic service with is leaking. The identification tag may be removed upon repair.

3. The owner or operator of a vegetable oil plant shall maintain an inspection log containing, at a minimum, the following:

a. Name, location, type of components, and description of any equipment in organic service where leaking components are found.

b. Date of leak detection, emission level (ppm) of leak, and method of detection.

c. Date and emission level of recheck after leak is repaired.

B. Test Methods:

1. Leak Detection shall be performed with a portable hydrocarbon dectection instrument in accordance with EPA Method 21.

2. Analysis of Samples: Samples of VOC as specified in this Rule shall be analyzed by ASTM Method E-168-67, E-169-87, or E-260-85 as applicable and analysis of halogenated exempt compounds shall be analyzed by ARB Method 432.

3. Determination of Emissions: Emissions of VOC shall be measured by EPA Method 25, 25a, or 25b, as applicable, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 422.

4. Where add-on control equipment is utilized, collection efficiency shall be determined by the EPA document "Model Regulatory Language for Capture Efficiency Testing" dated 8/3/90.

V. Compliance Schedule

A. Kern, Kings, Madera, Merced, Stanislaus, San Joaquin, or Tulare County Zone:

1. By August 1, 1991, submit to the Zone a plan describing the methods to be used to comply with the applicable rule.

2. By November 1, 1991, submit a completed application for Authority to Construct if necessary.

3. By November 1, 1992, be in full compliance with the requirements of the Rule.

B. Fresno County Zone:

The owner or operator subject to this Rule shall comply with the following increments of progress:

1. By May 1, 1988, submit to the Zone a plan describing the methods to be used to comply with the applicable rule.

2. By July 1, 1988 submit a completed application for Authority to Construct if needed.

3. By December 1, 1988, be in full compliance with the requirements of the Rule.

9/28/94

RULE 1010 TITLE (Adopted June 18, 1992)

1.0 These rules and regulations shall be known as the Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District.

RULE 1020 DEFINITIONS (Adopted June 18, 1992; Amended December 17, 1992; Amended December 16, 1993; Amended April 13, 1995; Amended May 16, 1996; November 13, 1996; Amended December 18, 1997; Amended June 17, 1999; Amended January 15, 2009; Amended February 21, 2013)

1.0 Purpose

The purpose of this rule is to define certain words used in these regulations. Except as otherwise specifically provided in these rules and except where the context otherwise indicates, words used in these rules are used in exactly the same sense as the same words are used in Division 26 (Air Resources) of the California Health and Safety Code.

2.0 Applicability

This rule shall apply to the use of terms in all of the San Joaquin Valley Unified Air Pollution Control District Rules and Regulations except where otherwise indicated.

3.0 Definitions

3.1 Affected Pollutants: those pollutants for which an ambient air quality standard has been established by the Environmental Protection Agency or by the ARB and the precursors to such pollutants, and those pollutants regulated by the Environmental Protection Agency under the Federal Clean Air Act or by the ARB under the Health and Safety Code including volatile organic compounds, nitrogen oxides, sulfur oxides, PM-10, carbon monoxide, ethylene, lead, asbestos, beryllium, mercury, vinyl chloride, fluorides, sulfuric acid mist, hydrogen sulfide, total reduced sulfur, and reduced sulfur compounds, and those pollutants which the Environmental Protection Agency, after due process, or the ARB or the District, after public hearing, determine may have a significant adverse effect on the environment, the public health, or the public welfare.

3.2 Air Contaminants: any discharge, release, or other propagation into the atmosphere directly or indirectly, caused by man and includes, but is not limited to, smoke, charred paper, dust, soot, grime, carbon, noxious acids, fumes, gases, odors, or particulate matter, or any combination thereof.

3.3 Air Pollution Control Officer (APCO): the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District.

3.4 Air Resources Board (ARB or CARB): the state Air Resources Board as established by Health and Safety Code section 39510, or any person authorized to act on its behalf.

3.5 Alteration: any addition to, enlargement of, replacement of, or any major modification or change in the design, capacity, process, or arrangement, or any increase in the connected loading of, equipment or control apparatus, which will significantly increase or affect the kind or amount of air contaminants emitted.

3.6 Ambient Air Quality Standards: the state and National Ambient Air Quality Standards. (In the inclusion of this rule in the State Implementation Plan, all references in these regulations to ambient air quality standards shall be interpreted as National Ambient Air Quality Standards.)

3.7 Atmosphere: the air that envelops or surrounds the earth. Where air pollutants are emitted into a building or structure not designed specifically as a piece of air pollution control equipment, such emissions into the building or structure shall be considered emissions into the atmosphere.

3.8 Board: the Governing Board of the San Joaquin Valley Unified Air Pollution Control District.

3.9 Central Kern County Fields: that portion of Kern County within boundaries described as:

- Beginning at a point common to the northerly boundary line of Kern County, and the center line of Interstate Hwy. 5 and following Interstate Hwy. 5 in a southeasterly direction to a point on the line between Township 10N and Township 11N, San Bernardino Base and Meridian (SBB&M);
- thence east on said line between Township 10N and Township 11N to a point on the line between Range 17W and Range 18W SBB&M;
- then north to the northwest corner of Section 35, Township 31S, Range 30E, Mount Diablo Base and Meridian (MDB&M);
- then northeast along the boundary of the Rancho El Tejon Land Grant to the northwest corner of Section 19, Township 31S, Range 31E, MDB&M;
- then north to the southwest corner of Section 6, Township 30S, Range 31E, MDB&M;
- thence north along said line between Range 30E and Range 31E to a point on the line between Township 28S and Township 29S, MDB&M;
- thence east along said line between Township 28S and Township 29S to a point on the line bearing in a northerly direction between Range 30E and Range 31E, MDB&M;
- thence north along said line between Range 30E and Range 31E, MDB&M, to a point on the northerly boundary line of Kern County;
- thence west along said boundary to the point of beginning. (See Figure 1.)

3.10 Clean Produced Water: water containing less than 35 milligrams of VOC per liter, as determined by EPA Test Method 413.2, or 418.1 and/or, if necessary, EPA

Test Method 8240. Hydrocarbons heavier than C14, as determined by Test Method ASTM E 260-85, may be excluded from the total concentration.

3.11 Combustible Refuse: any solid or liquid combustible waste material containing carbon in a free or combined state.

3.12 Combustion Contaminants: particulate matter discharged into the atmosphere from the burning of any kind of material containing carbon in a free or combined state.

3.13 Cyclic Well: any crude oil production well which is periodically (at least once in the preceding five (5) year period) injected with steam from any source for the purpose of enhancing oil production.

3.14 District: the San Joaquin Valley Unified Air Pollution Control District including Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties, and the San Joaquin Valley Air Basin portion of Kern County.

3.15 Dust: minute, solid particles released into the air by natural forces or by mechanical processes such as crushing, grinding, milling, drilling, demolishing, shoveling, conveying, covering, bagging, sweeping, or other similar processes.

3.16 Emission: the act of passing into the atmosphere of an air contaminant or gas stream which contains an air contaminant, or the air contaminant so passed into the atmosphere.

3.17 Emission Point: the place at which air contaminants enter the atmosphere.

3.18 Flue: any duct or passage for air, gases, or the like, such as a stack or chimney.

3.19 Fresno County Oil Fields: that portion of Fresno County westerly of the following described line:

- Beginning at a point common to Kings, Monterey and Fresno counties, which point also being the most southerly point of Fresno County;
- thence northerly and easterly along the Fresno County line to a point on the line common to Ranges 20 East and 21 East;
- thence northerly along said range line to a point on the line common to Townships 16 South and 17 South;
- thence northwesterly on a straight line from that point through the southeast corner of Township 13 South, Range 17 East, to its intersection with the northerly boundary line of Fresno County (See Figure 2).

3.20 Fuel Burning Equipment: any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer.

3.21 Fuel Burning Unit: the minimum number of fuel burning equipment, the simultaneous operation of which are required for the production of useful heat or power.

3.22 Fumes: minute, solid particles that are generated by the condensation of vapors from solid matter after volatilization from the molten state, or that may be generated by sublimation, distillation, calcination, or chemical reaction, when these processes create air-borne particles.

3.23 Hearing Board: the Hearing Board of the San Joaquin Valley Unified Air Pollution Control District.

3.24 Installation: the placement, assemblage, or construction of equipment or control apparatus at the premises where the equipment or control apparatus will be used, and includes all preparatory work at such premises.

3.25 Institutional Facility: any hospital, boarding home, school, corporation yard, or like facility.

3.26 Loading Rack: any aggregate or combination of equipment which loads organic liquid into tank trucks, trailers or railroad tank cars. The loading rack is the portion from the connection at the inlet of the organic liquid pump to and including the hose and connector at the portable delivery tank.

3.27 Multiple Chamber Incinerator: any source operation, structure, or any part of a structure used to dispose of combustible refuse by burning, consisting of three (3) or more refractory lined combustion furnaces in series, physically separated by refractory walls, interconnected by gas passage ports or ducts, and employing adequate design parameters necessary for maximum combustion of the material to be burned. The refractories shall have a pyrometric cone equivalent of at least 17, tested according to the method described in the American Society for Testing Materials, Method C-24.

3.28 Nonattainment Pollutant: any pollutant for which an ambient air quality standard was exceeded within the District more than three (3) discontinuous times (or, for annual standards, more than one (1) time) within the three (3) years immediately preceding the date when the application for the Authority to Construct was filed, or which has been designated nonattainment pursuant to final rule-making by the Environmental Protection Agency published in the Federal Register, or which has been designated nonattainment by the ARB pursuant to Section 39607 of the

Health and Safety Code. Any pollutant which is a precursor to a nonattainment pollutant is, itself, a nonattainment pollutant.

3.29 Open Outdoor Fire: the combustion of any combustible refuse, or other material of any type, outdoors in the open air, not in any enclosure where the products of combustion are not directed through a flue.

3.30 Operation: any physical action resulting in a change in the location, form, or physical properties of a material, or any chemical action resulting in a change in the chemical composition or the chemical or physical properties of a material.

3.31 Owner: includes but is not limited to any person who leases, supervises, or operates equipment, in addition to the normal meaning of ownership.

3.32 Particulate Matter: any material except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

3.33 Person: any person, 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 officer or employee thereof.

3.34 Pit: an excavation intended for use under normal conditions for the intermittent or emergency collection of crude oil and water.

3.35 Pond: an excavation used for the storage of clean produced water as defined in this rule prior to reuse or disposal.

3.36 PM-10: particulate matter with an aerodynamic diameter smaller than or equal to a nominal ten (10) microns as measured by the applicable state and federal reference test methods.

3.37 PPM (ppm): parts per million by volume expressed on a dry gas basis.

3.38 Process Weight: the total weight of all materials introduced into any specific source operation, which operation may cause any discharge into the atmosphere. Solid fuels charged are considered as part of the process weight, but liquid and gaseous fuels and combustion air are not.

3.39 Process Weight Rate: derived by dividing the total process weight by the number of hours in one (1) complete cycle of operation from the beginning of any given process to the completion thereof, excluding any time during which the equipment is idle.

3.40 Regulation: one of the major subdivisions of the rules of the San Joaquin Valley Unified Air Pollution Control District.

3.41 Residential Rubbish: refuse originating from residential uses and includes wood, paper, cloth, cardboard, tree trimmings, leaves, lawn clippings, and dry plants.

3.42 Rubbish: combustible and noncombustible solid wastes of commercial and industrial establishments, institutions, etc., exclusive of the highly putrescible wastes (garbage). Rubbish consists of such materials as paper, metal, wood, cans, furniture, yard trimmings, and ceramics.

3.43 Rule: a rule of the San Joaquin Valley Unified Air Pollution Control District.

3.44 San Joaquin Valley Air Basin: all of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare Counties, and that portion of Kern County which lies west and north of a line described as follows:

- Beginning at the Kern-Los Angeles County boundary and running north and east along the northwest boundary of the Rancho La Liebre Land Grant to the point of intersection with the township line common to T.9.N and T.10.N, San Bernardino Base and Meridian (SBB&M);
- then west along the township line to the range line common to R.16.W and R.17.W, SBB&M;
- then north along the range line to the point of intersection with the Rancho El Tejon Land Grant boundary;
- then southeast, northeast, and northwest along the boundary of the Rancho El Tejon Land Grant to the northwest corner of S.3, T.11.N, R.17.W, SBB&M;
- then west 1.2 miles;
- then north to the Rancho El Tejon Land Grant boundary;
- then northwest along the Rancho El Tejon line to the southeast corner of S.34, T.32.S, R.30.E, Mount Diablo Base and Meridian (MDB&M);
- then north to the northwest corner of S.35, T.31.S, R.30.E, MDB&M;
- then northeast along the boundary of the Rancho El Tejon Land Grant to the southwest corner of S.18, T.31.S, R.31.E, MDB&M;
- then east to the southeast corner of S.13, T.31.S, R.31.E, MDB&M;
- then north along the range line common to R.31.E, and R.32.E, to the northwest corner of S.6, T.29.S, R.32.E, MDB&M;
- then east to the southwest corner of S.31, T.28.S, R.32.E, MDB&M; and
- then north along the range line common to R.31.E and R.32.E, the northwest corner of S.6, T.28.S, R.32.E, MDB&M;
- then west to the southeast corner of S.36, T.27.S, R.31.E, MDB&M;
- then north along the range line common to R.31.E, and R.32.E,to the Kern - Tulare County boundary.

3.45 Small Producer: a person who produces an average of less than 6,000 barrels per day of crude oil from all operations in the county, and does not engage in refining, transporting or marketing of refined petroleum products.

3.46 Source Operation: the last operation preceding the emission of any air contaminant, which:

3.46.1 Results in the separation of the air contaminant from the process materials or in the conversion of the process materials into air contaminants, as in the case of combustion of fuels; and

3.46.2 Is not an air pollution abatement operation; and

3.46.3 Is any operation, article, machine, equipment or other contrivance.

3.47 Standard Conditions: a gas temperature of 60 degrees Fahrenheit and a gas pressure of 14.7 pounds per square inch absolute. Results of all analyses and tests shall be calculated or reported at this gas temperature and pressure.

3.48 Standard Cubic Foot of Gas: the amount of gas that would occupy a column of one (1) cubic foot, if free of water vapor at standard conditions.

3.49 Steam Drive Well: any crude oil production well which produces from the same production zone in which a steam injection well is completed, and is within:

3.49.1 250 feet of a steam injection well, if the injection well is within a production well pattern of two and one-half (2-1/2) acres or smaller;

3.49.2 350 feet of a steam injection well, if the injection well is within a production well pattern of greater than two and one-half (2-1/2) acres but five (5) acres or smaller;

3.49.3 500 feet of a steam injection well, if the injection well is within a production well pattern larger than five (5) acres; or

3.49.4 1000 feet of a steam injection well, and responds to steam injected in an irregular pattern, and exhibits any visible emissions.

3.50 Steam-enhanced Crude Oil Production Well: any steam drive well, cyclic well or any other well in a production zone that has had the temperature raised by the injection of steam.

3.51 TRS: the total reduced sulfur contained in hydrogen sulfide, mercaptans, dimethyl sulfide, dimethyl disulfide or other organic sulfide compounds, all expressed as

hydrogen sulfide. Sulfur dioxide, sulfur trioxide, or sulfuric acid are not to be included in the determination of TRS.

3.52 TVP: true vapor pressure.

3.53 Volatile Organic Compound (VOC): any compound containing at least one (1) atom of carbon, except for the following exempt compounds:

- methane,
- ethane,
- carbon monoxide,
- carbon dioxide,
- carbonic acid,
- metallic carbides or carbonates,
- ammonium carbonate,
- acetone,
- methyl acetate,
- methylene chloride,
- methyl chloroform (1,1,1-trichloroethane),
- perchloroethylene (tetrachloroethylene),
- CFC-113 (1,1,2-trichloro-1,2,2-trifluoroethane),
- CFC-11 (trichlorofluoromethane),
- CFC-12 (dichlorodifluoromethane),
- HCFC-22 (chlorodifluoromethane),
- HFC-23 (trifluoromethane),
- CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane),
- CFC-115 (chloropentafluoroethane),
- HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane),
- HCFC-124 (2-chloro-1,1,1,2-tetrafluoroethane),
- HFC-125 (pentafluoroethane),
- HFC-134 (1,1,2,2-tetrafluoroethane),
- HFC-134a (1,1,1,2-tetrafluoroethane),
- HCFC-141b (1,1-dichloro 1-fluoroethane),
- HCFC-142b (1-chloro-1,1 difluoroethane),
- HFC-143a (1,1,1-trifluoroethane),
- HFC-152a (1,1-difluoroethane),
- HCFC-225ca (3,3-dichloro-1,1,1,2,2-pentafluoropropane),
- HCFC-225cb (1,3-dichloro-1,1,2,2,3-pentafluoropropane),
- HFC-43-10mee (1,1,1,2,3,4,4,5,5,5-decafluoropentane),
- HFC-32 (difluoromethane),
- HFC-161 (ethylfluoride),
- HFC-236fa (1,1,1,3,3,3-hexafluoropropane),
- HFC-245ca (1,1,2,2,3-pentafluoropropane),
- HFC-245ea (1,1,2,3,3-pentafluoropropane),
- HFC-245eb (1,1,1,2,3-pentafluoropropane),
- HFC-245fa (1,1,1,3,3-pentafluoropropane),
- HFC-236ea (1,1,1,2,3,3-hexafluoropropane),
- HFC-365mfc (1,1,1,3,3-pentafluorobutane),
- HCFC-31 (chlorofluoromethane),
- HCFC-151a (1-chloro-1-fluoroethane),
- HCFC-123a (1,2-dichloro-1,1,2-trifluoroethane),
- $C_4F_9OCH_3$ (1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane),
- $(CF_3)_2CFCF_2OCH_3$ (2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane),
- $C_4F9OC_2H_5$ (1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane),
- $(CF_3)_2CFCF_2OC_2H_5$ (2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane),

- cyclic, branched, or linear completely methylated siloxane compounds, (see Section 3.53.1)
- parachlorobenzotrifluoride, and
- The following four classes of perfluorocarbon (PFC) compounds (see Section 3.53.1):
  1) cyclic, branched, or linear, completely fluorinated alkanes,
  2) cyclic, branched, or linear, completely fluorinated ethers with no unsaturations,
  3) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations, and
  4) sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.
- Tertiary-butyl acetate (1,1-dimethylethyl ester), (see Section 3.53.2)
- Methyl formate (MF),
- dimethyl carbonate (DMC),
- propylene carbonate (PC)

3.53.1 Perfluorocarbon and methylated siloxane compounds shall be assumed to be absent from a product or process unless a manufacturer or facility operator identifies the specific individual compounds (from broad classes of these compounds) and the amounts present in the product or process, and identifies a validated test method which can be used to quantify the specific compounds.

3.53.2 Tertiary-butyl acetate (also known as t-butyl acetate, TBAC or TBAc) shall be considered exempt as a volatile organic compound (VOC) only for purposes of VOC emissions limitations or VOC content requirements, but will continue to be a VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling, and inventory requirements which apply to VOCs.

3.54 Western Kern County Fields: that portion of Kern County within boundaries described as:

- Beginning at a point common to the northerly boundary line of Kern County and the center line of Interstate Hwy. 5 and following the Kern County boundary in a westerly direction, to its intersection with the eastern boundary of San Luis Obispo County;
- thence south and east along the San Luis Obispo and Kern County boundary to a point on the line between Township 10N and Township 11N, San Bernardino Base & Meridian;
- thence easterly along said line between Township 10N and Township 11N to a point on the line common to Interstate Hwy. 5; thence northwesterly along Interstate Hwy. 5 to the point of beginning (See Figure 3).

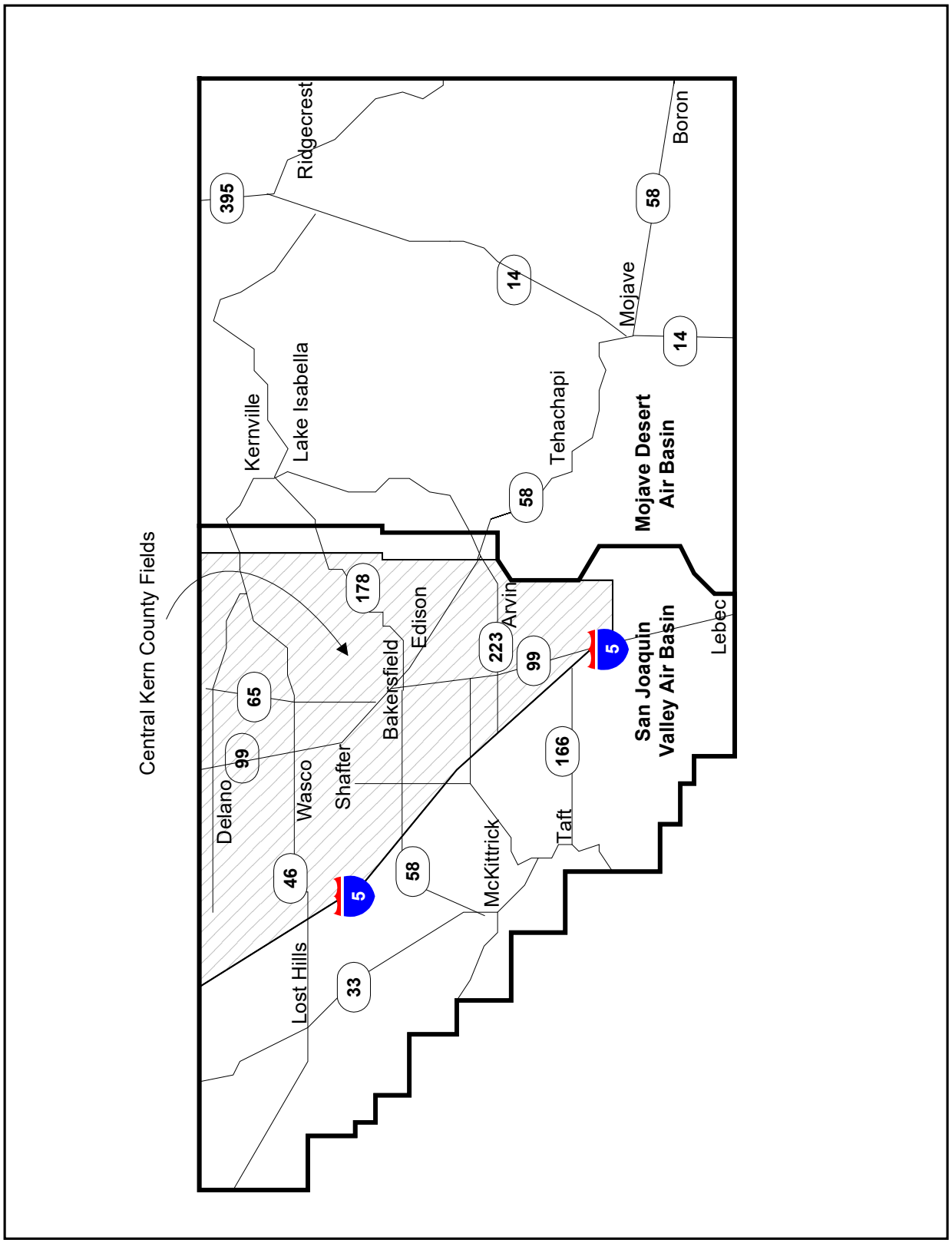


Figure 1 Central Kern County Fields

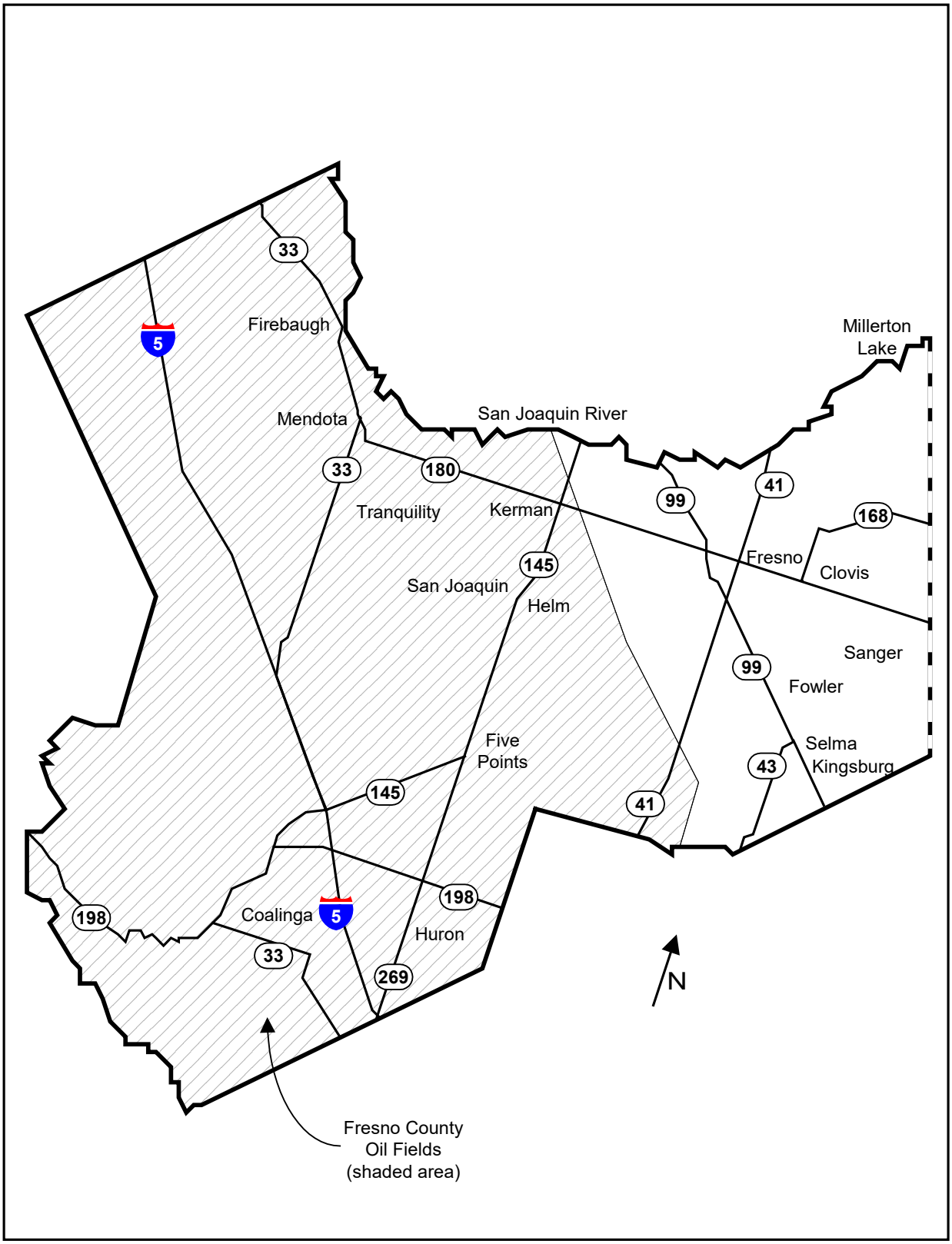


Figure 2 Fresno County Oil Fields

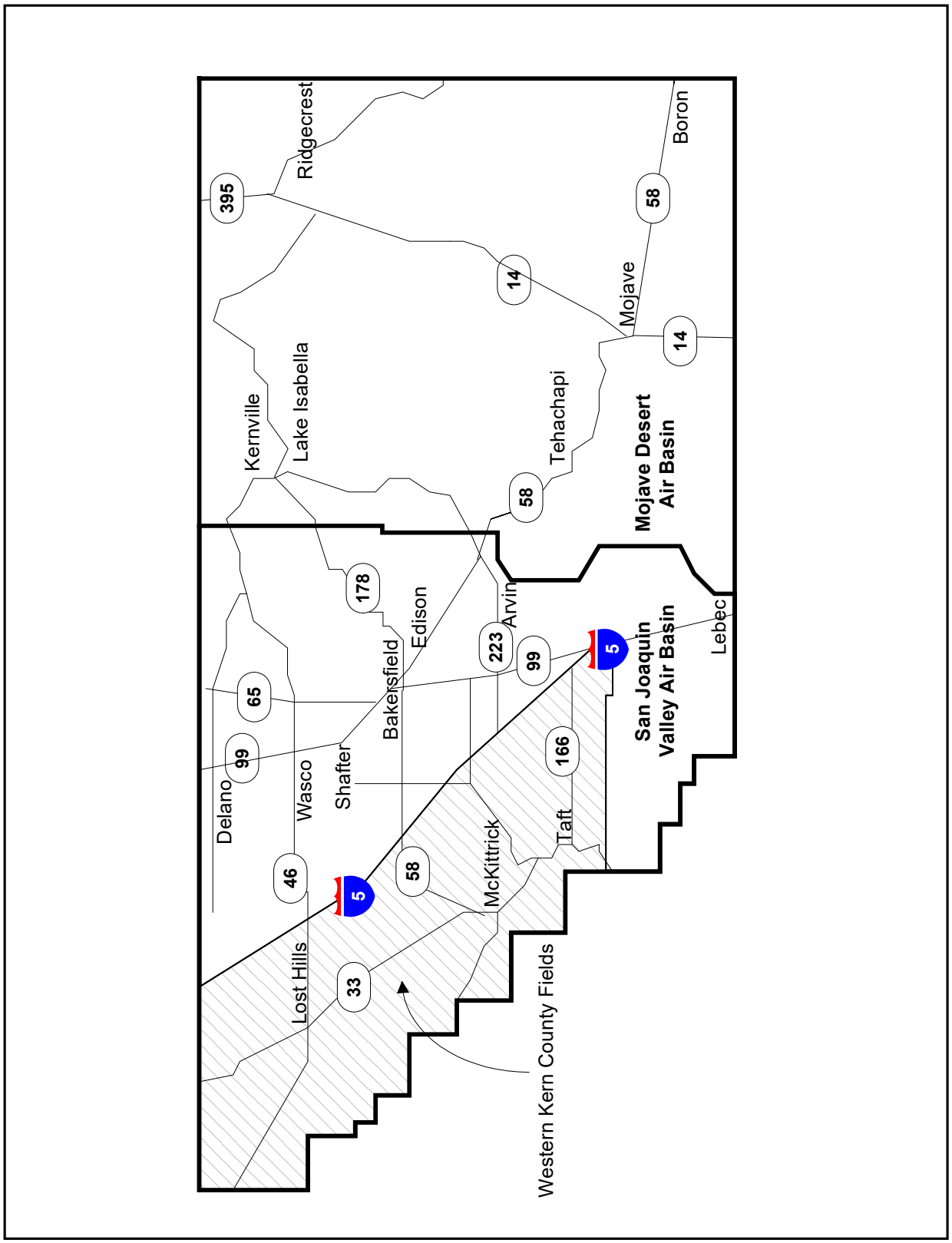


Figure 3 Western Kern County Fields

RULE 1040 ENFORCEMENT (Adopted June 18, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule to define the provisions of the California Health and Safety Code under which these rules are enforced.

2.0 Applicability

This rule shall apply to any source operation which emits or may emit air contaminants.

3.0 These rules and regulations shall be enforced by the APCO under the authority of the State of California Health and Safety Code, Sections 40001, 40702, 40752, and 40753, and by all officers and employees empowered by Sections 40120 and 41510 of the Health and Safety Code of the State of California.

RULE 1050 ORDER OF ABATEMENT (Adopted June 18, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to explain the procedures for issuing an order of abatement, the rules governing hearings on the issuance of orders of abatement, and the penalties for violating orders of abatement.

2.0 Applicability

This rule shall apply to any source operation which emits or may emit air contaminants.

3.0 Order of Abatement

The Air Pollution Control Board may, after notice and a hearing, issue or provide for the issuance by the Hearing Board, after notice and a hearing, an order of abatement whenever the District finds that any person is in violation of Sections 41700 or 41701 of the California Health and Safety Code, or of any rule or regulation prohibiting or limiting the discharge of air contaminants into the air.

4.0 Hearings

The Air Pollution Control Board in holding hearings on the issuance of orders for abatement shall have all powers and duties conferred upon the Hearing Board by Division 26, of the Health and Safety Code of the State of California. The Hearing Board in holding hearings on the issuance of orders for abatement shall have all powers and duties conferred upon it by Division 26, of the Health and Safety Code of the State of California.

5.0 Penalty

Any person who intentionally or negligently violates any order for abatement issued by any type of Air Pollution Control Board, Hearing Board or Air Pollution Control District, pursuant to Sections 42450 and 42451 or by the ARB, shall be liable for a civil penalty not to exceed $25,000.00 for each day in which such violation occurs, pursuant to Section 42401.

RULE 1070 INSPECTIONS (Adopted June 18, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to explain the District's authority in determining compliance with the requirements of these rules and regulations.

2.0 Applicability

This rule shall apply to any source operation which emits or may emit air contaminants.

3.0 District Inspections

Inspections shall be made by the enforcement agency for the purpose of obtaining information necessary to determine whether air pollution sources are in compliance with applicable rules and regulations.

4.0 District Authority

The District also has the authority to require record keeping, to make inspections and to conduct tests of air pollution sources.

9/25/94

RULE 1080 STACK MONITORING (Adopted June 18, 1992, Amended December 17, 1992)

1.0 Purpose

This rule grants the APCO the authority to request the installation, use maintenance, and inspection of continuous monitoring equipment. The general, source and pollutant specific requirements for continuous monitoring equipment are defined. This rule also specifies the performance standards for the equipment and administrative recordkeeping, reporting, and violation and equipment breakdown notification requirements.

2.0 Applicability

This rule shall apply to any owner or operator of a source operation which emits or may emit air contaminants.

3.0 Definitions

Definitions used shall be those given in 40 CFR, Part 51, or equivalent ones established by mutual agreement of the District, the ARB and the Environmental Protection Agency.

4.0 Requirements for Continuous Monitoring Equipment

Upon the request of the APCO and as directed by him, the owner shall provide, install, and operate continuous monitoring equipment on such operations as directed. The owner shall maintain, calibrate, and repair the equipment and shall keep the equipment operating at design capabilities.

5.0 Requirements for Continuous Monitoring Equipment: specific sources and pollutants

Upon request, the owner or operator shall provide, properly install, and maintain in good working order and in operation, continuous monitoring systems to measure the following pollutants or opacity from the following sources:

5.1 Fossil-fuel fired steam generators with a heat input of 250 million BTUs or more per hour with a use factor of at least 30% per year.

5.1.1 Oxides of nitrogen;

5.1.2 Carbon dioxide or oxygen;

5.1.3 Opacity except:

5.1.3.1 where gaseous fuel is the only fuel burned; or

5.1.3.2 where oil or a mixture of gas and oil is the only fuel burned and the source is able to comply with the applicable particulate matter and opacity regulations without collection equipment, and where the source has not been found since December 31, 1970, through administrative or judicial proceedings, to be in violation of applicable sections of Regulation IV (Prohibitions); and

5.1.4 SO_2, if control equipment is used.

5.2 All sulfur recovery plants and sulfuric acid plants:

5.2.1 SO_2.

5.3 All new nitric acid plants and all existing nitric acid plants of greater than 300 tons per day production capacity, the production capacity being expressed as 100% acid:

5.3.1 Oxides of nitrogen.

5.4 CO boilers or regenerators of fluid catalytic cracking units and CO boilers of fluid cokers if the feed rate is greater than 10,000 barrels per day.

5.4.1 SO_2; and

5.4.2 Opacity.

6.0 Standards of Performance

6.1 Systems shall be installed, calibrated, maintained and operated in accordance with the following sections of 40 CFR:

6.1.1 Fossil-fuel fired steam generators: Section 60.45.

6.1.2 Sulfuric acid plants: Section 60.84.

6.1.3 Nitric acid plants: Section 60.73.

6.1.4 Petroleum refineries: Section 60.105.

6.2 Equivalent standards may be used by mutual agreement of the District, the ARB and the Environmental Protection Agency.

6.3 Calibration gas mixtures shall meet the specifications in 40 CFR, Part 51, Appendix P, Section 3.3, and Part 60, Appendix B, Performance Specification 2, Section 2.1, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the Environmental Protection Agency.

6.4 Cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the Environmental Protection Agency.

6.5 The continuous SO_2 and NO_x monitors shall meet the applicable performance specification requirements in 40 CFR, Part 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the Environmental Protection Agency.

6.6 The continuous CO_2 and O_2 monitoring system shall meet the performance specification requirements in 40 CFR, Part 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the Environmental Protection Agency.

6.7 The continuous opacity monitoring system shall meet the performance specification requirements in 40 CFR, Part 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the Environmental Protection Agency.

7.0 Data Reduction and Recordkeeping Requirements

7.1 A person operating or using a stack-monitoring system shall upon written notice from the APCO, provide a summary of the data obtained from such systems. This summary of data shall be in the form and the manner prescribed by the APCO.

7.2 Data shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement of the District, the ARB and the Environmental Protection Agency.

7.3 Records from the monitoring equipment shall be kept by the owner for a period of two (2) years. The records shall be in permanent form, shall be suitable for inspection and shall be made available to the ARB and the District upon request. The records shall at a minimum include:

7.3.1 The occurrence and duration of any start-up, shutdown or malfunction in the operation of any affected facility;

7.3.2 Performance testing, evaluations, calibrations, checks, adjustments and maintenance of any continuous emission monitors that have been installed pursuant to this rule; and

7.3.3 Emission measurements.

8.0 Quarterly Report

Owners or operators subject to Section 4.0 shall submit a written report for each calendar quarter to the APCO. The report is due by the 30th day following the end of the calendar quarter and shall include:

8.1 Time intervals, data and magnitude of excess emissions, nature and cause of the excess (if known), corrective actions taken and preventive measures adopted.

8.2 Averaging period used for data reporting corresponding to averaging period specified in the emission test period used to determine compliance with an emission standard for the pollutant/source category in question.

8.3 Time and date of each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of system repairs and adjustments.

8.4 A negative declaration when no excess emissions occurred.

8.5 Reports on opacity monitors giving the number of three (3) minute periods during which the average opacity exceeded the standard for each hour of operation. The averages may be obtained by integration over the averaging period or by arithmetically averaging a minimum of four (4) equally spaced instantaneous opacity measurements per minute. Any time period exempted shall be considered before determining the excess averages of opacity.

9.0 Violations

A violation of emission standards of these rules, as shown by the stack-monitoring system, shall be reported by such person to the Air Pollution Control Officer within 96 hours.

10.0 Breakdown of Monitoring Equipment

In the event of a breakdown of monitoring equipment, the owner shall notify the APCO as soon as reasonably possible, but no later than eight (8) hours after its detection, unless the owner or operator demonstrates to the APCO's satisfaction that a longer reporting period was necessary, and shall initiate repairs. The owner shall inform the APCO of the intent to shut down any monitoring equipment at least 24 hours prior to the event.

11.0 Inspections

The APCO or an authorized representative shall inspect, as he determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly.

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5/24/94

RULE 1081 SOURCE SAMPLING (Adopted April 11, 1991; Amended December 17, 1992; Amended December 16, 1993)

1.0 Purpose

The purpose of this rule is to ensure that any source operation which emits or may emit air contaminants provides adequate and safe facilities for use in sampling to determine compliance. This rule also specifies methods and procedures for source testing, sample collection, and compliance determination.

2.0 Applicability

The provisions of this rule shall apply to any source operation which emits or may emit air contaminants.

3.0 Sampling Facilities

Upon the request of the APCO and as directed by him, the owner of any source operation which emits or may emit air contaminants, for which emission limits have been established, shall provide the following facilities, constructed in accordance with the general industry safety orders of the State of California.

3.1 Sampling ports: Sampling port locations must be determined according to criteria in the California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Emission Monitoring and Testing.

3.2 Sampling platforms: Sampling platforms must be constructed according to specifications shown in the Air Resources Board publication entitled Supplement to Stationary Source Test Methods, Volume I, Appendix A, page 1-A-15.

3.3 Access to sampling platforms: In addition to the general industry safety orders of the State of California Title 14, Number 32776, Chapter 4, Subchapter 7, pertaining to ladders, all ladders accessing sampling platforms on any stack, chimney, or other structure will be caged and equipped with rest platforms at 20 foot intervals.

4.0 Collection of Samples

The owner of such a source operation, when requested by the APCO, shall provide records or other information which will enable the APCO to determine when a representative sample can be taken. In addition, upon the request of the APCO and as directed by him, the owner of such a source operation shall collect, have collected, or allow the APCO to collect, a source sample.

5.0 Test Methods

The applicable test method, if not specified in the rule, shall be conducted in accordance with Title 40 CFR Subpart 60 Appendix A - Reference Methods, except PM_{10} for compliance with Rule 2201 (New and Modified Stationary Source Review) requirements shall be conducted in accordance with Title 40 CFR Subpart 51, Appendix M, Method 201 or 201A. Where no test method exists in the preceding references for a source type, source sampling shall be conducted in accordance with CARB approved methods.

6.0 Test Procedures

6.1 For the purpose of determining compliance with an applicable standard or numerical limitation, the arithmetic mean of three (3) test runs shall apply, unless two (2) of the three (3) results are above the applicable limit. If two (2) of three (3) runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit.

6.2 A scheduled source test may not be discontinued solely due to the failure of one or more runs to meet applicable standards.

6.3 In the event that a sample is accidentally lost or conditions occur in which one (1) of the three (3) runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sampling train, extreme meteorological conditions presenting a hazard to the sampling team, or other circumstances beyond the owner or operators control, upon the APCO's approval, compliance may be determined using the arithmetic mean of the other two (2) runs.

7.0 Administrative Requirements

7.1 The District must be notified 30 days prior to any compliance source testing and the owner shall submit a source test plan for District approval 15 days prior to source sampling.

7.2 Source sampling to determine the compliance status of an emissions source shall be witnessed or authorized by District personnel.

7.3 Source test reports must be submitted to the District within 60 days of completion of field testing. Source tests must be submitted for all District authorized compliance source tests regardless of pass, fail or reschedule because of failure, status. A District authorized compliance source test shall not be discontinued solely due to the failure of one (1) or more runs to meet applicable standards.

RULE 1090 PENALTY (Adopted June 18, 1992, Amended December 17, 1992)

1.0 Applicability

This rule shall apply to any person or source operation required to comply with any of the San Joaquin Valley Unified Air Pollution Control District Rules and Regulations.

2.0 Requirements

Any person who violates any provisions of these Rules and Regulations is guilty of a misdemeanor and is liable for a penalty as provided for in the California Health and Safety Code. Every day during any portion of which such violation occurs constitutes a separate offense.

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9/28/94

RULE 1110 CIRCUMVENTION (Adopted June 18, 1992, Amended December 17, 1992)

1.0 Applicability

This rule shall apply to any source operation which emits or may emit air contaminants.

2.0 Requirements

A person shall not build, erect, install, or use any source operation, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces, dilutes or conceals an emission which would otherwise constitute a violation of Division 26 of the Health and Safety Code of the State of California or of these Rules and Regulations. This rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California or of Rule 4102 (Nuisance) of these Rules and Regulations. Violation of this rule is a misdemeanor pursuant to the provisions of Section 42400 of the Health and Safety Code of the State of California.

9/28/94

RULE 1130 SEVERABILITY (Adopted June 18, 1992, Amended December 17, 1992)

1.0 Applicability

This rule shall apply to any person or source operation required to comply with any of the San Joaquin Valley Unified Air Pollution Control District Rules and Regulations.

2.0 Requirements

If any provision, clause, sentence, paragraph, section or part of these Rules or Regulations or application thereof to any person or circumstance shall for any reason be adjudged by a court of competent jurisdiction to be unconstitutional or invalid, such judgement shall not affect or invalidate the remainder of these Rules or Regulations and the application of such provision to other persons or circumstances, but shall be confined in its operation to the provision, clause, sentence, paragraph, section or part thereof directly involved in the controversy in which such judgement shall have been rendered and to the person or circumstance involved, and it is hereby declared to be the intent of the San Joaquin Valley Unified Air Pollution Control Board that these Regulations would have been adopted in any case had such invalid provision or provisions not been included.

9/25/94

RULE 1140 APPLICABILITY OF EMISSION LIMITS (Adopted June 18, 1992, Amended December 17, 1992)

1.0 Applicability

This rule shall apply to any source operation which emits or may emit air contaminants.

2.0 Requirements

Whenever more than one rule of these Rules and Regulations applies to any source operation, the rule or combination of rules resulting in the smallest rate or smallest concentration of air contaminants released to the atmosphere shall apply unless otherwise specifically exempted or designated.

9/25/94

RULE 1150 SEPARATION AND COMBINATION (Adopted June 18, 1992, Amended December 17, 1992)

1.0 Applicability

This rule shall apply to any single source operation which emits or may emit air contaminants through two (2) or more emission points or to any two (2) or more source operations where the air contaminants are combined prior to emission.

2.0 If air contaminants from a single source operation are emitted through two (2) or more emission points, the total emitted quantity of any air contaminant limited by these Rules and Regulations cannot exceed the quantity which would be the allowable emission through a single emission point. The total emitted quantity of any such air contaminant shall be taken as the product of the highest concentration measured in any of the emission points and the combined exhaust gas volume through all emission points, unless the person responsible for the source operation establishes, to the satisfaction of the APCO, the correct total emitted quantities.

3.0 If air contaminants from two (2) or more source operations are combined prior to emission and there are adequate and reliable means reasonably susceptible to confirmation and use by the APCO for establishing a separation of the components of the combined emission to indicate the nature, extent, quantity and degree of emission arising from each such source operation, these regulations shall apply to each such source operation separately.

4.0 If air contaminants from two (2) or more source operations are combined prior to emission, and the combined emission cannot be separated according to the requirements of Section 3.0 of this rule, these regulations shall be applied to the combined emission as if it originated in a single source operation subject to the most stringent limitations and requirements placed by these regulations on any of the source operations whose air contaminants are so combined.

1/11/93

RULE 1160 EMISSION STATEMENTS (Adopted November 18, 1992)

1.0 Purpose

The purpose of this rule is to provide the District with an accurate accounting of emissions from significant sources with which the District and ARB can compile an accurate inventory.

2.0 Applicability

The provisions of this rule apply to all owners and operators of any stationary source category which emits or may emit nitrogen oxides or reactive organic compounds.

3.0 Definitions

3.1 Emission Data Survey Form: a form provided by the APCO that specifies information necessary to calculate estimated actual emissions.

3.2 Responsible Official: the person officially responsible for data presented in the emissions statement; the responsible official is liable to legal review or in case of fault, to penalties.

3.3 Stationary Source: any building, structure, facility, or installation which emits or may emit any air pollutant.

4.0 Exemptions

The APCO may waive the requirements of this section for any class or category of stationary sources which emit less than 25 tons per year of nitrogen oxides or reactive organic gases if the District provides the Air Resources Board with an emission inventory of sources emitting greater than 10 tons per year of nitrogen oxides or reactive organic gases based on the use of emission factors acceptable to the Air Resources Board.

5.0 Requirements

The owner or operator of any stationary source operation that emits or may emit nitrogen oxides or reactive organic compounds shall provide the APCO with a written statement in such form that the APCO prescribes, showing actual emissions of nitrogen oxides and reactive organic compounds from that source. At a minimum the Emission Statement shall contain all of the information contained in the Air Resources Board's Emission Inventory Turn Around Document as described in "Instructions for the Emission Data System Review and Update Report."

The owner or operator of any stationary source subject to this section may comply with the provisions of this section by satisfying either of the following requirements:

5.1 The owner or operator shall return an Emission Statement to the APCO. The Emission Statement shall contain all information requested in the Emission Data Survey Form and emission estimates. This Emission Statement shall be certified by the responsible official of the source and shall state that the information contained in the Emission Statement is accurate to the best knowledge of the individual certifying the statement.

5.2 The owner or operator shall complete and return an Emission Data Survey Form to the APCO. The District shall estimate actual emissions based on the data contained in the Emission Data Survey Form. The emissions estimates calculated by the District shall be provided to the owner or operator of the source and shall be certified by the responsible official and returned to the District. This Emission Statement shall state that the information contained in the Emission Statement is accurate to the best knowledge of the individual certifying the statement.

6.0 Compliance Schedule

The first Emission Statement shall cover calendar year 1992 emissions and shall be submitted to the District by June 1, 1993. Emission Statements shall be submitted annually thereafter.

9/28/94

RULE 2010 PERMITS REQUIRED (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to require any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate. This rule also explains the posting requirements for a Permit to Operate and the illegality of a person willfully altering, defacing, forging, counterfeiting or falsifying any Permit to Operate.

2.0 Applicability

The provisions of this rule shall apply to any person who plans to or does operate, construct, alter, or replace any source operation which may emit air contaminants or may reduce the emission of air contaminants.

3.0 Authority to Construct

Any person building, altering or replacing any operation, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants, shall first obtain authorization for such construction from the APCO. An Authority to Construct shall remain in effect until the Permit to Operate the source operation for which the application was filed is granted or denied, or the application is canceled as described in Rule 2050 (Cancellation of Application).

4.0 Permit to Operate

Before any new or modified source operation described in Section 3.0, or any existing source operation so described may be operated, a written permit shall be obtained from the APCO. No Permit to Operate shall be granted either by the APCO or the Hearing Board for any source operation described in Section 3.0 constructed or installed without authorization as required by Section 3.0 until the information required is presented to the APCO and such source operation is altered, if necessary, and made to conform to the standards set forth in Rule 2070 (Standards for Granting Applications) and elsewhere in these rules and regulations.

4.1 New Equipment

A person shall notify the APCO before operating or using any source operation granted an Authority to Construct. Upon such notification, the Authority to Construct shall serve as a temporary Permit to Operate for the source operation until the Permit to Operate is granted or denied. The

source operation shall not be operated contrary to the conditions specified in the Authority to Construct.

4.2 Modified Equipment

The Authority to Construct granted to modify any source operation having a valid Permit to Operate shall serve as a temporary Permit to Operate for the source operation until a new Permit to Operate is granted or denied. The modified source operation shall not be operated contrary to the conditions specified in the Authority to Construct. A person shall notify the APCO in writing when construction is completed.

4.3 Existing Equipment

When an application for a Permit to Operate is filed for any existing source operation, the application shall serve as a temporary Permit to Operate for the source operation. If the source operation was previously operated under a Permit to Operate and has not been altered, it shall not be operated under a temporary Permit to Operate contrary to the conditions specified in the previous Permit to Operate.

5.0 Posting of a Permit to Operate

A person who has been granted a Permit to Operate any source operation described in Section 4.0 shall firmly affix such Permit to Operate, an approved facsimile, or other approved identification bearing the permit number upon the source operation, in such a manner as to be clearly visible and accessible. In the event that the source operation is so constructed or operated that the Permit to Operate cannot be so placed, the Permit to Operate shall be mounted so as to be clearly visible in an accessible place within 25 feet of the source operation or maintained readily available at all times on the operating premises.

6.0 Altering of Permit

A person shall not willfully deface, alter, forge, counterfeit, or falsify a Permit to Operate any source

RULE 2020 EXEMPTIONS (Adopted September 19, 1991; Amended July 16, 1992; Amended December 17, 1992; Amended October 21, 1993; Amended July 21, 1994; Amended September 17, 1998; Amended June 21, 2001; Amended March 21, 2002; Amended December 19, 2002; Amended September 21, 2006; Amended December 20, 2007; Amended August 18, 2011)

1.0 Purpose

This rule specifies emissions units that are not required to obtain an Authority to Construct or Permit to Operate. This rule also specifies the recordkeeping requirements to verify the exemption and outlines the compliance schedule for emissions units that lose the exemption after installation.

2.0 Applicability

This rule shall apply to any source that emits or may emit air contaminants.

3.0 Definitions

3.1 Agricultural Source: equipment or operations that emit air contaminants and that are used in the production of crops or the raising of fowl or animals.

3.2 Clean Produced Water: as defined in Rule 1020 (Definitions).

3.3 Emissions Unit: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.4 HAP: a hazardous air pollutant listed in Section 112(b) of the federal Clean Air Act or the lists prepared by the California Air Resources Board pursuant to Section 44321 of the California Health and Safety Code that have OEHHA approved health risk values.

3.5 HAP Source: an emissions unit that is subject to an emissions limitation, a performance standard, work practice standard, or other requirements under an applicable provision of any of the following regulations:

3.5.1 National Emission Standards for Hazardous Air Pollutants (NESHAPS), Maximum Achievable Control Technology (MACT) standard, or other requirements promulgated pursuant to Section 112 of the federal Clean Air Act (42 U.S. Code, 7401, et. seq.).

3.5.2 Airborne Toxic Control Measures (ATCM) adopted by the California Air Resources Board in accordance with requirements of Section 39658 of the California Health and Safety Code.

3.5.3 A rule contained in Regulation VII (Toxic Air Pollutants) of the District Rules and Regulations.

3.6 Indirect Heat Transfer System: a heat transfer system in which the products of combustion do not come into direct contact with the material being heated.

3.7 Location: any single site at a building, structure, facility, or installation.

3.8 Low Emitting Unit: an emissions unit with an uncontrolled emissions rate of each air contaminant,

3.8.1 Less than or equal to two pounds per day, or

3.8.2 If greater than two pounds per day, is less than or equal to 75 pounds per year.

3.9 Major Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.10 NSPS Source: an emissions unit that is subject to an emissions limitation, performance standard, work practice standard, or other requirements under an applicable provision of 40 CFR, Part 60, New Source Performance Standards (NSPS).

3.11 Portable Emissions Unit: as defined in Rule 2280 (Portable Equipment Registration).

3.12 Reconstructed Stationary Source: a Reconstructed Stationary Source as defined in Rule 2201 (New and Modified Stationary Source Review), or a Reconstruction as defined in 40 CFR Part 60 Subpart A.

3.13 Roadmix: a mixture of tank bottoms from crude oil storage tanks, material from crude oil spills, or other crude-oil-containing soil mixed with aggregates and soils, that is used as a base or cover material for roads, parking lots, berms, tank and well locations, or similar applications.

3.14 Routine Replacement: as defined in Rule 2201 (New and Modified Stationary Source Review).

3.15 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review).

3.16 True Vapor Pressure: as defined in Rule 4623 (Storage of Organic Liquids).

3.17 Unloading Rack: any aggregate or combination of equipment or control equipment that unloads organic liquid into a storage tank from tank trucks, trailers, or railroad tank cars. The unloading rack is the portion of the connection system from the connection at the inlet of the organic liquid pump to and including the hose and connector at the delivery tank.

3.18 Wind Machine: a machine consisting of a large fan mounted on a tower and powered by an internal combustion engine, used exclusively to provide frost protection to agricultural crops by affecting a heat transfer by moving warmer atmospheric air downward and mixing it with the colder air surrounding a crop.

4.0 Precluded Source Categories

No Authority to Construct or Permit to Operate shall be required for the following source categories that are specifically precluded from District permitting requirements by state or federal law:

4.1 Any structure designed for and used exclusively as a dwelling for not more than four families and any incinerator used exclusively in connection with such structure (California Health and Safety Code Section 42310(b) and (c)).

4.2 Barbecue equipment that is not used for commercial purposes, (California Health and Safety Code Section 42310(d)).

4.3 Motor vehicles as defined by the Vehicle Code of the State of California (California Health and Safety Code, Section 42310(a)), but not including any emissions unit mounted on such vehicle that would otherwise require a permit under the provisions of the District Rules and Regulations.

4.4 Locomotives, airplanes, and watercraft used to transport passengers or freight. This exemption is not intended to apply to equipment used for the dredging of waterways or to equipment used in pile driving adjacent to or in waterways.

5.0 District Permit Exemptions

An Authority to Construct or Permit to Operate shall not be required for an emissions unit covered under District Exempt Source Categories listed in Sections 6.0 or 7.0, unless one or more of the following is true:

5.1 The source is a NSPS source;

5.2 The source is a HAP source;

5.3 The APCO makes a determination that a permit shall be required because the source may not operate in compliance with all District rules and regulations; or

5.4 The owner specifically requests a Permit to Operate.

6.0 District Exempt Source Categories

Except as required by Section 5.0, no Authority to Construct or Permit to Operate shall be required for an emission unit specified below. All other equipment within that source category shall require an ATC or PTO.

6.1 Combustion and Heat Transfer Systems

6.1.1 Steam generators, steam superheaters, water boilers, water heaters, steam cleaners, and closed indirect heat transfer systems that have a maximum input heat rating of 5,000,000 Btu per hour (gross) or less and is equipped to be fired exclusively with:

6.1.1.1 Natural gas containing no more than five (5) percent by weight hydrocarbons heavier than butane and no more than 1.0 grain of total sulfur per 100 standard cubic feet of gas; or

6.1.1.2 Liquefied petroleum gas containing no more than two (2) percent by volume hydrocarbons heavier than butane and no more than 15 grains of total sulfur per 100 standard cubic feet of gas; or

6.1.1.3 Any combination of gases specified in Sections 6.1.1.1 and 6.1.1.2.

6.1.1.4 The percent by weight hydrocarbons content heavier than butane shall be determined by using the latest version of ASTM E-260 (Standard Practice for Packed Column Gas Chromatography).

6.1.1.5 The gas sulfur content shall be determined by using the latest version of ASTM D-1072 (Standard Test Method for Total Sulfur in Fuel Gases by Combustion and Barium Chloride Titration), ASTM D-3246 (Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry), or ASTM D-6228 (Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection).

6.1.1.6 Test methods other than specified in Section 6.1.1.4 or Section 6.1.1.5 may be used provided they have been approved, in writing, by the United States Environmental Protection Agency (EPA) and the District Air Pollution Control Officer (APCO).

6.1.2 Piston type internal combustion engines with a manufacturer's maximum continuous rating of 50 braking horsepower (bhp) or less.

6.1.3 Gas turbine engines with a maximum heat input rating of 3,000,000 Btu per hour or less at ISO Standard Day Conditions.

6.1.4 Equipment used exclusively for space heating, other than boilers.

6.1.5 Multiple chambered or equivalent incinerators used to destroy animals from a wildlife habitat for the sole purpose of disease control, as authorized by a public official.

6.1.6 Wind machines.

6.2 Cooling Towers: Water cooling towers that have a circulation rate of less than 10,000 gallons per minute, and that are not used for cooling of process water, water from barometric jets, or water from barometric condensers.

6.3 Graphic Arts Equipment: Printing, coating, or laminating facility with a total graphic arts material usage of:

6.3.1 Less than or equal to two gallons per any day, or

6.3.2 If greater than two gallons per day, is less than or equal to 30 gallons per year.

6.3.3 Graphic arts materials are any ink, coating, adhesive, fountain solution, thinner, retarder, or cleaning solution.

6.4 Food Processing Equipment

6.4.1 Equipment, excluding charbroilers subject to Rule 4692 (Commercial Charbroiling) and boilers, used in eating establishments or other retail establishments for the purpose of preparing food for human consumption.

6.4.2 Mixers and blenders used in bakeries where the products are edible and intended for human consumption.

6.4.3 Ovens at bakeries provided that the total production from the bakery is less than 1,000 pounds of product per operating day and the oven is fired solely on natural gas and the oven has a rating less than 5 MMBtu per hour.

6.4.4 Smokehouses for preparing food in which the maximum horizontal inside cross-sectional area does not exceed 20 square feet.

6.5 Plastic/Rubber Processing: Emissions units used exclusively for the extruding or the compression molding of rubber products or plastics, where no plasticizer or blowing agent is present.

6.6 Storage Equipment: Containers, reservoirs, or tanks used exclusively for:

6.6.1 The storage or processing of clean produced water as represented in Figure 1 as being below the oil/water line.

6.6.2 The storage of crude oil with 0.8762 specific gravity or higher (30°API or lower) as measured by test method API 2547 or ASTM D-1298-80, having a capacity of 100 bbl or less, and is not subject to a VOC control requirement of Rule 4623 (Storage of Organic Liquids).

6.6.3 The storage of crude oil with specific gravity lower than 0.8762 (greater than 30°API) as measured by test method API 2547 or ASTM D-1298-80, and existing before June 1, 1989, having a capacity of 100 bbl or less, and is not subject to a VOC control requirement of Rule 4623 (Storage of Organic Liquids). This exemption shall not apply to a new tank installed after June 1, 1989.

6.6.4 The storage of organic material with a capacity of 250 gallons or less where the actual storage temperature does not exceed 150°F.

6.6.5 The unheated storage of organic material with an initial boiling point of 302°F or greater as measured by test method ASTM D-86.

6.6.6 The storage of fuel oils or non-air-blown asphalt with 0.9042 specific gravity or higher (25°API or lower) as measured by test method API 2547 or ASTM D-1298-80.

6.6.7 The storage of petroleum distillates used as motor fuel with 0.8251 specific gravity or higher (40°API or lower) as measured by test method API 2547 or ASTM D-1298-80 and having a capacity of 19,800 gallons (471 bbl) or less.

6.6.8 The storage of refined lubricating oils.

6.6.9 The storage of liquefied gases in unvented (except for emergency pressure relief valves) pressure vessels.

6.6.10 The storage of produced fluids in portable tanks, to be used for less than six months at any one (1) location and is not subject to a VOC control requirement of Rule 4623 (Storage of Organic Liquids).

6.6.11 Mobile transport, delivery, or cargo tanks on vehicles for delivery of VOCs.

6.7 Transfer Equipment

6.7.1 Loading racks, as defined in Rule 1020 (Definitions), and unloading racks that are:

6.7.1.1 At a location that, in total, transfers less than 4,000 gallons in any one day of organic material through all loading and unloading racks, and the organic material is exclusively:

6.7.1.1.1 Unheated organic materials with an initial boiling point of 302°F or greater as measured by test method ASTM D-86, or

6.7.1.1.2 Fuel oil with 0.8251 specific gravity or higher (40°API or lower) as measured by test method API 2547 or ASTM D-1298-80.

6.7.1.2 Used exclusively for the transfer of:

6.7.1.2.1 Crude oil, asphalt, or residual oil stored in tanks not required to be permitted in accordance with this rule; or

6.7.1.2.2 Crude oil with 0.8762 specific gravity or higher (30°API or lower) as measured by test method API 2547 or ASTM D-1298-80 and the crude oil has TVP less than 1.5 psia at the storage container's maximum organic liquid storage temperature.

6.7.1.3 Attached to an organic material delivery vehicle and used exclusively for the transfer of crude oil, asphalt, or residual oil.

6.7.2 Equipment used exclusively for the transfer of refined lubricating oil.

6.7.3 The TVP of an organic liquid shall be determined by measuring the Reid Vapor Pressure (RVP) using ASTM D 323-94 (Test Method for Vapor Pressure for Petroleum Products), and converting the RVP to TVP at the tank's maximum organic liquid storage temperature. The conversion of RVP to TVP shall be performed in accordance with the procedures in the oil and gas section of "ARB Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588", dated August 1989.

6.7.4 The latest version of the Lawrence Berkeley National Laboratory "Test Method for Vapor Pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA, shall be used to determine the TVP of crude oil with an API gravity of 26 degrees or less, or for any API gravity that is specified in this test method.

6.7.5 Test method other than specified in Section 6.7.3 and 6.7.4 may be used provided it has been approved, in writing, by the United States Environmental Protection Agency (EPA) and the District Air Pollution Control Officer (APCO).

6.8 Surface Coating Operations

6.8.1 Application equipment for architectural surface coatings used for commercial or residential applications. Architectural surface coating is defined as any coating applied to stationary structures and their appurtenances, to mobile homes, to pavements, or to curbs. This exemption does not apply to coating application equipment used in the manufacturing of architectural components and appurtenances that are coated before their installation as part of a structure.

6.8.2 Surface coating operations, except for powder coating operations, which use less than one quart of coating per day or less than eight gallons of coating per year.

6.8.3 Powder coating operations that use less than five pounds of coating material per day or less than fifty pounds of coating material per year.

6.9 Solvent Cleaning Operations

Unheated, nonconveyorized cleaning equipment (not including the control enclosures):

6.9.1 With an open surface area of 10.0 square feet or less, and internal volume of 92.5 gallons or less;

6.9.2 Using only organic solvents with an initial boiling point of 248°F or greater as determined by ASTM 1078-78; and

6.9.3 From which less than 25 gallons of solvent per year are lost to the atmosphere from all such equipment at the stationary source. Solvent lost shall not include solvent that is recycled or disposed of properly. Any person claiming exemption pursuant to this section shall maintain adequate monthly records to substantiate their exempt status.

6.10 Brazing, soldering, or welding equipment.

6.11 Equipment used exclusively to compress or hold dry natural gas. Any internal combustion engine or other emissions unit associated with the operation that would otherwise require a written permit is not exempt.

6.12 Fugitive emissions sources such as valves and flanges associated with an emissions unit that is exempt from a written permit.

6.13 Unvented (except for emergency pressure relief valves) pressure vessels associated with an emissions unit that is exempt from a written permit.

6.14 Fugitive emissions sources and pressure vessels that are associated with an emissions unit for which a written permit is required shall be included as part of such emissions unit. A separate permit for the fugitive source or pressure vessel is not required.

6.15 Pits and ponds as defined in Rule 1020 (Definitions).

6.16 Portable Emissions Units: a portable emissions unit for which a written permit is otherwise required, shall be exempt from the permitting requirements provided that all of the following conditions are met:

6.16.1 The emissions unit has a valid registration obtained in accordance with the provisions of Rule 2280 (Portable Equipment Registration), the Statewide Portable Equipment Registration Program (California Code of Regulation Title 13, Division 3, Chapter 9, Article 5, Sections 2450-2465), or other equipment registration program approved by the APCO; and

6.16.2 The portable emissions unit is not subject to the District's Title V permitting requirements (Rule 2520, Federally Mandated Operating Permits).

6.17 Roadmix manufacturing and application operations

6.17.1 Roadmix manufacturing operations, provided that:

6.17.1.1 The roadmix is used exclusively on properties owned or operated by the company which operates the roadmix manufacturing operation and generated the roadmix feedstock, excluding aggregates, and

6.17.1.2 The roadmix feedstock does not contain refined hydrocarbons.

6.17.1.3 Notwithstanding the provisions of Section 6.17.1.1, an exempt roadmix manufacturing operator may donate roadmix material to non-profit organizations.

6.17.2 Roadmix application operations.

6.18 Laboratory testing equipment and quality control testing equipment used exclusively for chemical and physical analysis, provided:

6.18.1 Emissions from such equipment do not exceed 2.0 pounds per day or 75 pounds per year, and

6.18.2 The equipment is not a HAP source.

6.19 Low Emitting Units, except those which belong to a source category listed in Sections 6.1 through 6.18 shall not require an Authority to Construct or Permit to Operate.

6.19.1 Low Emitting Units, which belong to a source category listed in Sections 6.1 through 6.18, shall require an Authority to Construct or Permit to Operate unless they are specifically exempted in the applicable source category section.

6.19.2 Notwithstanding Sections 6.19 and 6.19.1, Low Emitting Units, with uncontrolled HAP emissions that may cause a significant health risk to the public, shall require an Authority to Construct or Permit to Operate.

6.20 Agricultural Sources

6.20.1 Agricultural sources at a stationary source that, in aggregate, produce actual emissions less than one-half of the major source thresholds. For the purposes of determining permitting applicability, fugitive emissions, except fugitive dust emissions, are included in determining aggregate emissions.

6.20.2 In no case shall the exemption in Section 6.20.1 apply to a stationary source required to obtain Title V permits according to Rule 2520 (Federally Mandated Operating Permits).

7.0 District Exempt Activities

No Authority to Construct or Permit to Operate shall be required for the following activities:

7.1 Routine replacement of a whole or partial emissions unit where the replacement part is the same as the original emissions unit in all respects except for the serial number and the action does not create a reconstructed Stationary Source.

7.2 The venting of California Public Utility Commission quality natural gas from pipelines and compressors for the sole purpose of pipeline and compressor repair and or maintenance, providing that such emissions consist solely of residual natural gas that is vented after the equipment is isolated or shut down and that the residual amounts have been reduced as much as practical prior to venting.

7.3 Repairs or maintenance not involving structural changes to any emissions unit for which a permit has been granted (California Health and Safety Code, Section 42310(a)(5)(A)).

7.4 The detonation of explosives for research and development activity, provided the quantity of explosives detonated does not exceed 100 pounds per day and 1,000 pounds per year at a single stationary source.

7.5 Pilot tests for soil remediation projects, provided that all of the following conditions are met:

7.5.1 The sole purpose of the pilot test is to determine the VOC concentration in the soil in order to design or size the appropriate control equipment for the soil remediation project;

7.5.2 The pilot test will not last more than five days; and

7.5.3 The effluent gas stream from the pilot test is controlled by either carbon canisters, a thermal or catalytic incinerator, or an IC engine.

8.0 Administrative Requirements

Recordkeeping shall be required to verify or maintain any exemption for which the exemption is based on a throughput or emissions limitation. Such records shall be retained for at least two years and provided to the APCO upon request.

9.0 Compliance Schedule

The owner or operator of an emissions unit that was exempt from written permits at the time of installation, which becomes subject to the provisions of Rule 2010 (Permits Required), through loss of exemption, shall submit an application for a Permit to Operate within six months from the date of adoption of this rule and shall not be subject to Rule 2201 (New and Modified Stationary Source Review Rule), until such time that the emissions unit is modified.

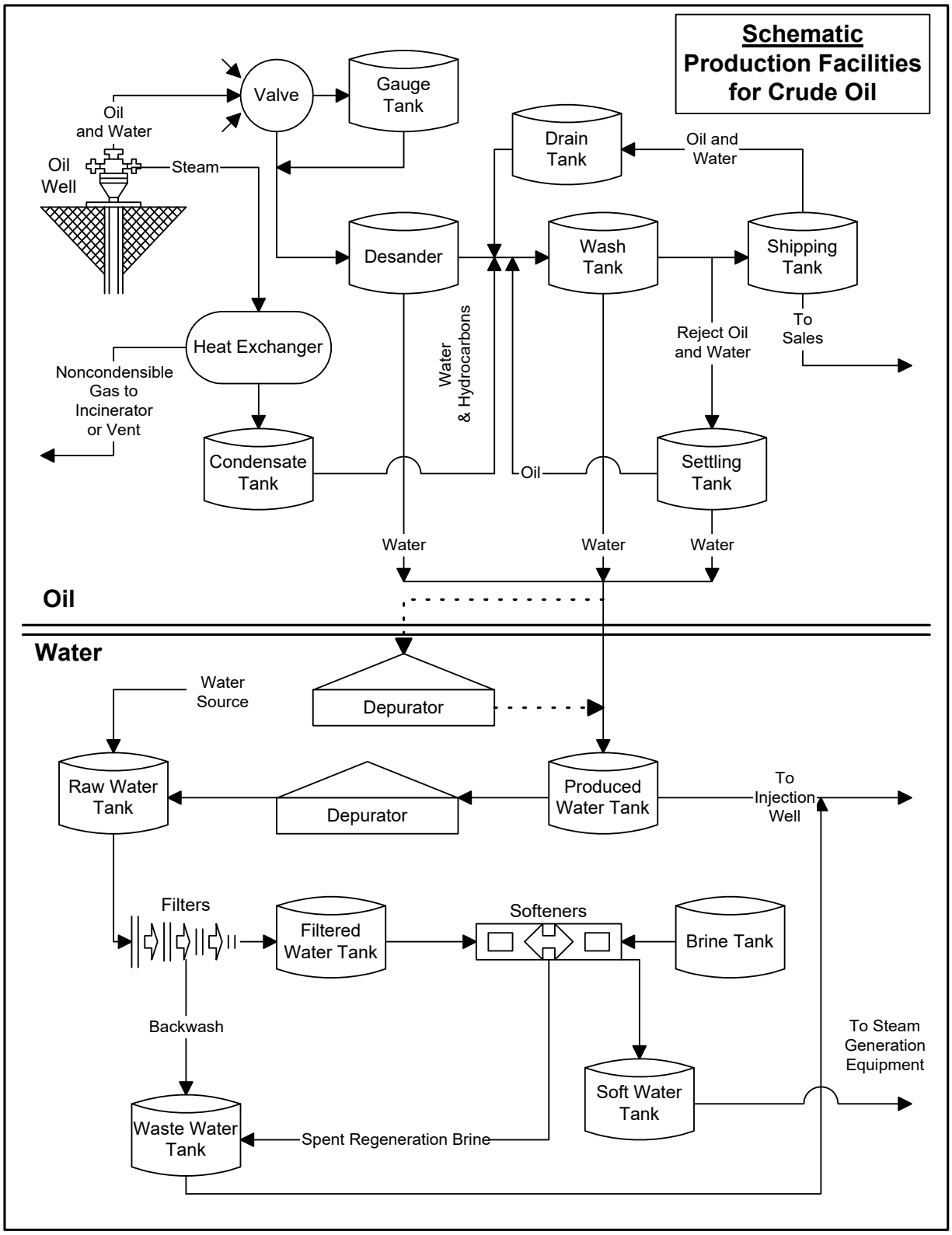


Figure 1 Oil/water line

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RULE 2021 EXPERIMENTAL RESEARCH OPERATIONS (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

This rule defines experimental research operations and the conditions which must be meet in order for the operation to qualify for exemption of Regulation II (Permits).

2.0 Applicability

This rule shall apply to any owner or operator of a source operation which emits or may emit air contaminants and which meets the criteria specified for experimental research operations.

3.0 Definitions

3.1 Experimental Research Operations: any air pollution control device or technology or any industrial process or technology with reduced emissions which is:

3.1.1 Innovative,

3.1.2 Not in common use for a particular process,

3.1.3 Not readily available from a commercial supplier, or

3.1.4 Funded as original research by a public agency.

4.0 Requirements

The APCO may exempt experimental research operations from the requirements of Rule 2010 (Permits Required) if the following requirements are met. Failure to satisfy any of these requirements will result in the revocation of an exemption and require compliance with the requirements of Rule 2010 (Permits Required).

4.1 The purpose of the operation is to permit investigation, experimentation or research to advance the state of knowledge or the state of art of a particular control technology or industrial process;

4.2 The APCO shall be notified, in writing, of the purpose, goals and objectives of the project, measures to be taken to minimize the emission of air contaminants, the proposed installation date, the planned start-up date, the expected duration of the test, and test schedules and the amount and duration of emissions shall be minimal as determined by the APCO.

4.3 The cumulative total days of operation shall not exceed 180 calendar days. If the applicant intends to continue operation of the technology or process for more than 180 days, a compliance schedule for obtaining necessary permits under Regulation II (Permits) shall be established by the APCO;

4.4 Official test results (if the project involves air pollution control devices) shall be submitted to the District, in writing and in final form, no more than 60 days after each test sequence is complete;

4.5 The APCO shall have granted prior written approval.

11/18/93

RULE 2031 TRANSFER OF PERMITS (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Applicability

This rule shall apply to any source operation which emits or may emit air contaminants and which is required to obtain an Authority to Construct or a Permit to Operate.

2.0 Requirements

A Permit to Operate or an Authority to Construct shall not be transferable, whether by operation of law or otherwise, from one location to another, from one (1) piece of equipment to another, or from one (1) person to another, unless a new application is filed with and approved by the APCO.

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SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

RULE 2050 CANCELLATION OF APPLICATION (Adopted May 21, 1992; Amended December 17, 1992; Amended December 16, 1993)

1.0 Purpose

The purpose of this rule is to explain the cancellation and renewal procedures for an Authority to Construct and a Permit to Operate and the applications for each.

2.0 Applicability

This rule shall apply to any Authority to Construct or to any application for an Authority to Construct or Permit to Operate.

3.0 Definitions

3.1 Commence: as applied to construction, the owner or operator has all necessary preconstruction approvals or permits and either has:

3.1.1 Begun, or caused to begin, a continuous program of actual onsite construction of the source to be completed within a reasonable time; or

3.1.2 Entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of actual construction of the source to be completed within a reasonable time.

4.0 Authority to Construct Applications

4.1 An Authority to Construct shall expire and the application shall be canceled two years from the date of issuance unless the applicant has commenced construction.

4.2 Notwithstanding section 4.1, the following Authorities to Construct permits may be renewed indefinitely if the renewal represents no emissions change or an actual emission reduction not currently required by rule, regulation or order:

4.2.1 Permits for control technology or equipment,

4.2.2 Permits representing emission reductions not required by rule, regulation or order or no emission changes,

4.2.3 Permits to convert to an alternate fuel for a piece of equipment which has a Permit to Operate or is operating but is exempt from permit requirements.

4.3 An Authority to Construct shall be renewed for one (1) additional two (2) year period upon receipt of an application for renewal from the applicant provided the APCO finds the applicant cannot commence construction because all necessary preconstruction approvals or permits have not been obtained. Applications for these approvals or permits shall have been filed prior to the expiration of the initial issuance of the Authority to Construct.

4.4 An Authority to Construct shall be renewed for one (1) additional two (2) year period upon receipt of an application provided the APCO finds the facility has experienced an economic downturn, or the Authority to Construct is a part of a larger project which has commenced construction.

4.4.1 For an economic downturn, the applicant for a specific project must demonstrate to the satisfaction of the APCO that it is not economically feasible to proceed due to the current value of its product and that there is reasonable probability the project will be economically feasible within the foreseeable future, i.e. within two (2) years.

4.4.2 For an Authority to Construct to be considered part of a larger project, at the time the initial application is filed, it must be described as a part of that project.

4.5 Except for the provisions of section 4.2, in no case shall any Authority to Construct be renewed for more than one two-year period.

5.0 Permit to Operate Applications

An application for a Permit to Operate shall be canceled two (2) years from the date of the filing of the application, unless it is renewed.

11/18/93

RULE 2070 STANDARDS FOR GRANTING APPLICATIONS (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to explain the standards by which an APCO may deny an application for an Authority to Construct or Permit to Operate. Any source operation must be constructed and operated in accordance with Rule 2201 (New and Modified Stationary Source Review Rule), Rule 4001 (New Source Performance Standards), and Rule 4002 (National Emissions Standards for Hazardous Air Pollutants), the Authority to Construct, and the Permit to Operate.

2.0 Applicability

The provisions of this rule shall apply to any source operation required to obtain a permit according to Rule 2010 (Permits Required).

3.0 Compliance with Emission Limitations

The APCO shall deny an Authority to Construct or a Permit to Operate except as provided by Rule 2040 (Applications), if the applicant does not show that the use of any source operation , which may cause the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants, is so designed, controlled, or equipped with such an air pollution control article, machine, equipment, or other contrivance, that it may be expected to operate without emitting or without causing to be emitted air contaminants in violations of Section 41700 or 41701 or 42301 of the Health and Safety Code or of these rules and regulations.

4.0 Compliance with New Source Review Rule

The APCO shall deny an Authority to Construct or a Permit to Operate for any new or modified stationary source which does not or will not comply with all applicable provisions of Rule 2201 (New and Modified Stationary Source Review Rule).

5.0 Compliance with New Source Performance Standards and National Emissions Standards For Hazardous Air Pollutants

The APCO shall deny an Authority to Construct or a Permit to Operate for any new or modified stationary source which does not or will not comply with all applicable provisions of Rule 4001 (New Source Performance Standards) and Rule 4002 (National Emissions Standards For Hazardous Air Pollutants).

6.0 Construction According to the Authority to Construct

In acting upon a Permit to Operate, if the APCO finds that the source operation has not been constructed in accordance with the Authority to Construct, the APCO shall deny the Permit to Operate. The APCO shall not accept any further application for the Permit to Operate the source operation so constructed until the APCO finds that the source operation has been constructed in accordance with the Authority to Construct.

7.0 Operation According to the Permit to Operate Conditions

A person shall not operate any source operation contrary to conditions specified on the Permit to Operate issued in accordance with the provisions of this rule.

4/18/93

RULE 2080 CONDITIONAL APPROVAL (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to grant authority to the APCO to issue or revise specific written conditions on an Authority to Construct or a Permit to Operate to assure compliance with air contaminant emission standards or limitations.

2.0 Applicability

The provisions of this rule shall apply to any source operation which emits or may emit air contaminants and is required to obtain a permit according to Rule 2010 (Permits Required).

3.0 Requirements

The APCO may issue an Authority to Construct or a Permit to Operate subject to conditions to insure the compliance of the operation of any source operation with the standards of Rule 2070 (Standards for Granting Applications), in which case the conditions shall be specified in writing. Commencing work under such an Authority to Construct or commencing operation under such a Permit to Operate shall be deemed acceptance of all the conditions so specified. The APCO shall issue an Authority to Construct or a Permit to Operate with revised conditions upon receipt of a new application, if the applicant demonstrates that the source operation can operate within the standards of Rule 2070 (Standards for Granting Applications) under the revised conditions.

4/18/93

RULE 2092 STANDARDS FOR PERMITS TO OPERATE (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to define the conditions which must be met in order for an APCO to issue a Permit to Operate.

2.0 Applicability

This rule shall apply to any source operation which emits or may emit air contaminants and is required to obtain a permit according to Rule 2010 (Permits Required).

3.0 Definitions

Except where the context indicates otherwise, words used in this rule are used in exactly the same sense as the same words in Rule 2201 (New and Modified Stationary Source Review Rule).

4.0 Requirements

4.1 The APCO shall deny a Permit to Operate for any new or modified stationary source or any portion thereof to which Rule 2201 (New and Modified Stationary Source Review Rule) applies unless:

4.1.1 The owner or operator of the source has obtained an Authority to Construct granted pursuant to Rule 2201 (New and Modified Stationary Source Review Rule); and

4.1.2 The APCO has determined that the source and any sources which provide offsets have been constructed and/or modified to operate, and emit quantities of air contaminants, consistent with the conditions imposed on their respective Authorities to Construct under the applicable sections of Rule 2201 (New and Modified Stationary Source Review Rule); and

4.1.3 The APCO has determined that any offsets required as a condition of an Authority to Construct or a Permit to Operate shall commence not later than the date of initial operation of the new or modified source, except that where a new or modified stationary source is, in whole or in part, a replacement for an existing stationary source on the same or contiguous property, the APCO may allow a maximum of 90 calendar days as a start-up period for simultaneous operation of the existing stationary source and the new or replacement source; and

4.1.4 The APCO has determined that all conditions specified in the Authority to Construct have been or will be complied with by any dates specified.

4.2 The APCO shall require as a condition for the issuance of any Permit to Operate for a new or modified source that the source and any offsetting source be operated consistently with any conditions imposed on their respective Authorities to Construct under the applicable sections of Rule 2201 (New and Modified Stationary Source Review).

5.0 Severability

If any portion of this rule is found to be unenforceable, such finding shall have no effect on the enforceability of the remaining portions of the rule which shall continue to be in full force and effect.

RULE 2201 NEW AND MODIFIED STATIONARY SOURCE REVIEW RULE (Adopted September 19, 1991; Amended March 11, 1992; Amended October 29, 1992; Amended December 17, 1992; Amended October 21, 1993; Amended June 15, 1995; Amended August 20, 1998; Amended June 21, 2001, but not effective until August 20, 2001; Amended April 25, 2002; Amended December 19, 2002; Amended April 20, 2005; Amended December 15, 2005; Amended September 21, 2006; Amended December 18, 2008, but not in effect until June 10, 2010; Amended April 21, 2011; Amended February 18, 2016; Amended August 15, 2019)

1.0 Purpose

The purpose of this rule is to provide for the following:

1.1 The review of new and modified Stationary Sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards; and

1.2 No net increase in emissions above specified thresholds from new and modified Stationary Sources of all nonattainment pollutants and their precursors.

2.0 Applicability

This rule shall apply to all new stationary sources and all modifications to existing stationary sources which are subject to the District permit requirements and after construction emit or may emit one or more affected pollutant. The requirements of this rule in effect on the date the application is determined to be complete by the Air Pollution Control Officer (APCO) shall apply to such application.

3.0 Definitions

3.1 Actual Emissions: emissions having occurred from a source, based on source test or monitoring data, actual fuel consumption, and process data. If source test or monitoring data is not available, other appropriate, APCO-approved, emission factors may be used.

3.2 Actual Emissions Reduction (AER): the decrease of actual emissions, compared to the Baseline Period, from an emissions unit and selected for use as emission offsets or ERC banking. AER shall meet the following criteria:

3.2.1 Shall be real, enforceable, quantifiable, surplus, and permanent.

3.2.2 To be considered surplus, AER shall be in excess, at the time the application for an Emission Reduction Credit or an Authority to Construct authorizing such reductions is deemed complete, of any emissions reduction which:

3.2.2.1 Is required or encumbered by any laws, rules, regulations, agreements, orders, or

3.2.2.2 Is attributed to a control measure noticed for workshop, or proposed or contained in a State Implementation Plan, or

3.2.2.3 Is proposed in the APCO's adopted air quality plan pursuant to the California Clean Air Act.

3.2.3 Emissions reductions attributed to a proposed control measure, which are excluded pursuant to Section 3.2.2.2 and 3.2.2.3 may be re-eligible as AER if the control measures identified in the District Air Quality Plan or State Implementation Plan (SIP), are determined not to be necessary for attainment or maintenance of Ambient Air Quality Standards and the APCO and United States Environmental Protection Agency (EPA) have approved amendments to the plan or SIP to reflect this determination.

3.3 Administrative Change: a change to an existing permit that:

3.3.1 Corrects typographical errors; or

3.3.2 Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source; or

3.3.3 Changes the components of emissions monitoring equipment or other components, which have no effect on the quantity of emissions from an emissions unit; or

3.3.4 Allows for the change of ownership or operational control of a source where the APCO determines that no other change is necessary.

3.4 Affected Pollutants: those pollutants for which an Ambient Air Quality Standard has been established by the EPA or by the California Air Resources Board, (ARB), and the precursors to such pollutants, and those pollutants regulated by the EPA under the Federal Clean Air Act or by the ARB under the Health and Safety Code including, but not limited to, VOC, NO_x, SO_x, PM2.5, PM10, CO, and those pollutants which the EPA, after due process, or the ARB or the APCO, after public hearing, determine may have a significant adverse effect on the environment, the public health, or the public welfare.

3.5 Agricultural Source: equipment or operations that emit air contaminants and that are used in the production of crops or the raising of fowl or animals.

3.6 Air Quality Improvement Deduction: a 10 percent discount factor applied to Actual Emission Reductions (AER) before the AER is eligible for banking.

3.7 Ambient Air Quality Standards: include State and National Ambient Air Quality Standards. (In the inclusion of this rule in the State Implementation Plan, all references in this rule to Ambient Air Quality Standards shall be interpreted as National Ambient Air Quality Standards.)

3.8 Baseline Emissions (BE): for a given pollutant, shall be equal to the sum of:

3.8.1 The pre-project Potential to Emit for:

3.8.1.1 Any emissions unit located at a non-Major Source,

3.8.1.2 Any Highly-Utilized Emissions Unit, located at a Major Source, provided that if the unit has a Specific Limiting Condition (SLC), all units combined under the SLC have an average combined annual Actual Emissions during the two consecutive years immediately prior to filing of an application for an Authority to Construct equal to or greater than 80% of the units' pre-project SLC limit,

3.8.1.3 Any Fully-Offset Emissions Unit, located at a Major Source, provided that if the unit has a SLC, all units under the SLC also qualify as Fully Offset Emissions Units, or

3.8.1.4 Any Clean Emissions Unit, located at a Major Source, provided that if the unit has a SLC, all units under the SLC also qualify as Clean Emissions Units.

3.8.2 The Historic Actual Emissions (HAE) for emissions units not specified in Section 3.8.1.

3.9 Baseline Period: a period of time equal to:

3.9.1 The two consecutive years of operation immediately prior to the submission date of the Complete Application; or

3.9.2 At least two consecutive years within the five years immediately prior to the submission date of the Complete Application if determined by the APCO as more representative of normal source operation; or

3.9.3 A shorter period of at least one year if the emissions unit has not been in operation for two years and this represents the full operational history of the emissions unit, including any replacement units; or

3.9.4 Zero years if an emissions unit has been in operation for less than one year (only for use when calculating AER).

3.10 Best Available Control Technology (BACT): is the most stringent emission limitation or control technique of the following:

3.10.1 Achieved in practice for such category and class of source;

3.10.2 Contained in any State Implementation Plan approved by the Environmental Protection Agency for such category and class of source. A specific limitation or control technique shall not apply if the owner of the proposed emissions unit demonstrates to the satisfaction of the APCO that such a limitation or control technique is not presently achievable; or

3.10.3 Contained in an applicable federal New Source Performance Standard; or

3.10.4 Any other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be cost effective and technologically feasible for such class or category of sources or for a specific source.

3.11 Biomass-fired power facility: a facility generating electrical power and fueled exclusively on biomass fuels consisting of at least 90% of one or more of the following constituents: alfalfa, barley, bean straw, corn, oats, wheat, orchard and vineyard pruning, and forest residues. Grape stems, grape pumice, almond and walnut shells, construction wood waste, urban wood waste, and lawn trimmings are not considered biomass fuels.

3.12 Cargo Carriers: trains dedicated to a specific Stationary Source and vessel dockside activities as defined in 45 Federal Register 52696 (August 7, 1980) for vessels dedicated to a specific Stationary Source. Motor vehicles, as defined by the Vehicle Code of the State of California, are not considered Cargo Carriers.

3.13 Clean Emissions Unit: for a given pollutant, an emissions unit that meets one of the following criteria:

3.13.1 The unit is equipped with an emissions control technology with a minimum control efficiency of at least 95% (or at least 85% for lean-burn, internal combustion engines); or

3.13.2 The unit is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

3.14 Complete Application: an application for an Emission Reduction Credit or an Authority to Construct for a new or modified emissions unit which has been evaluated and found to include all information necessary to determine compliance with applicable rules and requirements.

3.15 Contiguous or Adjacent Property: a property consisting of two or more parcels of land with a common point or boundary, or separated solely by a public roadway or other public right-of-way.

3.16 Daily Emissions Limitation (DEL): one or more permit conditions which restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. A daily emissions limitation must be:

3.16.1 Contained in the latest Authority to Construct and contained in or enforceable by the latest Permit to Operate for the emissions unit; and

3.16.2 Enforceable, in a practical manner, on a daily basis.

3.17 Emissions Unit: an identifiable operation or piece of process equipment such as a source operation which emits, may emit, or results in the emissions of any affected pollutant directly or as fugitive emissions.

3.18 Federal Major Modification: same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA. SB 288 Major Modifications are not federal major modifications if they meet the criteria of one of the following exclusions:

3.18.1 Less-Than-Significant Emissions Increase Exclusion: Except for VOC and NOx, an emissions increase for the project, or a net emissions increase for the project (as determined pursuant to 40 CFR 51.165 (a)(2)(ii)(B) through (D), and (F)), that is not significant for a given regulated NSR pollutant, as defined in 40 CFR 51.165, is not a federal major modification for that pollutant. For VOC and NOx, an emissions increase for the project (as determined pursuant to 40 CFR 51.165 (a)(2)(ii)(B) through (D), and (F)) that is not significant, as defined in 40 CFR 51.165, is not a federal major modification for that pollutant.

3.18.1.1 To determine the post-project projected actual emissions from existing units, the provisions of 40 CFR 51.165 (a)(1)(xxviii) shall be used.

3.18.1.2 To determine the pre-project baseline actual emissions, the provisions of 40 CFR 51.165 (a)(1)(xxxv)(A) through (D) shall be used.

3.18.1.3 If the project is determined not to be a federal major modification pursuant to the provisions of 40 CFR 51.165 (a)(2)(ii)(B), but there is a reasonable possibility that the project may result in a significant emissions increase, the owner or operator shall comply with all of the provisions of 40 CFR 51.165 (a)(6) and (a)(7).

3.18.1.4 Emissions increases calculated pursuant to this section are significant if they exceed the significance thresholds specified in Table 3-1 of this rule.

Table 3-1, Significance Thresholds

POLLUTANT	THRESHOLD (POUNDS PER YEAR)
VOC	0
NOx	0
PM2.5	20,000 of direct PM2.5 emissions or
	80,000 of sulfur dioxide emissions or
	80,000 of nitrogen oxide emissions
PM10	30,000
SOx	80,000

3.18.2 Plantwide Applicability Limit (PAL) Exclusion: An SB 288 major modification that does not cause facility-wide emissions to exceed a pre-established PAL, as defined in 40 CFR 51.165 (f)(2)(v), for the respective pollutant, is not a federal major modification for that pollutant. PAL exclusions shall not be allowed for either NOx or VOC pollutants.

3.18.2.1 For the purposes of this exclusion, a PAL must be established by a permitting action prior to the SB 288 major modification permitting action.

3.18.2.2 All PALs shall be established according to the provisions of 40 CFR 51.165 (f)(1) through (15).

3.18.2.3 All PALs shall comply with the requirements under 40 CFR 51.165 (f)(1) through (15) to either maintain, renew or retire the PAL.

3.19 Fugitive Emissions: emissions that could not reasonably pass through a vent, chimney, stack, or other functionally equivalent opening. Emissions that are not vented through a stack but can reasonably be captured and vented through a stack are not considered Fugitive. Fugitive emissions shall be included in all calculations, except as provided for in Section 3.24 and as allowed in the applicable 40 CFR Part 51.165.

3.20 Fully Offset Emissions Unit: for a given pollutant, an emissions unit for which

3.20.1 Offsets have been provided for the unit's full potential to emit; or

3.20.2 Offsets have been provided for the entire stationary source's potential to emit in excess of the offset trigger level; or

3.20.3 Offsets have previously been provided for the stationary source's NSR balance as calculated pursuant to the NSR rule in effect at the time of the offset action, and the emissions unit was installed after the County baseline date as indicated below:

Table 3-2, County Baseline Dates

COUNTY	BASELINE DATE
San Joaquin County	May 29, 1979
Stanislaus County	June 19, 1979
Merced, Madera, or Kings County	May 21, 1979
Fresno County Oil Fields	September 20, 1983
Fresno County all other sources	January 1, 1977
Tulare County	June 26, 1979
Kern County Heavy Oil Production	September 12, 1979
	June 22, 1987 for heavy oil production operations with negative cumulative net emissions change as of June 22, 1987
Kern County all other sources	December 28, 1976

3.21 Heavy Oil: crude oil having an American Petroleum Institute gravity of 20 degrees or less as determined by test method ASTM 287-82.

3.22 Highly Utilized Emissions Unit: for a given pollutant, an emissions unit for which the average annual Actual Emissions during the two consecutive years immediately prior to filing of an application for an Authority to Construct were equal to or greater than 80% of the unit's pre-project Potential to Emit. The unit must have been in operation for at least two years and, during that entire period, the unit must have complied with all applicable emission limits and performance standards.

3.23 Historical Actual Emissions (HAE): Actual Emissions occurring during the Baseline Period, after discounting for:

3.23.1 Any emissions reductions required or encumbered by any laws, rules, regulations, agreements, orders, or permits; and

3.23.2 Any emissions reductions attributed to a control measure noticed for workshop, or proposed or contained in a State Implementation Plan, and

3.23.3 Any emissions reductions proposed in the District air quality plan for attaining the annual reductions required by the California Clean Air Act, and

3.23.4 Any Actual Emissions in excess of those required or encumbered by any laws, rules, regulations, orders, or permits. For units covered by a Specific Limiting Condition (SLC), the total overall HAE for all units covered by SLC must be discounted for any emissions in excess of that allowed by the SLC.

3.24 Major Source: for each pollutant, a Stationary Source with post-project emissions or a post-project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values.

3.24.1 For determining major source status, fugitives shall only be included for calculating the air pollutant post-project emissions or SSPE2 if the source is included in the list of source categories identified in the major source definition in 40 CFR Part 70.2, or when determining if a stationary source is a major air toxics source as defined in Rule 2520.

Table 3-3, Major Source Emission Thresholds

POLLUTANT	THRESHOLD (POUNDS PER YEAR)
VOC	20,000
NOx	20,000
CO	200,000
PM2.5	140,000
PM10	140,000
SOx	140,000

3.24.2 For the purpose of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. This ERC quantity includes all ERC held as certificates and all emission reduction credits that have been sold or transferred.

3.25 Modification:

3.25.1 An action including at least one of the following items:

3.25.1.1 Any change in hours of operation, production rate, or method of operation of an existing emissions unit, which would necessitate a change in permit conditions.

3.25.1.2 Any structural change or addition to an existing emissions unit which would necessitate a change in permit conditions. A Routine Replacement Emissions Unit shall not be considered to be a structural change.

3.25.1.3 An increase in emissions from an emissions unit caused by a modification of the Stationary Source when the emissions unit is not subject to a daily emissions limitation.

3.25.1.4 Addition of any new emissions unit which is subject to District permitting requirements.

3.25.1.5 A change in a permit term or condition proposed by an applicant to obtain an exemption from an applicable requirement to which the source would otherwise be subject.

3.25.2 A reconstructed Stationary Source shall be treated as a new Stationary Source and not as a modification.

3.25.3 Unless previously limited by a permit condition, the following shall not be considered a modification:

3.25.3.1 A change in ownership of an existing emissions unit with valid Permit to Operate provided that the APCO determines that all applicable offset provisions required by the Permit to Operate will be met;

3.25.3.2 A change in ownership of an entire existing Stationary Source with a valid Permit to Operate;

3.25.3.3 A change which consists solely of a transfer of location of an emissions unit within a Stationary Source; or

3.25.3.4 A Routine Replacement Emissions Unit where the replacement part is the same as the original emissions unit in all respects except for the serial number.

3.26 Offsets: emission reductions recognized by the APCO in the form of Emission Reduction Credits that are issued in accordance with the provisions of Rule 2301 (Emission Reduction Credit Banking), or other Actual Emissions Reductions that may be used to mitigate an emission increase as part of the same Stationary Source Project in accordance with the provisions of this rule.

3.27 Potential to Emit: the maximum capacity of an emissions unit to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including pollution control equipment and restrictions in hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is incorporated into the applicable permit as an enforceable permit condition.

3.28 PM2.5: particulate matter with an aerodynamic diameter smaller than or equal to a nominal 2.5 microns, including gaseous emissions which condense to form particulate matter at ambient temperatures.

3.29 PM10: particulate matter with an aerodynamic diameter smaller than or equal to a nominal ten microns, as defined in District Rule 1020, Definitions.

3.30 Pre-baseline ERCs: Emission Reduction Credits that were banked prior to the baseline year for a given District-adopted and EPA-approved Attainment Plan.

3.31 Precursor: a directly emitted air contaminant that, when released into the atmosphere, forms or causes to be formed or contributes to the formation of a secondary air contaminant for which an Ambient Air Quality Standard has been adopted, or whose presence in the atmosphere will contribute to the violation of one or more Ambient Air Quality Standards. The following precursor-secondary air contaminant relationships shall be used for the purposes of this rule:

Table 3-4, Precursors

PRECURSOR	SECONDARY AIR CONTAMINANT
Volatile Organic Compounds	a. Photochemical oxidants (Ozone) b. The organic fraction of PM10
Nitrogen Oxides	a. Nitrogen dioxide b. The nitrate fraction of PM2.5 c. The nitrate fraction of PM10 d. Photochemical oxidants (Ozone)
Sulfur Oxides	a. Sulfur dioxide b. Sulfates c. The sulfate fraction of PM2.5 d. The sulfate fraction of PM10

3.32 Quarter: for a non-Seasonal Source, this is defined as a calendar quarter. For a Seasonal Source, a quarter is defined as the entire operating season.

3.33 Reasonable Further Progress: as defined by the federal Clean Air Act, Section 182(c)(2)(b).

3.34 Reconstructed Source: any Stationary Source undergoing reconstruction where the fixed capital cost of the new components exceeds 50% of the fixed capital cost of a comparable, entirely new Stationary Source. Fixed capital cost is the capital needed to provide depreciable components. Reconstructed Source cost shall include only the cost of all emission-producing equipment and associated integral activities at the stationary source. A reconstructed Stationary Source shall be considered a new Stationary Source and not as a modification of an existing Stationary Source.

3.35 Routine Replacement Emissions Unit: routine replacement in whole or in part of any article, machine, equipment, or other contrivance with a valid District Permit to Operate provided that all of the following conditions are met:

3.35.1 There is no increase in permitted emissions from the replacement unit(s). For replacements at major sources, "no increase in permitted emissions" as used in this definition also means no significant emissions increase according to the applicability calculations of 40 CFR 51.165(a)(2)(ii)(C). For the purposes of this definition, a Routine Replacement Emissions Unit is an existing emissions unit.

3.35.2 There is no increase in design capacity, unless an old part is no longer available in which case the replacement can result in a design capacity increase of up to 10%. No change to the permitted throughput or emission limits is authorized due to a change in design capacity as part of a replacement. Such changes shall require application for permit modification.

3.35.2.1 Permitted throughputs are throughput limits upon which emission calculations are, or could be, based.

3.35.2.2 If there are no throughput limiting conditions, permitted throughput shall be a throughput rate which affects emissions.

3.35.3 The replacement equipment performs the same function as the equipment being replaced.

3.35.4 The replacement does not constitute a Reconstructed Source (as defined by this rule) or Reconstruction (as defined by any applicable New Source Performance Standard). Reconstructed Source cost shall include only the cost of all emission-producing equipment and associated integral activities at the stationary source.

3.35.5 When the entire emissions unit is replaced as a routine replacement action, the emissions unit shall either have been addressed by a BARCT rule or shall be equipped with a control device capable of at least 85% emission control.

3.36 SB 288 Major Modification: as defined in 40 CFR Part 51.165 (as in effect on December 19, 2002) and part D of Title I of the CAA (as in effect on December 19, 2002). For the purposes of this definition, the SB 288 major modification thresholds for existing major sources are listed as follows:

Table 3-5, SB 288 Major Modification Thresholds

POLLUTANT	THRESHOLD (POUNDS PER YEAR)
VOC	50,000
NOx	50,000
PM10	30,000
SOx	80,000

3.37 Seasonal Source: any Stationary Source with more than 90% of its annual emissions occurring within a consecutive 120-day period.

3.38 Specific Limiting Condition (SLC): permit terms or conditions, which can be enforced in a practical manner, contained in Authorities to Construct and Permits to Operate and established pursuant to New Source Review provisions that restrict the total overall permitted emissions from two or more emissions units.

3.39 Stationary Source: any building, structure, facility, or installation which emits or may emit any affected pollutant directly or as a fugitive emission. Building, structure, facility or installation includes all pollutant emitting activities including emissions units which:

3.39.1 Are under the same or common ownership or operation, or which are owned or operated by entities which are under common control; and

3.39.2 Belong to the same industrial grouping either by virtue of falling within the same two-digit standard industrial classification code or by virtue of being part of a common industrial process, manufacturing process, or connected process involving a common raw material; and

3.39.3 Are located on one or more contiguous or adjacent properties; or

3.39.4 Are located on one or more properties wholly within either the Western Kern County Oil Fields or the Central Kern County Oil Fields or Fresno County Oil Fields and are used for the production of light oil, heavy oil or gas. Notwithstanding the provisions of this definition, light oil production, heavy oil production, and gas production shall constitute separate Stationary Sources.

3.40 Stationary Source Project: a single permitting action involving the modification, addition or shutdown of one or more emissions units. If any increase in emissions from a new or modified emissions unit is permitted based on emission reductions from one or more emissions units included in the stationary source project, the following condition must also be met:

3.40.1 The modification or shutdown resulting in the necessary emission reductions shall occur not later than the date of initial operation of the new

or modified emissions unit. If the new or modified emissions unit is, in whole or in part, a replacement for an existing emissions unit at the same stationary source, the APCO may allow a maximum of 90 days as a start-up period for simultaneous operation of the existing emissions unit and the unit being replaced.

3.41 Temporary Replacement Emissions Unit (TREU): an emissions unit which is at a Stationary Source for less than 180 days in any twelve month period and replaces an existing emissions unit, with a valid District Permit to Operate, which is shut down for maintenance or repair.

3.41.1 The Potential to Emit from a TREU must not exceed the Potential to Emit from the existing emissions unit.

3.41.2 If a TREU is used to replace a TREU, the combined time at the Stationary Source for the two TREU shall not exceed a total of 180 days in any twelve-month period.

3.41.3 An emissions unit not removed from the Stationary Source within 180 days is not a TREU.

4.0 Source Requirements

4.1 Best Available Control Technology (BACT): BACT requirements shall be triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless exempted pursuant to Section 4.2, BACT shall be required for the following actions:

4.1.1 Any new emissions unit or relocation from one Stationary Source to another of an existing emissions unit with a Potential to Emit exceeding 2.0 pounds in any one day;

4.1.2 Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding 2.0 pounds in any one day;

4.1.3 Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined in this rule.

4.2 BACT Exemptions: BACT shall not be required for the following:

4.2.1 CO emissions from a new or modified emissions unit at a Stationary Source with a post project Stationary Source Potential to Emit (SSPE2) of less than 200,000 pounds CO per year;

4.2.2 Cargo Carriers;

4.2.3 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from Best Available Control Technology for all air pollutants, provided all of the following conditions are met:

4.2.3.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;

4.2.3.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.2.3.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.2.3.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NOx, or 25 tons per year of VOC, or 15 tons per year of SOx, or 15 tons per year of PM10, or 50 tons per year of CO.

4.2.3.5 The project shall not constitute a federal major modification.

4.2.4 New emissions unit or modification of an existing emissions unit for voluntary reduction in emissions, for the sole purpose of generating emission reduction credits. This exemption applies only to the pollutant for which emission reduction credits are obtained. BACT may be required for other affected pollutants;

4.2.5 A Temporary Replacement Emissions Unit;

4.2.6 A Routine Replacement Emissions Unit; or

4.2.7 Transfer of location of emissions units within the same stationary source.

4.3 Adjusted Increase in Permitted Emissions (AIPE) Calculations: Adjusted Increase in Permitted Emissions shall be calculated as:

$$AIPE = PE2 - HAPE$$

Where:
AIPE = Adjusted Increase in Permitted Emissions, pounds per day

PE2 = the emissions units post project Potential to Emit, pounds per day
HAPE = the emissions unit's Historically Adjusted Potential to Emit, pounds per day

4.4 Historically Adjusted Potential to Emit (HAPE) Calculations: Historically Adjusted Potential to Emit shall be calculated as

$$HAPE = PE1 \times (EF2 / EF1)$$

Where:
PE1 = The emissions unit's Potential to Emit prior to modification or relocation
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1.
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

4.5 Emission Offset Requirements:

4.5.1 If emission offset requirements are triggered pursuant to Section 4.5.3, emission offsets shall be provided for net emissions increases resulting from a project. Offset quantities shall be calculated pursuant to Section 4.7.

4.5.2 For Stationary Sources with a quarterly Potential to Emit which remain constant throughout the year, the amount shall be calculated in pounds per year. For Stationary Sources with quarterly Potential to Emit that is not constant throughout the year, and for Seasonal Sources the amount shall be calculated in pounds per quarter.

4.5.3 Offset requirements shall be triggered on a pollutant-by-pollutant basis. Unless exempted pursuant to Section 4.6, offsets shall be required if the post-project Stationary Source Potential to Emit (SSPE2) equals or exceeds the following offset threshold levels:

Table 4-1, Emissions Offset Threshold Levels

POLLUTANT	SSPE2 (POUNDS /YEAR)
VOC	20,000
NOx	20,000
CO	200,000
SOx	54,750
PM10	29,200

4.5.4 Offsets shall be required for PM2.5 and PM2.5 precursor emission increases for such increases that constitute new major sources or federal major modifications.

4.6 Emission Offset Exemptions: Emission offsets shall not be required for the following:

4.6.1 Increases in carbon monoxide in attainment areas if the applicant demonstrates to the satisfaction of the APCO, that the Ambient Air Quality Standards are not violated in the areas to be affected, and such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of Ambient Air Quality Standards;

4.6.2 Emergency equipment that is used exclusively as emergency standby equipment for electric power generation or any other emergency equipment as approved by the APCO that does not operate more than 200 hours per year for non-emergency purposes and is not used pursuant to voluntary arrangements with a power supplier to curtail power. Equipment exempted by this section shall maintain a written record of hours of operation and shall have permit conditions limiting non-emergency operation;

4.6.3 Portable equipment which is registered as such in accordance with the provisions of Rule 2280 (Portable Equipment Registration) or the Statewide Portable Equipment Registration Program (California Code of Regulation Title 13, Article 5, Sections 2450-2465), or equipment registered in accordance with the provisions of Rule 2250 (Permit-Exempt Equipment Registration);

4.6.4 On-site soil or groundwater decontamination performed by, under the jurisdiction of, or pursuant to the requirements of an authorized health officer, agricultural commissioner, fire protection officer, or other authorized government officers, provided emissions do not exceed 4,000 pounds per year of any affected pollutant from all emissions units associated with decontamination project;

4.6.5 A Temporary Replacement Emissions Unit.

4.6.6 A transfer of location of an entire Stationary Source within the District, under the same owner and provided:

4.6.6.1 The Potential to Emit of any affected pollutant will not be greater at the new location than at the previous location when all emissions units are operated at the same permitted conditions; and

4.6.6.2 BACT is applied to all emissions units with a Potential to Emit exceeding 2.0 pounds per day; and

4.6.6.3 The transferred Stationary Source is not added to an existing Stationary Source.

4.6.7 A transfer of location of an emissions unit from one Stationary Source to another within the District, under the same owner and provided:

4.6.7.1 The Potential to Emit of any affected pollutant will not be greater at the new location than at the previous location when all emissions units are operated at the same permitted conditions, and

4.6.7.2 The offsets that would be otherwise required for the unit at the new location have been provided for the emissions unit previously.

4.6.8 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from offset requirements for all air pollutants provided all of the following conditions are met:

4.6.8.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;

4.6.8.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.6.8.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.6.8.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NOx, or 25 tons per year of VOC, or 15 tons per year of SOx, or 15 tons per year of PM10, or 50 tons per year of CO.

4.6.9 Agricultural Sources, for criteria pollutants for that source if emissions reductions from that source would not meet the criteria for real, permanent, quantifiable, and enforceable emission reductions.

4.6.9.1 In no case shall the offset exemption in Section 4.6.9 apply to an agricultural source that is also a major stationary source for the pollutant for which the offset exemption is sought.

4.7 Emission Offset Quantity Calculations:

4.7.1 For pollutants with a pre-project Stationary Source Potential to Emit (SSPE1) greater than the emission offset threshold levels, emission offsets shall be provided for:

4.7.1.1 All increases in Stationary Source emissions, calculated as the sum of differences between the post-project Potential to Emit (PE2) and the Baseline Emissions (BE) of all new and modified emissions units, plus

4.7.1.2 All increases in Cargo Carrier emissions.

4.7.2 For pollutants with a pre-project Stationary Source Potential to Emit (SSPE1) less than or equal to the offset threshold levels, emission offsets shall be provided for:

4.7.2.1 All increases in Stationary Source emissions above the offset trigger levels, calculated as the difference between the SSPE2 and the offset trigger level, plus

4.7.2.2 All increases in Cargo Carrier emissions.

4.7.3 The quantity of offsets calculated pursuant to Sections 4.7.1 and 4.7.2 shall be multiplied by the appropriate Distance Offset Ratio to determine the final quantity of offsets required.

4.7.4 PM10 Emissions: In determining the quantity of required PM10 offsets, the Total Suspended Particulate Matter (TSP) emissions for which full offsets have been previously provided shall not be recalculated as PM10.

4.8 Distance Offset Ratio: For offset calculations, the distance offset ratio shall be as shown below:

4.8.1 For NOx and VOC offsets for new major sources and federal major modifications, the distance offset ratio shall be 1.5;

4.8.2 For PM2.5 and PM2.5 precursor offsets for new major sources and federal major modifications, the offset ratio shall be 1.0;

4.8.3 The requirements of Section 4.8.1 shall not apply if the District demonstrates to the satisfaction of the federal Environmental Protection Agency that all major sources of NOx and VOC in the District are equipped with federal BACT, as defined in CAA Section 169(3). After EPA approval of such a demonstration, the standard distance offset ratios listed in Table 4-2 shall apply for new major sources and federal major modifications,

except that where the original location of the offsets is at the same stationary source as the new or modified emissions unit, the distance offset ratio shall be 1.2.

4.8.4 For all other projects not specified above, the standard distance offset ratio shall be as shown in Table 4-2:

Table 4-2, Standard Distance Offset Ratio

ORIGINAL LOCATION OF EMISSION OFFSETS	OFFSET RATIO
at the same Stationary Source as the new or modified emissions unit	1.0
within 15 miles of the new or modified emissions unit's Stationary Source	1.2 for Non-Major Sources 1.3 for Major Sources
15 miles or more from the new or modified emissions unit's Stationary Source	1.5

4.9 Pre-project Stationary Source Potential to Emit (SSPE1) shall be calculated, on a pollutant-by-pollutant basis, as the sum of the following:

4.9.1 The Potential to Emit from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source.

4.9.1.1 For a unit with both a valid ATC and a PTO or a unit with multiple valid ATC, use the ATC or PTO with the highest potential emissions.

4.9.1.2 For units subject to an SLC, the Potential to Emit shall be based on the overall Potential to Emit limit for all units covered by the SLC and not the sum of the individual Potential to Emit of each emissions unit.

4.9.2 The quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. This quantity includes all ERC held as certificates and all emission reduction credits that have been sold or transferred. Reductions shall be added to the SSPE1 as positive values.

4.10 Post-project Stationary Source Potential to Emit (SSPE2) shall be calculated, on a pollutant-by-pollutant basis, as the sum of the following:

4.10.1 The Potential to Emit from all units with valid Authorities to Construct or Permits to Operate at the Stationary Source, except for emissions units proposed to be shut down as part of a Stationary Source Project.

4.10.1.1 The Potential to Emit of the post-project Authority to Construct will be used for new or modified units, provided that the ATC will include new conditions canceling the existing ATC or PTO for those units, otherwise use the ATC or PTO with the highest potential emissions.

4.10.1.2 For units subject to an SLC, the Potential to Emit shall be based on the overall Potential to Emit limit for all units covered by the SLC and not the sum of the individual Potential to Emit of each emissions unit.

4.10.2 The quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. This quantity includes all ERC held as certificates and all emission reduction credits that have been sold or transferred. Reductions shall be added to the SSPE2 as positive values.

4.11 Calculations involving PM10 emissions

4.11.1 For existing Stationary Sources for which particulate matter emissions have been calculated as Total Suspended Particulate (TSP), the PM10 emissions shall be recalculated from TSP values using PM10 emission factors or speciation data.

4.11.2 In the absence of PM10 emissions factors or speciation data, assume 50% of the total suspended particulates is PM10.

4.11.3 If the applicant has previously provided full offsets for total suspended particulate matter emissions, those total suspended particulate matter emissions need not be recalculated as PM10, for the purpose of determining the quantity of offsets.

4.12 Actual Emissions Reductions (AER) Calculations: Actual Emissions Reductions shall be calculated, on a pollutant-by-pollutant basis, as follows:

$$AER = HAE - PE2$$

Where:
HAE = Historic Actual Emissions
PE2 = Post-project Potential to Emit

4.12.1 Prior to banking, AER shall be discounted by 10 percent (10%) for Air Quality Improvement Deduction, and shall comply with all applicable provisions of Rule 2301 (Emission Reduction Credit Banking).

4.13 Additional Offset Requirements: Offsets obtained subject to this rule shall comply with the following provisions:

4.13.1 Major Source shutdowns or permanent curtailments in production or operating hours of a Major Source may not be used as offsets for emissions from a Major Source, a Federal Major Modification, or an SB 288 Major Modification, unless the ERC, or the emissions from which the ERC are derived, has been included in an EPA-approved attainment plan.

4.13.2 Offsets from another district may be used only if the source of the offsets is within 50 miles of the proposed emissions increases and the APCO has reviewed the permit conditions issued by the district in which the proposed offsets are obtained and certifies that such offsets meet the requirements of this rule and CH&SC Section 40709.6.

4.13.3 Interpollutant offsets:

4.13.3.1 Interpollutant offsets may be approved by the APCO on a case-by-case basis, provided that the applicant demonstrates to the satisfaction of the APCO, that the emission increases from the new or modified source will not cause or contribute to a violation of an Ambient Air Quality Standard. In such cases, the APCO shall, based on an air quality analysis, impose offset ratios equal to or greater than the requirements of this rule.

4.13.3.1.1 In no case shall exempt compounds or the other compounds excluded from the definition of VOC be used as offsets for VOC.

4.13.3.1.2 Interpollutant offsets between PM10 and PM10 precursors may be allowed.

4.13.3.1.3 PM10 emissions shall not be allowed to offset NOx or reactive organic compound emissions in ozone nonattainment areas, nor be allowed to offset SO2 emissions in sulfate nonattainment areas.

4.13.3.1.4 Interpollutant offsets between NOx and VOC may be allowed.

4.13.3.2 Interpollutant offsets between PM2.5 and PM2.5 precursors are allowed at specific ratios as established by US EPA, or as approved into the State Implementation Plan by the US EPA.

4.13.4 Actual Emissions Reductions (AER) used as offsets must have occurred during the same calendar quarter as the emissions increases being offset except as allowed pursuant to Sections 4.13.6 through 4.13.9.

4.13.5 AER used as offsets for a Seasonal Source must have occurred during the same time period as the proposed source will operate except as allowed pursuant to Sections 4.13.6 through 4.13.9.

4.13.6 AER used as offsets for a biomass-fired power facility may have occurred during any quarter.

4.13.7 AER for PM that occurred from October through March, inclusive, may be used to offset increases in PM during any period of the year.

4.13.8 AER for NOx and VOC that occurred from April through November may be used to offset increases in NOx and VOC during any period of the year.

4.13.9 AER for CO that occurred from November through February may be used to offset increases in CO during any period of the year.

4.13.10 AER used as offsets for new and modified Major Sources must be obtained from an area:

4.13.10.1 That has a nonattainment classification that is equal to or higher than the area in which the new or modified Major Source is located, and

4.13.10.2 Where emissions contribute to a violation of a national Ambient Air Quality Standard in the area in which the new or modified Major Source is located.

4.13.11 Offsets required as a condition of an Authority to Construct or a Permit to Operate shall commence not later than the date of initial operation of the new or modified emissions unit.

4.13.11.1 If the new or modified emissions unit is, in whole or in part, a replacement for an existing emissions unit at the same stationary source, the APCO may allow a maximum of 90 days as a start-up period for simultaneous operation of the existing emissions unit and the unit being replaced.

4.13.12 Nothing in this rule shall be construed as requiring ERC used as NSR offsets to be discounted at time of use, except for the additional offsets as required by Sections 4.8, 4.13.3, and as described in Section 7.0.

4.14 Ambient Air Quality Standards:

4.14.1 Emissions from a new or modified Stationary Source shall not cause or make worse the violation of an Ambient Air Quality Standard. In making this determination, the APCO shall take into account the increases in minor and secondary source emissions as well as the mitigation of emissions through offsets obtained pursuant to this rule. Modeling used for the purposes of this rule shall be consistent with the requirements contained in the most recent edition of EPA's "Guideline on Air Quality Models" unless the APCO finds such model is inappropriate for use. After making such a finding, the APCO may designate an alternative model only after allowing for public comments and only with the concurrence of the ARB or the EPA.

4.14.1.1 At the discretion of the APCO, a new or modified source which is not subject to the public noticing requirements of Section 5.4 shall be exempted from the requirements of Section 4.14.1.

4.15 Additional Requirements for new Major Sources and Federal Major Modifications

4.15.1 Alternative siting: For those sources for which an analysis of alternative sites, sizes, and production processes is required under Section 173 of the Federal Clean Air Act, the applicant shall prepare an analysis functionally equivalent to the requirements of Division 13, Section 21000 et. seq. of the Public Resources Code.

4.15.2 Compliance by Other Owned, Operated, or Controlled Source: The owner of a proposed new Major Source or federal major modification shall demonstrate to the satisfaction of the APCO that all major Stationary Sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in California which are subject to emission limitations are in compliance or on a schedule for compliance with all applicable emission limitations and standards.

5.0 Administrative Requirements

The administrative requirements of Sections 5.1 through 5.7, inclusive, shall be applied to all applications for a new or modified emissions unit except for power plants proposed to be constructed in the District and for which a Notice of Intention (NOI) or Application for Certification (AFC) has been accepted by the California Energy Commission. For such power plants, the administrative requirements of Section 5.8 shall apply.

5.1 Complete Application: The APCO shall determine whether the application is complete not later than 30 days after receipt of the application, or after such longer time as both the applicant and the APCO may agree.

5.1.1 If the APCO determines that the application is not complete, the applicant shall be notified in writing of the decision specifying the information required. Upon receipt of any resubmittal of the application, a new 30-day period to determine completeness shall begin.

5.1.2 Completeness of an application or resubmitted application shall be evaluated on the basis of the information requirements set forth in the District Rules and Regulations as they exist on the date on which the application or resubmitted application is received.

5.1.3 Upon determination that the application is complete, the APCO shall notify the applicant in writing.

5.1.4 The APCO may, during the processing of the application, request an applicant to clarify, amplify, correct, or otherwise supplement the information submitted in the application.

5.2 Preliminary Decision: Following acceptance of an application as complete, the APCO shall perform the evaluations required to determine compliance with this rule and make a preliminary written decision as to whether an Authority to Construct should be approved, conditionally approved, or disapproved.

5.2.1 The APCO shall deny any Authority to Construct if the APCO finds that the subject of the application would not comply with the standards set forth in this rule or any other District rule.

5.2.2 The decision shall be supported by a succinct, written analysis.

5.3 Final Action: Within 180 days after acceptance of an application as complete, or within 180 days after the lead agency has approved the project under the California Environmental Quality Act, whichever occurs later, the APCO shall take final action on the application after considering all written comments.

5.4 Public Notification and Publication Requirements: The APCO shall provide public notification and publication for the following types of applications:

5.4.1 New Major Sources, Federal Major Modifications, and SB 288 Major Modifications.

5.4.2 Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one affected pollutant;

5.4.3 Modifications that increase the Stationary Source Potential to Emit (SSPE1) from a level below the emissions offset threshold level to a level exceeding the emissions offset threshold level for one or more pollutants;

5.4.4 New Stationary Sources with post-project Stationary Source Potential to Emit (SSPE2) exceeding the emissions offset threshold level for one or more pollutants;

5.4.5 Any permitting action resulting in a Stationary Source Project Increase in Permitted Emissions (SSIPE) exceeding 20,000 pounds per year for any one pollutant.

5.5 Public Notification and Publication Actions: For the types of applications listed in Section 5.4, the APCO shall perform the following actions:

5.5.1 Within ten (10) calendar days following the preliminary decision the APCO shall electronically publish a notice on the District's website, including a copy of the draft permit, stating the preliminary decision, noting how pertinent information can be obtained, and inviting written public comment for a 30 day period following the date of publication.

5.5.2 No later than the date of publication, the APCO shall transmit to the applicant its preliminary written decision, the analysis, and a copy of the notice submitted for publication.

5.5.3 No later than the date of publication, the APCO shall transmit to the ARB and to any person who requests such information, its preliminary written decision, the analysis, and a copy of the notice submitted for publication. For new Major Sources, Federal Major Modifications, and SB 288 Major Modifications, the APCO shall also transmit the preliminary written decision and supporting documents to the EPA.

5.5.4 No later than the time the notice of the preliminary decision is published, the APCO shall make available for public inspection at the District office the information submitted by the applicant and the analysis.

5.5.5 The APCO shall provide written notice of the final action to the applicant, and the ARB, and shall electronically publish such notice on the District's website, except that for an application not subject to Section 5.4, the APCO shall not be subject to this section. In such a case, the applicant shall receive notification as provided in Rule 2040 (Applications). For new Major Sources, Federal Major Modifications, and SB 288 Major Modifications, the APCO shall also transmit written notice of the final action to the EPA.

5.5.6 No later than the time of notice of final action is published on the District's website, the APCO shall make available for public inspection at District

offices a copy of the notice submitted for publication and all supporting documents.

5.6 Authority to Construct (ATC) - General Conditions

5.6.1 An ATC shall not be issued unless the new or modified source complies with the provisions of this rule and all other applicable District Rules and Regulations.

5.6.2 An ATC shall require that the new or modified source be built according to the specifications and plans contained in the application.

5.6.3 An ATC shall include all those conditions which the APCO deems necessary to assure construction and operation in the manner assumed in making the analysis to determine compliance with this rule.

5.6.4 An ATC shall include all those conditions relating to the satisfaction of the offset requirements of this rule.

5.6.5 An ATC issued for an emissions unit that relies on reduction in emissions from other units included in the Stationary Source Project, must include a condition that requires initiating and completing construction on those units that provide the reduction prior to commencing operation of the unit with increase in emissions.

5.6.5.1 If the new or modified emissions unit is, in whole or in part, a replacement for an existing emissions unit at the same stationary source, the APCO may allow a maximum of 90 days as a start-up period for simultaneous operation of the existing emissions unit and the unit being replaced.

5.7 Permit to Operate (PTO) - General Conditions

5.7.1 A PTO shall require that the new source or modification be operated in the manner assumed in making the analysis to determine compliance with this rule and as conditioned in the Authority to Construct.

5.7.2 A PTO shall include daily emissions limitations and other enforceable conditions which reflect applicable emission limits including the offset requirements.

5.7.3 The APCO shall determine if the applicant has complied with all the conditions in the ATC. The APCO may allow conditions which have not been met at the time the PTO is issued to be incorporated into the Permit to Operate, provided that compliance with that condition is demonstrated by a specified date.

5.7.4 Any source which provides offsets shall be subject to enforceable permit conditions containing specific operational and emissions limitations, which ensure that the emissions reductions will be provided in accordance with the provisions of this rule and shall continue for the reasonably expected life of the proposed source. Where the source of offsets is not subject to a permit, a written contract shall be required between the applicant and the owner of such source, which contract, by its terms, shall be enforceable by the APCO. The permit and contract shall be submitted to the ARB to be forwarded to the EPA as part of the State Implementation Plan. A violation of the emission limitation provisions of any such contract shall be chargeable to the applicant.

5.7.5 Offsets required as a condition of an ATC or a PTO shall commence not later than the date of initial operation of the new or modified source,

5.7.5.1 If a new or modified Stationary Source is, in whole or in part, a replacement for an existing Stationary Source on the same or contiguous property the APCO may allow a maximum of 90 days as a start-up period for simultaneous operation of the existing Stationary Source and the new or replacement source.

5.8 Power plants which will be licensed by the California Energy Commission: The administrative requirements of this section shall be applied to all power plants proposed to be constructed in the District and for which a Notice of Intention (NOI) or Application for Certification (AFC) has been accepted by the California Energy Commission. The APCO may apply for reimbursement of all costs incurred, including lost fees, in order to comply with the provisions of this section.

5.8.1 Intent to Participate and Preliminary Report: Within 14 days of receipt of a NOI, the APCO shall notify the ARB and the California Energy Commission of the APCO's intent to participate in the NOI proceeding. If the APCO chooses to participate in the NOI proceeding, the APCO shall prepare and submit a report to the ARB and the California Energy Commission prior to the conclusion of the nonadjudicatory hearings specified in Section 25509.5 of the Public Resources Code. The report shall include at least:

5.8.1.1 A preliminary specific definition of BACT for the proposed facility.

5.8.1.2 A preliminary discussion of whether there is substantial likelihood that the requirements of this rule and all other District rules can be satisfied by the proposed facility.

5.8.1.3 A preliminary list of conditions which the proposed facility must meet in order to comply with this rule or any other applicable District rules. The preliminary determinations contained in the report shall be as specific as possible within the constraints of the information contained in the NOI.

5.8.2 Equivalency of Application for Certification to Application for Authority to Construct: The APCO shall consider an Application for Certification (AFC) to be equivalent to an application for an Authority to Construct, and subject, as such, to all definitions and requirements of this rule.

5.8.3 Upon receipt of an AFC for a power plant, the APCO shall conduct a Determination of Compliance review. This review shall determine whether an AFC is complete, and within 20 calendar days of receipt of the AFC, the APCO shall so inform the California Energy Commission and the applicant in writing.

5.8.3.1 If the APCO determines that the application is not complete, the information required shall be specified, and the AFC shall be returned to the applicant for resubmittal. Upon receipt of any resubmittal of the application, a new 20 day period to determine completeness shall begin.

5.8.3.2 Completeness of an application or resubmitted application shall be evaluated on the basis of the information requirements set forth in District Rules and Regulations as they exist on the date on which the application or resubmitted application is received.

5.8.4 The APCO may request from the applicant any information necessary for the completion of the Determination of Compliance review. If the APCO is unable to obtain the information, the APCO may petition the presiding Commissioner of the California Energy Commission for an order directing the applicant to supply such information.

5.8.5 Within 180 days of accepting an AFC as complete, the APCO shall make a preliminary written decision as to whether a Determination of Compliance Certification should be approved, conditionally approved, or disapproved. The APCO shall deny any Determination of Compliance Certification if the APCO finds that the subject of the application would not comply with the standards set forth in this rule or any other District rule. The decision shall be supported by a succinct, written analysis.

5.8.6 Notification and Publication actions shall be conducted according to the requirements of Section 5.5.

5.8.7 Within 240 days after acceptance of an application as complete, the APCO, after considering all written comments, shall take final action on the application, which action shall consist of the following:

5.8.7.1 The APCO, if all requirements of this rule are met, shall issue and submit to the California Energy Commission a Determination of Compliance, or advise the Commission that a Determination of Compliance cannot be issued.

5.8.7.2 Public inspection of final action documents shall be provided for in accordance with Section 5.5.6.

5.8.8 Equivalency of Determination of Compliance to Authority to Construct: A Determination of Compliance shall confer the same rights and privileges as an Authority to Construct provided that the California Energy Commission approves the Application for Certification and the certificate granted by the Commission includes all conditions of the Determination of Compliance.

5.8.9 The APCO shall issue a Permit to Operate to any applicant receiving a certificate from the California Energy Commission pursuant to this rule provided that the construction or modification is in compliance with all conditions of the certificate and of the Determination of Compliance, and provided that the Permit to Operate includes the conditions prescribed in Section 5.7.

5.9 Enhanced Administrative Requirements

Application for a certificate of conformity with the procedural requirements of 40 CFR Part 70 shall be subject to the following enhanced administrative requirements in addition to any other applicable administrative requirements of Section 5.0:

5.9.1 New Sources and Significant Permit Modifications

5.9.1.1 Public Notification: The APCO shall provide a written notice of the proposed permit and, upon request, copies of the APCO analysis to interested parties. Interested parties shall include affected states, ARB and persons who have requested in writing to be notified. The notice shall also be given by electronic publication on the District's website and by any other means if necessary to assure adequate notice to the affected public. The public shall be given 30 days from the date of publication to submit written comments on the APCO's proposed action.

5.9.1.2 The notice shall provide the following information:

5.9.1.2.1 The identification of the source, the name and address of the permit holder, the activities and emissions change involved in the permit action;

5.9.1.2.2 The name and address of the APCO, the name and telephone number of District staff to contact for additional information;

5.9.1.2.3 The availability, upon request, of a statement that sets forth the legal and factual basis for the proposed permit conditions;

5.9.1.2.4 The location where the public may inspect the Complete Application, the APCO's analysis, the proposed permit, and all relevant supporting materials;

5.9.1.2.5 A statement that the public may submit written comments regarding the proposed decision within at least 30 days from the date of publication and a brief description of commenting procedures; and

5.9.1.2.6 A statement that members of the public may request the APCO or his designee to preside over a public hearing for the purpose of receiving oral public comment, if a hearing has not already been scheduled. The APCO shall provide notice of any public hearing scheduled to address the proposed decision at least 30 days prior to such hearing.

5.9.1.3 The APCO shall provide written response to persons or agencies that submitted written comments which are postmarked by the close of the public notice and comment period. All written comments and responses to such comments shall be kept on file at the District office and made available upon request.

5.9.1.4 A copy of the Complete Application, the APCO's analysis and the proposed permit shall be made available at District offices for public review and comment during normal business hours. The APCO's analysis shall include a statement that sets forth the legal and factual basis for the proposed permit conditions, including references to the applicable statutory and regulatory provisions.

5.9.1.5 The APCO shall provide written notice to the EPA of the proposed decision along with copies of the proposed permit, the APCO's analysis, the public notice submitted for publication, and all necessary supporting information.

5.9.1.6 If the EPA does not object pursuant to Section 5.9.1.9, the APCO shall issue the final permit.

5.9.1.7 If the EPA does not object in writing to the APCO's preliminary decision during the EPA's 45 day review period, any person may petition the EPA within 60 days after the expiration of the EPA's 45 day review period. Any such petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates to the EPA that it was impracticable to raise such objections within such period, or unless grounds for such objections arose after such period. Petitions shall be based on the compliance of the permit provisions with applicable requirements.

5.9.1.8 Within 180 days after acceptance of an application as complete, or within 180 days after the lead agency has approved the project under the California Environmental Quality Act, whichever occurs later, the APCO shall take final action on the application after considering all written comments.

5.9.1.9 The APCO shall not issue a permit if the EPA objects to its issuance in writing within 45 days of receipt of the APCO's notice of preliminary decision on the proposed permit.

5.9.1.9.1 Any EPA objection shall include a statement of the EPA's reasons for objection and a description of the terms and conditions that the permit must include to respond to the objections. The EPA shall provide the permit applicant a copy of the objection.

5.9.1.9.2 If the APCO fails, within 90 days after the date of EPA's objection, or within 180 days from the date the application was deemed complete plus any extension allowed by the state law, whichever is sooner, to revise and submit a proposed permit in response to the objection, the APCO shall not issue a certification on conformity to Title V.

5.9.1.9.3 If the EPA objects to the permit as a result of a public petition, the APCO shall not issue the permit until EPA's objection has been resolved, except that a

petition for review does not stay the effectiveness of a permit or its requirements if the permit was issued after the end of the 45-day review period and prior to an EPA objection. If the APCO has issued a permit prior to receipt of an EPA objection, the EPA will modify, terminate, or revoke such permit, and shall do so consistent with procedures in Section 70.7(g)(4) or (5)(i) and (ii) of the 40 CFR regulations, and the APCO may thereafter reissue only a revised permit that satisfies EPA objection.

5.9.1.9.4 EPA objection shall be limited to compliance with applicable requirements and the requirements of 40 CFR Part 70.

5.9.2 Minor Permit Modifications

5.9.2.1 Within 5 working days after the receipt of a Complete Application for a minor permit modification, the APCO shall provide notification of the proposed permit modification to the EPA, affected states, and interested parties pursuant to Section 5.9.1.1.

5.9.2.2 The APCO shall not issue a final permit modification until after a 45-day period review of the proposed permit modification by EPA or until EPA has notified the APCO that EPA will not object to issuance of the permit modification, whichever is first.

5.9.2.3 Within 90 days after APCO's receipt of an application for a minor permit modification or 15 days after the end of the EPA's 45-day review, whichever is later, the APCO shall do one of the following:

5.9.2.3.1 Issue the permit as proposed;

5.9.2.3.2 Deny the permit modification application;

5.9.2.3.3 Determine that the requested modification does not meet the minor permit modification criteria and should be reviewed pursuant to the administrative requirements for significant permit modifications; or

5.9.2.3.4 Revise the draft permit modification and transmit the new proposed permit modification to EPA and the affected states.

6.0 Certification of Conformity

A new or modified source subject to the requirements of Rule 2520 may choose to apply for a certificate of conformity with the procedural requirements of 40 CFR Part 70. A certification of conformity will allow changes authorized by the Authority to Construct to be incorporated into the Part 70 permit as administrative permit amendments.

6.1 The APCO will issue a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8, and with the compliance requirements of 40 CFR 70.6(8)(c), if the following conditions are met:

6.1.1 The Authority to Construct is issued in conformance with the Enhanced Administrative Requirements of this rule;

6.1.2 The content of the Authority to Construct issued by the APCO complies with the requirements set forth in Section 9.0 of District Rule 2520 (Federally Mandated Operating Permits);

6.1.3 An application for a certificate of conformity with the requirements of 40 CFR Part 70 is submitted with the application for Authority to Construct. The content of application for the certificate of conformity must comply with the requirements of Sections 7.1 of District Rule 2520 (Federally Mandated Operating Permits);

6.1.4 The Authority to Construct contains a statement of conformity with the requirements of Title V and 40 CFR Part 70;

6.1.5 EPA has not objected to the issuance of the Authority to Construct, or EPA's objections have been resolved to the satisfaction of EPA administrator; and

6.1.6 The Part 70 operating permit being issued will contain the federally enforceable requirements contained in the Authority to Construct.

6.2 The certificate of conformity with the procedural requirements of 40 CFR Part 70 is valid as long as the Authority to Construct with which it was issued is valid.

6.3 Modifications to an Authority to Construct for which a certificate of conformity has been issued are subject to the administrative requirements of Section 11.0 of District Rule 2520 that apply to permit modifications and changes, as well as the requirements of all District Rules that apply to modifications of Authorities to Construct.

7.0 Annual Offset Equivalency Demonstration and Pre-baseline ERC Cap Tracking System

7.1 Offset Tracking System

The APCO shall implement a system for tracking the following for each permitting action:

7.1.1 The quantity of offsets that would have been required for new major sources and federal major modifications in the District had the federal new source review requirements, codified in 40 CFR 51.165, and Title I part D of the Clean Air Act (CAA), been applied to these sources. These requirements include offsetting the full emissions increase from new and modified major sources, using actual emissions baselines when required under 40 CFR 51.165, and providing offsets necessary to meet the CAA offset ratio requirements and provide a net air quality benefit.

7.1.2 The quantity of offsets actually required for all new and modified sources in the District pursuant to the requirements of this rule, and, for the purposes of the Pre-baseline ERC Cap Tracking System outlined in any District-adopted and EPA-approved attainment plan.

7.1.3 The surplus value of creditable emission reductions used as offsets by stationary sources.

7.1.3.1 The surplus value shall be determined at the time of ATC issuance for the sources using the emission reductions to satisfy offset requirements of this rule.

7.1.3.2 The determination of surplus value shall specify all requirements that apply to the offsets being reviewed, the methodology used to calculate the impact of these requirements, and all calculations performed in arriving at the final surplus value.

7.1.4 For purposes of the requirements of Section 7.0, surplus value shall be defined as the quantity of actual emission reductions achieved by a source in excess of the following requirements:

7.1.4.1 Any emission reduction required by a stand-alone federal requirement or regulation, including, but not limited to, Acid Rain, New Source Performance Standard, Reasonably Available Control Technology, and Maximum Achievable Control Technology, whether or not the requirements are part of the State Implementation Plan (SIP) or a local attainment plan.

7.1.4.2 Any emission reduction relied upon by a permitting authority for attainment purposes, such as through an attainment plan, including

emission reductions relied upon for Reasonable Further Progress calculations.

7.1.4.3 Any emission reduction achieved by shutting down an existing source or curtailing production or operating hours below baseline levels whose original emission is not included in the District's emission inventory.

7.1.4.4 Any emission reduction based on a source-specific or source category-specific SIP provision used to comply with CAA requirements.

7.1.4.5 Any emission reduction required by a condition of a permit issued to comply with CAA New Source Review requirements, except that any emission reduction required by a permit condition, which was placed on a permit solely to assure compliance with a state or local requirement, which is not on its own federally enforceable, shall not be included in this class.

7.1.4.6 Any emission reduction based on a source-specific emission limitation resulting from an EPA enforcement case.

7.1.5 For purposes of the requirements of Section 7.0, creditable shall be defined as emission reductions are real, surplus, quantifiable, enforceable and permanent. The creditability of a given emission reduction may be subject to review by the EPA.

7.2 Annual Demonstration Report

The APCO shall annually prepare a report with the following demonstrations to be provided to the public, the ARB and the EPA in accordance with the dates specified in Section 7.3. The District shall also make available to the public, the ARB and the EPA the data used to prepare the demonstrations.

7.2.1 Demonstration on Equivalency of Offset Requirements

7.2.1.1 The report shall include a comparison of the annual quantity of federal offsets that would have been required (as tracked pursuant to Section 7.1.1) to the annual quantity of offsets actually required under this rule, including any excess offsets required from previous reporting years (as tracked pursuant to Section 7.1.2).

7.2.1.2 The report shall also describe any additional emission reductions retired to address a shortfall in required offsets as specified in Section 7.4.1.1. Such description shall, at a minimum, specify the emission reductions used and the surplus value of those

reductions. The surplus value of these reductions may also be used in demonstrating equivalency under Section 7.2.2.

7.2.2 Demonstration on Creditability of Emission Reductions

7.2.2.1 The report shall include a comparison of the annual quantity of federal offsets that would have been required (as tracked pursuant to Section 7.1.1) to the surplus value of creditable emission reductions used as offsets during the year (as tracked pursuant to Section 7.1.3).

7.2.2.2 For purposes of the demonstration described in Section 7.2.2, the comparison may also include the surplus value of additional creditable emission reductions that have not been used as offsets and have been banked or have been generated as a result of permitting actions. The surplus value of these reductions may also be used to remedy any shortfall as specified under Section 7.4.1.1.

7.2.2.2.1 The surplus value of these additional credits shall be determined as of the date of the issuance of the Authority to Construct utilizing such reductions in demonstration described in this subsection.

7.2.2.2.2 Any such additional emission reductions used in this demonstration shall be permanently retired and shall not be used to meet any offset or netting requirements and shall not be used in future demonstrations required by Section 7.0.

7.2.2.2.3 Additional emission reductions described in Section 7.2.2.2 shall only be included in the comparison to the extent the annual quantity of federal offsets that would have been required (as tracked pursuant to Section 7.1.1) exceeds the surplus value of creditable emission reductions used as offsets (as tracked pursuant to Section 7.1.3).

7.2.2.2.4 Any additional emission reductions described in Section 7.2.2.2 that are not included in the demonstration required by this subsection, may be used in future demonstrations in accordance with this subsection.

7.3 Reporting Schedule

7.3.1 The report shall cover the period August 20 to August 19 of each year. For the Initial report, the District shall track offset requirements for new and

modified sources for which a complete application for Authority to Construct was submitted after August 20, 2001. Additional emission reductions, other than banked emission reductions, may be used in the equivalency demonstration only if the reduction occurred after August 20, 2001.

7.3.2 For each reporting period, the APCO shall submit the report and data described in Section 7.2 to ARB and the EPA no later than November 20 of each year. In addition, the APCO shall release the report to the public and shall present it to the District Governing Board, each year, at the first Board meeting following its submittal to the EPA.

7.3.3 All documents created and/or used in implementing the requirements of Section 7.0 shall be kept and maintained by the APCO for no less than five years from the date of their creation and/or use.

7.4 Remedy for Emission Offset Shortfalls

7.4.1 Failure to Demonstrate Equivalency in Offset Requirements

7.4.1.1 If the comparison described in Section 7.2.1 does not show, or EPA determines the comparison erroneously shows, that the annual quantity of offsets actually required under this rule (as tracked pursuant to Section 7.1.2) equals or exceeds the annual quantity of federal offsets that would have been required (as tracked pursuant to Section 7.1.1), the District shall retire additional creditable emission reductions that have not been used as offsets and have been banked or have been generated as a result of permitting actions such that the surplus value of these emission reductions satisfies any shortfall.

7.4.1.1.1 The surplus value of these additional credits shall be determined as of the date of the issuance of the Authority to Construct utilizing such reductions in demonstration described in this subsection.

7.4.1.1.2 Any such additional emission reductions used in this demonstration shall be permanently retired and shall not be used to meet any offset or netting requirements and shall not be used in future demonstrations required by Section 7.0.

7.4.1.2 If the District does not have sufficient additional creditable emission reductions to satisfy the shortfall described in 7.4.1.1, all ATCs issued after the report deadline for that year shall comply with the offset requirements of 40 CFR 51.165, and part D of Title

I of the CAA, for each pollutant for which there is a shortfall, until the applicability and offset requirements of this rule are revised to comply with the federal new source review requirements and approved into the SIP by EPA.

7.4.1.3 If the APCO fails to submit a report meeting the requirements of Section 7.2.1, all ATCs issued after the report deadline and until the APCO submits to ARB, EPA and the public a report complying with the requirements of Section 7.2.1 shall comply with the offset requirements of 40 CFR 51.165, and part D of Title I of the CAA.

7.4.2 Failure to Demonstrate Adequate Creditable Emission Reductions

7.4.2.1 If the comparison described in Section 7.2.2 does not show, or EPA determines the comparison erroneously shows, that the surplus value of creditable emission reductions used as offsets during the year (as tracked pursuant to Section 7.1.3) combined with additional emission reductions as described in Section 7.2.2.2 equals or exceeds the annual quantity of federal offsets that would have been required (as tracked pursuant to Section 7.1.1), all ATCs issued, for new major sources or federal major modifications, for each pollutant for which there is a shortfall, after the report deadline shall ensure that emission reductions used to satisfy offset requirements are creditable and that the surplus value of those credits is determined at the time of ATC issuance.

7.4.2.2 The requirements of Section 7.4.2.1 shall remain in effect until this rule is revised to require offset discounting at time of use and such revision is approved into the SIP by EPA, or until a subsequent annual report prepared in accordance with Section 7.2.2 demonstrates that the surplus value of creditable emission reductions used as offsets (as tracked pursuant to Section 7.1.3) combined with additional emission reductions as described in Section 7.2.2.2 equals or exceeds the annual quantity of federal offsets that would have been required (as tracked pursuant to Section 7.1.1).

7.4.2.3 If the APCO fails to submit a report meeting the requirements of Section 7.2.2, all ATCs issued for new major sources or federal major modifications after the report deadline and until the APCO submits to ARB, EPA and the public a report complying with the requirements of Section 7.2.1 shall ensure that emission reductions used to satisfy offset requirements are creditable and that the surplus value of those credits is determined at the time of ATC issuance.

7.5 Pre-Baseline ERC Usage Caps from District Attainment Plans

7.5.1 ERCs that were banked prior to the baseline year for a given District-adopted and EPA-approved Attainment Plan shall not be used to offset emissions increases under the provisions of this rule if the usage of such credits during the effective period of the plan exceeds the respective pollutant's Pre-Baseline ERC Usage Cap in the plan.

7.5.2 Such caps on pre-baseline ERC usage remain in effect until the end of the plan's effective period, or until such time as EPA approves revised caps through an Attainment Plan revision process or a Rate of Progress update.

8.0 Application Shield for Routine Replacement Emissions Units and Temporary Replacement Emissions Units (TREUs)

8.1 For a Routine Replacement Emissions Unit or a TREU, for which an Authority to Construct is required, the permitted source may continue to operate under an application shield, provided that all of the following conditions are met.

8.1.1 An application for the Routine Replacement Emissions Unit or TREU has been submitted within seven calendar days of completing the construction or installation of the replacement.

8.1.2 The source operates in compliance with all applicable requirements of the federal, state, and District rules and regulations.

8.1.3 For a TREU, all of the following conditions must be met:

8.1.3.1 The TREU results in no increase in design capacity, unless a replacement unit of the same or lower design capacity is not available, in which case the replacement can result in a design capacity increase of up to 10%.

8.1.3.2 The TREU results in no change to the permitted throughput or emission limits due to a change in the design capacity as part of the replacement.

8.1.3.3 The TREU performs the same function as the equipment being replaced.

8.1.3.4 The TREU either is addressed by a BARCT rule or is equipped with a control device capable of at least 85% emission control.

8.2 When the application has been deemed complete by the APCO, the application shield shall be made effective retroactive from the date of application submittal until the application is either approved or denied.

8.2.1 The application shield is not applicable if the District's final action is delayed due to the failure of the applicant to submit timely information requested by the District. The source must also submit additional information for any requirements that become applicable after a complete application is submitted, but before a PTO is issued.

8.3 The application shield does not exempt the operator from any applicable requirements.

8.4 The application shield applies only to applications for Routine Replacement Emissions Units, and TREUs meeting the requirements of 8.1.3.1 through 8.1.3.4, and does not authorize any increases to the permitted throughput or emissions due to a change in design capacity as part of a Routine Replacement Emissions Unit or a TREU.

8.5 For replacements at major sources, the application shield applies only to Routine Replacement Emissions Units that result in no significant emissions increase according to the applicability calculations of 40 CFR 51.165(a)(2)(ii)(C), "Actual-to-projected actual applicability test for projects that only involve existing emissions units". For the purposes of this section, a Routine Replacement Emissions Unit is an existing emissions unit. A copy of the emission calculations used to determine that the Routine Replacement Emissions Unit did not result in a significant emissions increase must be included with the application required by Section 8.1.1.

8.6 For a TREU that is removed from the Stationary Source within seven calendar days of completing the installation of the TREU, the application requirements of Section 8.1.1 shall not apply, provided the permittee submits, within seven calendar days of completing the installation of the TREU, a report to the District demonstrating compliance with the requirements of Section 8.

RULE 2250 PERMIT-EXEMPT EQUIPMENT REGISTRATION (Adopted October 19, 2006)

1.0 Purpose

The purpose of this rule is to provide affected sources and the District with the necessary administrative mechanisms to determine compliance of permit-exempt equipment with applicable rules and regulations.

2.0 Applicability

This rule applies to owners or operators of any emissions unit required to obtain a Permit-Exempt Equipment Registration (PEER) by an applicable rule or regulation.

3.0 Definitions

3.1 Administrative Change: any one of the following types of changes:

3.1.1 Correction of typographical errors.

3.1.2 Installation of identical replacements.

3.1.3 Transfer of location of a portable PEER unit.

3.2 Complete PEER Application: an application that has been deemed by the APCO to include all information and all applicable application filing fees necessary to determine compliance with applicable rules and regulations, as specified in Section 5.0.

3.3 Emissions Unit: as defined in District Rule 2201 (New and Modified Stationary Source Review Rule).

3.4 Existing Emissions Unit: an emissions unit that has been operated prior to the PEER application date.

3.5 Identical Replacement: replacement of a whole or partial emissions unit with a valid PEER, where the replacement part or unit is the same as the original in all respects except for the serial number.

3.6 Modification: any action that necessitates a change to a valid PEER. Administrative changes shall not be considered modifications.

3.7 Modified Emissions Unit: an emissions unit that has undergone a modification.

3.8 New Emissions Unit: an emissions unit that is first operated on or after the PEER application date.

3.9 Permit-Exempt Equipment Registration Unit (PEER unit): an emissions unit that has been granted a PEER under District Rule 2250 (Permit-Exempt Equipment Registration) and that is operated as part of a stationary source.

3.10 Portable PEER Unit: a PEER unit displaying a District-issued portable PEER unit identification tag, and is designed to be and is 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.

3.11 Stationary PEER Unit: A PEER unit that is not a portable PEER unit.

3.12 Stationary Source: as defined in District Rule 2201 (New and Modified Stationary Source Review Rule).

3.13 Temporary Replacement Unit (TRU): a unit that replaces a PEER unit, provided that all of the following conditions are met:

3.13.1 The PEER unit is shutdown for maintenance or repair,

3.13.2 The TRU is at the stationary source for no more than 90 days during any 12-month period. In the event that multiple TRUs are used in place of the same PEER unit, the combined length of time the TRUs are at the stationary source shall not exceed 90 days during any 12-month period, and

3.13.3 The pollutant emissions concentrations from the TRU do not exceed the emissions concentrations from the PEER unit.

4.0 Requirements

4.1 The owner or operator of an existing emissions unit shall submit a complete PEER application to the District, in a format determined by the APCO, and according to the PEER application submittal deadlines of the applicable rule or regulation.

4.2 The owner or operator of a new or modified emissions unit shall submit a complete PEER application prior to the initial operation of the new or modified emissions unit, except as allowed by Section 4.3.

4.3 For a new emissions unit that replaces a PEER unit, the new emissions unit may be operated prior to the submittal of a complete PEER application provided that all of the following conditions are met:

4.3.1 A complete PEER application for the new emissions unit is submitted within thirty days after initial operation of the new emissions unit;

4.3.2 The new emissions unit serves the same function as the PEER unit being replaced; and

4.3.3 The new emissions unit complies with the emissions requirements of all applicable rules and regulations.

4.4 Sections 4.2 and 4.3 do not exempt the owner or operator from any applicable requirements.

4.5 The District shall issue the PEER within 90 days of receipt of a complete PEER application.

4.6 Any District issued portable PEER unit identification tag shall be affixed to the PEER unit for which it was issued, in an easily accessible and visible location.

4.7 A stationary PEER unit shall not be transferable from one location to another, unless an application for transfer of location is filed with the District within thirty days after initial operation at the new location.

4.8 A PEER shall not be transferable from one person to another, or from one business name to another, unless an application for transfer of PEER ownership or name change, as appropriate, is filed with and approved by the District.

4.9 Administrative changes do not require the submittal of PEER applications.

4.10 The owner or operator of a TRU shall submit written notification of installing a TRU under Section 3.13 to the District within 30 days following the installation of a TRU.

4.11 A PEER is valid for five years from the date of initial registration or previous renewal. The District shall renew the PEER every five years pending the payment of all applicable fees and compliance with all applicable requirements.

4.12 For the purpose of this rule, permitting in Division 26 of the Health and Safety Code of the State of California, Part 3, Chapter 8 and Part 4, Chapter 4, Articles 2 and 4, respectively entitled “Hearing Board, Variances, and Orders of Abatement,” shall be considered to have the same meaning as PEER as provided in this rule. The District shall have the same authority concerning

PEER as it does with permits, and the owner or operator of a PEER unit shall be entitled to the same privileges and rights granted to a permittee.

4.13 An emissions unit subject to this rule is subject to District Rule 3155 (Permit-Exempt Equipment Registration Fees).

5.0 PEER Application Content

A complete PEER application shall include, but is not limited to the following information:

5.1 Identifying information, including stationary source name and mailing address.

5.2 The owner or operator's name, signature, title and current business telephone number.

5.3 Location(s) where the emissions unit will be operated, if the unit is proposed as a stationary PEER unit.

5.4 Identification and description of the emissions unit and control device, including but not limited to: nature of use, type of device, manufacturer, model, and size, capacity, or power rating.

5.5 The following information to the extent it is needed to determine or regulate emissions: fuel types, fuel usage rates, raw materials, process weight rates, production rates, and operating schedules.

5.6 Information the District deems necessary to implement and enforce applicable rules or requirements, or to determine the applicability of such rules or requirements.

5.7 In lieu of submitting information required by Sections 5.1 through 5.6, the applicant may identify a District emissions reduction incentive-funding project that already contains information required by Sections 5.1 through 5.6.

6.0 PEER Content

Each PEER issued under this rule shall include the following elements:

6.1 Stationary source name and mailing address,

6.2 An equipment description,

6.3 Location where the equipment will be operated, if the unit is a stationary PEER unit,

6.4 List of all applicable requirements at the time of PEER issuance or renewal,

6.4.1 The PEER shall specify and reference the origin of authority for each term or condition.

6.5 The PEER expiration date,

6.6 The applicable PEER unit number.

6.7 The applicable portable PEER unit identification tag number, if the unit is a portable PEER unit.

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RULE 2410 PREVENTION OF SIGNIFICANT DETERIORATION (Adopted June 16, 2011, effective upon federal EPA approval)

1.0 Purpose

The prevention of significant deterioration (PSD) program is a construction permitting program for new major stationary sources and major modifications to existing major stationary sources located in areas classified as attainment or in areas that are unclassifiable for any criteria air pollutant. The intent of this Rule is to incorporate the federal PSD rule requirements into the District's Rules and Regulations by incorporating the federal requirements by reference.

2.0 Applicability

The provisions of this rule shall apply to any source and the owner or operator of any source subject to any requirement under Title 40 Code of Federal Regulations (40 CFR) Part 52.21 as incorporated into this rule. This rule shall become effective upon the effective date of the federal Environmental Protection Agency's (EPA's) final and full approval of Rule 2410. The District expects the effective date to occur 30 days after EPA publishes their final approval in the federal register.

3.0 Incorporation by Reference

Except as provided below, the provisions of 40 CFR Part 52.21, in effect on June 16, 2011, are incorporated herein by reference and made part of the Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District.

3.1 The following subsections of 40 CFR Part 52.21 are excluded: (a)(1), (b)(55-58), (f), (g), (i)(1)(i-v) and (ix-x), (i)(6-8), (p)(6-8), (q), (s), (t), (u), (w), (x), (y), (z) and (cc).

3.2 The following definitions found in 40 CFR Part 52.21(b) are revised as follows:

3.2.1 The definition of "potential to emit" contained in 40 CFR, Part 52.21(b)(4), is revised so that the phrase "is federally enforceable" shall read "is federally enforceable or enforceable as a practical matter."

3.2.2 The definition of "allowable emissions" contained in 40 CFR, Part 52.21(b)(16), is revised so that:

3.2.2.1 The phrase "unless the source is subject to federally enforceable limits which restrict the operating rate, or hours of operation, or both" shall read, "unless the source is subject to enforceable limits which restrict the operating rate, or hours of operation, or both."

3.2.2.2 Paragraph (iii) shall read as follows: "The emissions rate specified as an enforceable permit condition, including those with a future compliance date."

3.3 The following terms found in 40 CFR Part 52.21(b) are revised as follows:

3.3.1 The term "administrator" means:

3.3.1.1 "Federal administrator" in 40 CFR 52.21(b)(17), (b)(37)(i), (b)(43), (b)(48)(ii)(c), (b)(50)(i), (b)(51), (l)(2) and (p)(2); and

3.3.1.2 "Air Pollution Control Officer (APCO)" elsewhere, as defined in District Rule 1020.

3.4 The phrase "procedures developed in accordance with paragraph (q) of this section." in 40 CFR 52.21(l)(1) shall read as follows, "the public notice and comment provisions of District Rule 2201, Section 5.5.1 through 5.5.6, and Sections 5.9.1.1 through 5.9.1.5."

3.5 The phrase "paragraph (q) of this section," in 40 CFR 52.21(p)(1) shall read as follows, "District Rule 2201, Section 5.5.1 through 5.5.6, and Sections 5.9.1.1 through 5.9.1.5."

4.0 Requirements

4.1 An owner or operator must obtain a PSD permit pursuant to this Rule before beginning actual construction of a new major stationary source, a major modification, or a plantwide applicability limitation (PAL) major modification, as defined in 40 CFR 52.21(b).

4.2 Not withstanding the provisions of any other District Rule or Regulation, the APCO shall require compliance with this rule prior to issuing a federal PSD permit as required by Clean Air Act (CAA) Section 165.

4.3 Except as specified in Section 4.3.1, the PSD requirements of this rule shall be incorporated into and made enforceable through authority to construct permits and permits to operate according to the permitting requirements of Regulation II of the District's Rules and Regulations.

4.3.1 For power plants which will be licensed by the California Energy Commission, the PSD requirements of this rule shall be incorporated into and made enforceable through Determinations of Compliance and Permits to Operate according to the requirements of Rule 2201, Section 5.8, and the permitting requirements of Regulation II of the District's Rules and Regulations.

4.4 The applicant shall pay the applicable fees specified in Regulation III of the District's Rules and Regulations.

5.0 Public Participation

Prior to issuing a federal PSD permit pursuant to this rule, the APCO shall comply with the public notice requirements of District Rule 2201, Sections 5.5.1 through 5.5.6, and Sections 5.9.1.1 through 5.9.1.5.

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RULE 2530 FEDERALLY ENFORCEABLE POTENTIAL TO EMIT (Adopted June 15, 1995; Amended April 25, 2002; Amended (December 18, 2008), but not in effect until (date of EPA final approval))

1.0 Purpose

The purpose of this rule is to restrict the potential to emit of a stationary source so that the source may be exempt from the requirements of Rule 2520 (Federally Mandated Operating Permits).

2.0 Applicability

This rule shall apply to any stationary source which is a major source of regulated air pollutants or of hazardous air pollutants.

3.0 Definitions

All terms shall retain the definitions provided under Rule 2520 unless otherwise defined in this section.

3.1 12-month period: a period of twelve consecutive months determined on a rolling basis with a new 12-month period beginning on the first day of each calendar month.

3.2 Actual Emissions: the emissions of a regulated air pollutant from a stationary source for every 12-month period. Valid continuous emission monitoring data or source test data shall be preferentially used to determine actual emissions. In the absence of valid continuous emissions monitoring or source test data, the basis for determining actual emissions shall be: throughput of process materials; throughput of materials stored; usage of materials; data provided in manufacturer's product specifications; material volatile organic compound content reports or laboratory analyses; other information required by this rule and applicable District, state, and federal regulations; or information requested in writing by the District. All calculations of actual emissions shall use EPA, CARB, or District approved methods, including emission factors and assumptions.

3.3 HAP: a hazardous air pollutant listed in section 112(b) of the federal Clean Air Act.

3.4 Major Source of Hazardous Air Pollutants: a stationary source with potential to emit (including fugitive emissions) 10 tons per year or more of a single HAP, or 25 tons per year or more (including fugitive emissions) of a combination of HAPs. Emissions from any oil or gas production well (with its associated equipment) and emissions from any pipeline compressor station shall not be aggregated with emissions from other similar units to determine whether such units or stations are major sources of HAPs.

3.5 Process Statement: an annual report on permitted emission units from an owner or operator of a stationary source certifying under penalty of perjury the following: throughput of process materials; throughput of materials stored; usage of materials; fuel usage; any available continuous emissions monitoring data; hours of operation; and any other information required by this rule or requested in writing by the District.

4.0 General Provisions

4.1 Any stationary source that is in compliance with the applicable requirements of this rule shall not be considered a major source for the purpose of compliance with District Rule 2520.

4.2 Provision for Air Pollution Control Equipment: The owner or operator of a stationary source may take into account the operation of air pollution control equipment on the capacity of the source to emit an air contaminant if the equipment is required by Federal, State, or District rules and regulations or permit terms and conditions. The owner or operator of the stationary source shall maintain and operate such air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. This provision shall not apply after January 1, 1999 unless such operational limitation is federally enforceable or unless the District Board specifically extends this provision and it is submitted to the EPA. Such extension shall be valid unless, and until, the EPA disapproves the extension of this provision.

4.3 Within three years of the effective date of District Rule 2520, the District shall maintain and make available to the public upon request, for each stationary source subject to this rule, information identifying the provisions of this rule applicable to the source.

4.4 This rule shall not relieve any stationary source from complying with requirements pertaining to any otherwise applicable preconstruction permit, or to replace a condition or term of any preconstruction permit, or any provision of a preconstruction permitting program. This does not preclude issuance of any preconstruction permit with conditions or terms necessary to ensure compliance with this rule.

4.5 Unless the owner or operator has chosen to operate the stationary source under an alternative operational limit specified in section 6.2, the owner or operator of a stationary source subject to this rule shall obtain any necessary permits prior to commencing any physical or operational change or activity which will result in actual emissions that exceed the limits specified in section 6.1.

4.6 The owner or operator of a stationary source subject to this rule shall obtain any necessary permits prior to commencing any physical or operational change or activity which will result in an exceedance of an applicable operational limit specified in section 6.2.

5.0 Exemptions

5.1 The provisions of this rule shall not apply to a stationary source with valid Part 70 permits, or a stationary source that has applied for Part 70 permit in accordance with timelines required in District Rule 2520. Nothing in this rule shall prevent any stationary source which has had a Part 70 permit from qualifying to comply with this rule in the future in lieu of maintaining an application for a Part 70 permit or upon rescission of a Part 70 permit if the owner or operator demonstrates that the stationary source is in compliance with the applicable requirements of this rule.

5.2 The provisions of this rule shall not apply to stationary source whose actual emissions, throughput, or operation, at any time after the effective date of this rule, exceed the limits specified in this rule, provided that the following conditions are met:

5.2.1 The owner or operator has notified the District at least 30 days prior to any exceedance, and will submit an application for a Part 70 permit, or otherwise obtain federally-enforceable permit limits, and

5.2.2 A complete Part 70 permit application is received by the District, or the permit action to otherwise obtain federally-enforceable limits is completed, within 12 months of the date of notification.

5.3 This rule shall not apply to any stationary source which has a valid operating permit with federally enforceable conditions or other federally enforceable limits limiting its potential to emit to below the applicable threshold(s) for a major source.

5.4 The recordkeeping and reporting requirements of this rule shall not apply to the following:

5.4.1 Any stationary source that emits no more than the following quantity of emissions in any 12-month period:

5.4.1.1 5 tons per year of a regulated air pollutant (excluding HAPs),

5.4.1.2 2 tons per year of NOx or VOC, or of a single HAP,

5.4.1.3 5 tons per year of any combination of HAPs, and

5.4.1.4 20 percent of any lesser threshold for a single HAP that the EPA may establish by rule.

5.4.2 Any stationary sources for which 90 percent of the stationary sources emissions from the permitted emissions units in every 12-month period are associated with an operation for which the throughput is less than or equal to one of the following quantities:

5.4.2.1 560 gallons of any combination of solvent containing material but no more than 220 gallons of any one solvent-containing material, provided that the materials do not contain methyl chloroform (1,1,1-trichloroethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), or trichloroethylene;

5.4.2.2 300 gallon of any combination of solvent containing materials where the material contain methyl chloroform (1,1,1-trichloroethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), or trichloroethylene, but no more than 120 gallons of any one solvent-containing material;

5.4.2.3 500 gallons of solvent-containing (or volatile organic compound containing) material used at a paint spray unit(s);

5.4.2.4 2,862,000 gallons of gasoline dispensed from equipment with Phase I and Phase II Vapor Recovery Systems as defined in Rule 4621;

5.4.2.5 188,000 gallons of gasoline dispensed from equipment without Phase I and Phase II Vapor Recovery Systems as defined in Rule 4621;

5.4.2.6 560 gallons of gasoline combusted;

5.4.2.7 6,640 gallons of diesel fuel combusted; or

5.4.2.8 28,560,000 cubic feet of natural gas combusted.

5.5 The reporting requirements of this rule shall not apply to stationary sources which emit in every 12-month period less than or equal to the following quantities:

5.5.1 25 tons per year of sulfur dioxide or carbon monoxide;

5.5.2 2.5 tons per year for oxides of nitrogen, or volatile organic compounds;

5.5.3 15 tons per year for particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10});

5.5.4 2.5 tons per year of a single HAP;

5.5.5 6.25 tons per year of any combination of HAPs; and

5.5.6 25 percent of any lesser threshold for a single HAP as the EPA may establish by rule.

5.6 Within 30 days of written request by the District or the EPA, the owner or operator of stationary source claiming exemption from the recordkeeping and reporting requirements of this rule shall demonstrate the stationary source's emissions or throughput are not in excess of the applicable quantities set forth in section 5.4.1, 5.4.2, or 5.5 of this rule.

6.0 General Requirements

Each stationary source shall meet either the emission limits prescribed in section 6.1 or the alternative operational limits in section 6.2 of this rule.

6.1 Emission Limits:

In every 12-month period, the stationary source shall not emit more than the following quantity of emissions:

6.1.1 5 tons per year of oxides of nitrogen or volatile organic compounds;

6.1.2 35 tons per year of sulfur dioxide or particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10});

6.1.3 50 tons per year of carbon monoxide;

6.1.4 5 tons per year of a single HAP,

6.1.5 12.5 tons per year of any combination of HAPs,

6.1.6 50 percent of any lesser threshold for a single HAP as the EPA may establish by rule, and

6.1.7 50 percent of the major source threshold for any other regulated air pollutant not listed in 6.1.1 through 6.1.6.

6.2 Alternative Operational Limits:

Stationary sources for which 90 percent of the stationary sources emissions from the permitted emissions units in every 12-month period are associated with one of the following operations, shall comply with the following operational limits for that operation:

6.2.1 Gasoline Dispensing Facility with Phase I and II Vapor Recovery Systems

No more than 7,000,000 gallons of gasoline dispensed in any 12-month period.

6.2.2 Degreasing or Solvent-Using Units

6.2.2.1 If the solvents do not include methyl chloroform (1,1,1-trichloroethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), or trichloroethylene, no more than 2,700 gallons of any combination of solvent-containing materials and 2,200 gallons of any one solvent-containing material is used in any 12-month period; or

6.2.2.2 If the solvents include methyl chloroform (1,1,1-trichloroethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), or trichloroethylene, no more than 2,900 gallons of any combination of solvent-containing materials and 1,200 gallons of any one solvent-containing material is used in any 12-month period.

6.2.3 Paint Spraying Units

The total usage rate of all VOC-containing materials, including but not limited to coatings, thinners, reducers, and clean-up solution is no more than 2,100 gallons in any 12-month period.

6.2.4 Diesel-Fueled Emergency Stand-by Engine(s) of less than 1,000 Brake Horsepower

Fuel usage is no more than 26,400 gallons in any 12-month period.

7.0 Recordkeeping and Reporting Requirements

7.1 The recordkeeping and reporting requirements of this rule shall not replace any recordkeeping or reporting requirement contained in an operating permit or in a District, State, or Federal rule or regulation.

7.2 Any stationary source previously exempt from the recordkeeping and reporting requirements of this rule in accordance with section 5.4 of this rule, shall comply with applicable recordkeeping and reporting requirements of this rule if the stationary source exceeds the quantities specified in sections 5.4.1, or 5.4.2 of this rule.

7.3 Immediately after the effective date of this rule, the owner or operator of a stationary source subject to this rule shall comply with any applicable recordkeeping requirements in this section.

7.4 Any additional information requested by the APCO shall be submitted to the APCO within 30 days of the date of request.

7.5 Except for stationary sources operating under the alternative operational limits of this rule, the owner or operator shall comply with the following recordkeeping requirements:

7.5.1 The owner or operator of a stationary source subject to this rule shall keep and maintain records for each permitted emission unit or groups of permitted emission units sufficient to determine actual emissions. Such information shall be summarized in a monthly log, maintained on site by the owner or operator for five years, and be made available to District, CARB, or EPA staff upon request. (In some cases it may be appropriate to keep records on groups of emissions units which are connected in series. Examples are internal combination engines in the oil fields with a common fuel line, or a series of paint spray booths with a common feed.)

7.5.2 Coating/Solvent Emission Unit

The owner or operator of a stationary source subject to this rule that contain a coating/solvent emission unit or uses a coating, solvent, ink or adhesive shall keep and maintain the following records:

7.5.2.1 A current list of all coatings, solvents, inks and adhesives in use. This list shall include: information on the manufacturer, brand, product name or code, VOC content in grams per liter or pounds per gallon, HAPs content in grams per liter or pounds per gallon, or manufacturer's product

specifications, material VOC content reports or laboratory analyses providing this information;

7.5.2.2 A description of any equipment used during and after coating/solvent application, including type, make and model; maximum design process rate or throughput; control device(s) type and description (if any); and a description of the coating/solvent application/drying method(s) employed;

7.5.2.3 A monthly log of the consumption of each solvent (including solvents used in clean-up and surface preparation), coating, ink and adhesive used; and

7.5.2.4 All purchase orders, invoices, and other documents to support information in the monthly log.

7.5.3 Organic Liquid Storage Unit

The owner or operator of a stationary source subject to this rule that contains a permitted organic liquid storage unit shall keep and maintain the following records:

7.5.3.1 A monthly log identifying the liquid stored and monthly throughput; and

7.5.3.2 Information on the tank design and specifications including control equipment.

7.5.4 Combustion Emission Unit

The owner or operator of a stationary source subject to this rule that contains a combustion emission unit shall keep and maintain the following records:

7.5.4.1 Information on equipment type, make and model, maximum design process rate or maximum power input/output, minimum operating temperature (for thermal oxidizers) and capacity, control device(s) type and description (if any) and all source test information; and

7.5.4.2 A monthly log of hours of operation, fuel type, fuel usage, fuel heating value (for non-fossil fuels; in terms of BTU/lb or BTU/gal), percent sulfur for fuel oil and coal, and percent nitrogen for coal.

7.5.5 Emission Control Unit

The owner or operator of a stationary source subject to this rule that contains an emission control unit shall keep and maintain the following records:

7.5.5.1 Information on equipment type and description, make and model, and emission units served by the control unit;

7.5.5.2 Information on equipment design including where applicable: pollutant(s) controlled; control effectiveness; maximum design or rated capacity; inlet and outlet temperatures, and concentrations for each pollutant controlled; catalyst data (type, material, life, volume, space velocity, ammonia injection rate and temperature); baghouse data (design, cleaning method, fabric material, flow rate, air/cloth ratio); electrostatic precipitator data (number of fields, cleaning method, and power input); scrubber data (type, design, sorbent type, pressure drop); other design data as appropriate; all source test information; and

7.5.5.3 A monthly log of hours of operation including notation of any control equipment breakdowns, upsets, repairs, maintenance and any other deviations from design parameters.

7.5.6 General Emission Unit

The owner or operator of a stationary source subject to this rule that contains an emission unit not included in section 7.5.2 through 7.5.4 above shall keep and maintain the following records:

7.5.6.1 Information on the process and equipment including the following: equipment type, description, make and model; maximum design process rate or throughput; control device(s) type and description (if any);

7.5.6.2 Any additional information requested in writing by the APCO;

7.5.6.3 A monthly log of operating hours, each raw material used and its amount, each product produced and its production rate; and

7.5.6.4 Purchase orders, invoices, and other documents to support information in the monthly log.

7.5.7 At the time of annual District review of a permit to operate under Rule 2520, each owner or operator of a stationary source subject to this rule shall submit to the District a process statement. The statement shall be signed by the owner or operator and certify that the information provided is accurate and true.

7.6 Upon choosing to operate a stationary source subject to this rule under any one alternative operational limit, the owner or operator shall operate the stationary source in compliance with the alternative operational limit as prescribed in section 6.2 and shall comply with the following recordkeeping and reporting requirements:

7.6.1 The owner or operator shall report within 24 hours to the APCO any exceedance of the alternative operational limit.

7.6.2 The owner or operator shall maintain all purchase orders, invoices, and other documents to support information required to be maintained in a monthly log. Records required under this section shall be maintained on site for five years and be made available to District or EPA staff upon request.

7.6.3 Gasoline Dispensing Facility Equipment with Phase I and II Vapor Recovery Systems

The owner or operator shall operate the gasoline dispensing equipment in compliance with the following requirements:

7.6.3.1 A monthly log of gallons of gasoline dispensed in the preceding month with a monthly calculation of the total gallons dispensed in the previous 12 months shall be kept on site.

7.6.3.2 A copy of the monthly log shall be submitted to the APCO at the time of annual permit renewal. The owner or operator shall certify that the log is accurate and true.

7.6.4 Degreasing or Solvent-Using Unit

The owner or operator shall operate the degreasing or solvent-using unit(s) in compliance with the following requirements:

7.6.4.1 A monthly log of amount and type of solvent used in the preceding month with a monthly calculation of the total gallons used in the previous 12 months shall be kept on site.

7.6.4.2 A copy of the monthly log shall be submitted to the APCO at the time of annual permit renewal. The owner or operator shall certify that the log is accurate and true.

7.6.5 Paint Spraying Unit

The owner or operator shall operate the paint spraying unit(s) in compliance with the following requirements:

7.6.5.1 A monthly log of the gallons of VOC-containing materials used in the preceding month with a monthly calculation of the total gallons used in the previous 12 months shall be kept on site.

7.6.5.2 A copy of the monthly log shall be submitted to the APCO at the time of annual permit renewal. The owner or operator shall certify that the log is accurate and true.

7.6.6 Diesel-Fueled Emergency Standby Engine(s) with Output Less Than 1,000 Brake Horsepower

The owner or operator shall operate the emergency standby engine(s) in compliance with the following requirements:

7.6.6.1 A monthly log of hours of operation, gallons of fuel used, and a monthly calculation of the total hours operated and gallons of fuel used in the previous 12 months shall be kept on site.

7.6.6.2 A copy of the monthly log shall be submitted to the APCO at the time of annual permit renewal. The owner or operator shall certify that the log is accurate and true.

8.0 Violations

8.1 Failure to comply with any of the applicable provisions of this rule shall constitute a violation of this rule. Each day during which a violation of this rule occurs is a separate offense.

8.2 A stationary source subject to this rule shall be subject to applicable federal requirements for a major source, including Rule 2520 when the conditions specified in either subsections 8.2.1 or 8.2.2 below, occur:

8.2.1 Commencing on the first day following every 12-month period in which the stationary source exceeds a limit specified in section 6.1 above and any applicable alternative operational limit specified in section 6.2, above, or

8.2.2 Commencing on the first day following every 12-month period in which the owner or operator can not demonstrate that the stationary source is in compliance with the limits in section 6.1 above or any applicable alternative operational limit specified in section 6.2 above.

8.3 The APCO shall evaluate a stationary source's compliance with the emission limitations in section 6.1 above as part of the District's annual permit review process required by Health & Safety Code section 42301(e). In performing the evaluation, the APCO shall consider any annual process statement submitted pursuant to section 7.0 reporting requirements. In the absence of valid continuous emission monitoring data or source test data, actual emissions shall be calculated using emissions factors approved by the EPA, CARB, or the APCO.

RULE 3170 FEDERALLY MANDATED OZONE NONATTAINMENT FEE (Adopted May 16, 2002; Amended July 17, 2003; Amended May 19, 2011)

1.0 Purpose

The purpose of this rule is to satisfy requirements specified in Section 185 and Section 182(f) of the 1990 amendments to the federal Clean Air Act (CAA) by utilizing an alternative fee-equivalency program consistent with the principles of Section 172(e) of the CAA.

2.0 Applicability

This rule applies to any major source of NOx or VOC. The fees required pursuant to this section shall be in addition to permit fees and other fees required under other Rules and Regulations. The fees established by this rule shall cease to be applicable when the San Joaquin Valley Air Basin (SJVAB) has met the revoked federal one-hour ambient air quality standard for ozone.

For the purposes of this rule, the San Joaquin Valley Air Basin shall have met the revoked federal one-hour ambient air quality standard for ozone upon EPA's determination, through notice-and-comment rulemaking, of concurrence with a demonstration by the APCO and the California Air Resources Board that the average number of days per calendar year with maximum hourly average concentration above 0.12 ppm is less than or equal to one (1), for each monitor. To make this demonstration, the APCO will, using all available quality assured monitoring data, calculate at each monitor the average number of days over the standard per year during a three-year period according to the procedures found in 40 CFR Part 50 Appendix H, and show that the improvement in air quality is due to permanent and enforceable emissions reductions.

3.0 Definitions

3.1 Actual Emissions: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.2 Baseline Period: for each major source, the Baseline Period shall be one of the following periods:

3.2.1 Calendar year 2010; or

3.2.2 An alternative baseline period reflecting the average of at least two consecutive years within 2006 through 2010, if those years are determined by the APCO as more representative of normal source operation.

3.3 Billing Year: the year in which a particular Rule 3170 fee is invoiced, generally the year following the fee assessment basis year.

3.4 California Vehicle Code Fees: those fees collected by the California Department of Motor Vehicles to be forwarded to the District as required under Vehicle Code Section 9250.17 and Health and Safety Code Section 40610-40613, which fees are required by Health and Safety Code Section 40612 to be expended on establishing and implementing incentive-based programs, such as the District's Emissions Reductions Incentive Program, to achieve surplus emissions reductions to remediate air pollution harms created by motor vehicles and that are intended to achieve and maintain state and federal ambient air quality standards. These fees shall therefore be used in programs designed to reduce NOx and VOC emissions in the San Joaquin Valley.

3.5 Clean Emissions Unit: an emissions unit that the APCO has determined meets one of the following criteria:

3.5.1 The unit is equipped with an emissions control technology with a minimum control efficiency of at least 95% (or at least 85% for lean-burn, internal combustion engines); or

3.5.2 The unit is equipped with emission control technology that meets or exceeds the requirements for achieved-in-practice Best Available Control Technology as accepted by the APCO during the period from 2006 through 2010.

3.6 Fee Assessment Basis Year: the year in which emissions occurred for which fees are assessed under Section 5.0 of this rule.

3.7 Major Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.8 NOx: any nitrogen oxide compounds.

3.9 VOC: any Volatile Organic Compound, as defined in Rule 1020 (Definitions).

4.0 Exemptions

4.1 Any unit that is a clean emissions unit for NOx shall not be subject to the NOx fee requirements of this rule.

4.2 Any unit that is a clean emissions unit for VOC shall not be subject to the VOC fee requirements of this rule.

5.0 Fee Requirements

5.1 Each major source of NOx or VOC will be assessed an annual fee payable to the District. The fee shall be the sum of the NOx Fee and the VOC Fee, which shall be calculated as follows, in accordance with Section 185 (b) of the federal Clean

Air Act.

$$\text{NOx Fee (in \$)} = [A - (0.8 \times B)] \times C$$

$$\text{VOC Fee (in \$)} = [D - (0.8 \times E)] \times C$$

Where:

A = The total amount of NO_X emissions actually emitted from permitted emissions units at a major NOx source during the applicable fee assessment basis year, in tons per year.

B = The actual average annual emissions of NO_X during the baseline period, or the average annual emissions allowed by the facility's permit during the baseline period, whichever is lower, in tons per year. B shall be set equal to zero (0) if the unit was not permitted during the baseline period, except for units replaced since the baseline period, B shall represent the emissions during the baseline period of the unit replaced.

C = The fee rate of $5,000 per ton of pollutant, in 1990 dollars, adjusted by the U.S. City Average Consumer Price Index for all-urban consumers, in accordance with Section 502(b)(3)(B)(v) of the federal Clean Air Act.

D = The total amount of VOC emissions actually emitted from permitted emissions units at a major VOC source during the applicable fee assessment basis year, in tons per year.

E = The actual average annual emissions of VOC during the baseline period, or the average annual emissions allowed by the facility's permit during the baseline period, whichever is lower, in tons per year. E shall be set equal to zero (0) if the unit was not permitted during the baseline period, except for units replaced since the baseline period, E shall represent the emissions during the baseline period of the unit replaced.

5.2 In the equation for NOx Fee in Section 5.1, if A is less than or equal to 80% of B, the fee assessment for NOx shall be set to zero.

5.3 In the equation for VOC Fee in Section 5.1, if D is less than or equal to 80% of E, the fee assessment for VOC shall be set to zero.

5.4 By May 1, 2012, and each May 1 thereafter, the APCO shall assess a fee on each agency or person subject to this rule for emissions in the previous calendar year. The assessed fee shall be calculated in accordance with Section 5.1.

5.5 By June 30, 2012, and each June 30 thereafter, each agency or person shall remit the assessed fee to the District.

5.6 If all fees due have not been paid by June 30, the fee shall be increased in

accordance with the schedule provided in Rule 3010 Section 11.0 (Late Fees). Nonpayment of the increased fees by July 30 may result in suspension of the facility's Permit(s) to Operate.

6.0 Emissions Reporting

6.1 All major sources subject to this rule must provide baseline period actual emissions information within 60 days of the District's request, or by the due date of the initial annual emissions statement required under Section 6.2, whichever is earlier. This information must include all necessary baseline period actual emissions data for VOC and NOx from each permitted emissions unit, and justification of any proposed alternative baseline period.

6.2 All major sources subject to this rule must provide annual emission statements that report actual emissions of VOC and NOx for the prior calendar year from each permitted emissions unit. Such statements shall be submitted in accordance with the format established by the District before March 31 of each year.

6.3 Operators of a clean emissions unit must distinguish in their annual emission statements which units are claimed as clean emissions units, and include a justification of that claim. Referencing of an applicable District-published clean unit determination suffices for such justification.

7.0 Fee Equivalency Demonstration System

7.1 Actual Emission Tracking System

The APCO shall implement a system for tracking all information necessary to make an annual demonstration that the sum of fees collected under this rule, plus all California vehicle code fees collected, is equal to or greater than the total penalty fee that would be collected under a direct implementation of the federal ozone nonattainment fee, codified in Section 185 of the federal Clean Air Act, including, but not limited to, the following:

7.1.1 All baseline period calculations, including documentation of any approved alternative baseline period,

7.1.2 All emissions data reported in the annual emissions statements required under this rule,

7.1.3 The identification and justification of any clean emissions unit exempted from paying a fee under this rule,

7.1.4 The NOx and VOC emissions and corresponding fee amount excluded from payment based on the clean emissions unit determination.

7.2 Annual Fee Equivalency Demonstration Report

On or before November 1 of each year, the APCO shall prepare an Annual Fee Equivalency Demonstration Report.

7.2.1 The report shall document:

7.2.1.1 The total fees collected under this rule that have not been reported in a prior Annual Fee Equivalency Demonstration Report, and

7.2.1.2 The total California vehicle code fees collected that have not been used to demonstrate equivalency in a prior Annual Fee Equivalency Demonstration Report.

7.2.1.3 The total Section 185 fees that would be collected under a direct implementation of the federal ozone nonattainment fee, codified in Section 185 of the federal Clean Air Act. For the purposes of this report, the fee that would have been collected under Section 185 shall be calculated using the fee calculations of Section 5.1 through 5.3 of this rule, and calendar year 2010 shall be used as the baseline period.

7.2.2 The report shall demonstrate whether the sum of the total Rule 3170 fees identified under Section 7.2.1.1, plus the total California vehicle code fees identified under Section 7.2.1.2, is equal to or greater than the total penalty fee that would be collected under a direct implementation of Section 185 of the federal Clean Air Act.

7.2.3 The report shall be made available to the public and mailed to the federal EPA no later than November 1 of each billing year.

7.3 Remedy for Fee Collection Shortfall

7.3.1 If any Annual Fee Equivalency Demonstration Report demonstrates a shortfall in total fees collected compared to the fees that would have been collected under a direct implementation of the Section 185 penalty fee requirement, the District shall assess and invoice, within 90 days following the demonstration of the shortfall, sufficient fees to recover the entire amount of the shortfall.

7.3.1.1 The shortfall fee described in Section 7.3.1 shall be collected from major sources of NOx or VOC for which a fee was calculated according to Section 5.1 through 5.3 for the fee assessment basis year for which there was a shortfall in fee collection, and shall be assessed on an emissions-weighted basis.

7.3.1.2 The emissions-weighted basis for the shortfall fee shall be based

on the emissions for which a fee was calculated per Section 5.1 through 5.3 during the respective fee assessment basis year.

7.3.1.3 Emissions from units for which a fee was already paid under this rule for the respective fee assessment basis year shall not be included in the emissions-weighting described above.

7.3.1.4 Within 270 days of demonstrating a shortfall in an annual fee equivalency demonstration report, a shortfall remedy report shall be submitted to EPA demonstrating the implementation of this section and that the remedy was successful in collecting sufficient fees to recover the entire amount of the shortfall.

7.3.2 If all fees due from an individual facility under this section have not been paid by within 60 days of the invoice date, the fee shall be increased in accordance with the schedule provided in Rule 3010 Section 11.0 (Late Fees). Nonpayment of the increased fees within 90 days of the original invoice date may result in suspension of the facility's Permit(s) to Operate.

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

RULE 4101 - VISIBLE EMISSIONS

(Adopted May 21, 1992) (Amended December 17, 1992; June 21, 2001; November 15, 2001, February 17, 2005)

1.0 Purpose

The purpose of this rule is to prohibit the emissions of visible air contaminants to the atmosphere.

2.0 Applicability

The provisions of this rule shall apply to any source operation which emits or may emit air contaminants.

3.0 Definitions

3.1 APCO: The Air Pollution Control Officer of the San Joaquin Valley Unified air Pollution Control District, or any person authorized to act on behalf of the APCO.

3.2 Observer: a human observer certified and trained by the California Air Resources Board, or a certified in-stack opacity monitoring system calibrated in accordance with the test method specified in Section 6.2.

3.3 Opacity: the degree to which emissions reduce the transmission of light and obscure the view of an object in the background. Determination of opacity shall be conducted in accordance with the test method specified in Section 6.1.

3.4 Visible Emissions: any particulate or gaseous matter which can be detected by the human eye.

4.0 Exemptions

The provisions of this rule do not apply to:

4.1 Smoke from fires set by or permitted by any public officer, if such fire is set or permitted in the performance of the official duty of such officer, and such fire in the opinion of such officer is necessary:

4.1.1 For the purpose of the prevention of a fire or health hazard which cannot be abated by any other means, or

4.1.2 For instruction of public employees in the methods of fighting fire.

4.2 Smoke from fires set pursuant to a permit on an industrial property used for the purpose of instructing employees in methods of fighting fire.

4.3 The use of an orchard or citrus grove heater which does not produce unconsumed solid carbonaceous matter at a rate in excess of one (1) gram per minute.

4.4 Any open burning, prescribed burning, or hazard reduction burning permitted or exempted by Rule 4103 (Open Burning) or Rule 4106 (Prescribed Burning and Hazard Reduction Burning).

4.5 Use of any aircraft to distribute seed, fertilizer, insecticides, or other agricultural aids over lands devoted to the growing of crops or raising of fowl or animals.

4.6 Open outdoor fires used only for cooking of food for human beings or for recreational purposes.

4.7 Emissions from equipment used for the instruction or certification of individuals in the evaluation of visible emissions upon approval from the APCO.

4.8 Wet plumes where the presence of uncombined water is the only reason for the failure of an emission to meet the limitations of this rule. The burden of proof, which establishes the application of this rule, shall be upon the person seeking to come within its provisions.

4.9 Emissions from maritime vessels using steam boilers during emergency boiler shutdowns for safety reasons, safety and operational tests required by governmental agencies, and where maneuvering is required to avoid hazards.

4.10 Emissions from maritime vessels during a breakdown condition, as long as the discharge is reported in accordance with District requirements pursuant to Rule 1100 (Equipment Breakdowns) and breakdown relief is granted by the APCO.

4.11 The use of an obscurant for the purpose of training military personnel and the testing of military equipment by the United States Department of Defense on any military reservation.

4.12 Emissions subject to or specifically exempt from Regulation VIII (Fugitive PM10 Prohibitions).

5.0 Requirements

A person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:

5.1 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.

5.2 Of such opacity as to obscure an observer's view to a degree equal to or greater than the smoke described in Section 5.1 of this rule.

6.0 Test Methods

The following test methods shall be used unless otherwise approved by the APCO and United States Environmental Protection Agency (US EPA).

6.1 US EPA Method 9 for visual determination of the opacity of emissions.

6.2 40 Code of Federal Regulations (CFR) Part 60 Appendix B Performance Specification 1 for determination of certified, calibrated in-stack opacity monitoring system.

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RULE 4103 OPEN BURNING (Adopted June 18, 1992; Amended December 17, 1992; Amended December 16, 1993; Amended June 21, 2001; Amended September 16, 2004; Amended May19, 2005; Amended May 17, 2007; Amended April 15, 2010 - Not effective until June 1, 2010)

1.0 Purpose

The purpose of this rule is to permit, regulate, and coordinate the use of open burning while minimizing smoke impacts on the public.

2.0 Applicability

This rule applies to open burning conducted in the San Joaquin Valley Air Basin, with the exception of prescribed burning and hazard reduction burning as defined in Rule 4106 (Prescribed Burning and Hazard Reduction Burning).

3.0 Definitions

3.1 Agricultural Burning:

3.1.1 The open burning of vegetative materials produced wholly from agricultural operations.

3.1.2 The burning of grass and weeds in fence rows, ditch banks, and berms in non-tillage orchard operations and fields being prepared for cultivation.

3.1.3 The burning of materials not produced wholly from agricultural operations but which are essential to agricultural operations, except as prohibited by Section 5.5.7 of this rule. Examples are paper trays for drying raisins, paper hot caps, untreated grape stakes, and pesticide and fertilizer sacks burned in the field where they are emptied.

3.2 Agricultural Operations: the growing and harvesting of crops or the raising of fowl or animals, for the primary purpose of earning a living, or of conducting agricultural research or instruction by an educational institution.

3.3 Agricultural Waste: any vegetative materials produced wholly from agricultural operations, the operation or maintenance of a system for the delivery of water in agricultural operations, or materials described in Section 3.1.3.

3.4 Air Pollution Control Officer (APCO): the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District, as defined in Rule 1020 (Definitions).

3.5 Air Quality: the characteristics of the ambient air as indicated by concentrations of the six criteria air pollutants for which Federal and State standards have been established pursuant to section 108 and 109 of the Federal Clean Air Act [i.e., particulate matter, sulfur dioxide, nitrogen dioxide, ozone, carbon monoxide and lead], by State air quality standards, and by visibility in mandatory Federal Class I areas, as specified pursuant to section 169A of the Federal Clean Air Act.

3.6 Allocation System: a system in the smoke management program that limits the amounts, timing, and locations of burning in order to minimize smoke impacts.

3.7 Ambient Air: that portion of the atmosphere, external to buildings, to which the general public has access.

3.8 Ambient Air Quality Standards: the national ambient air quality standards (NAAQS) promulgated by the US Environmental Protection Agency.

3.9 Approved Ignition Devices: those instruments or materials that will ignite agricultural waste and other materials without the production of black smoke by the ignition device. This would include such devices as liquid petroleum gas, butane, propane, or diesel oil burners and flares where the device produces a flame and the flame is then used for ignition, or other devices approved by the Air Pollution Control Officer (APCO).

3.10 ARB or State Board: the California Air Resources Board.

3.11 Board: the Governing Board of the San Joaquin Valley Unified Air Pollution Control District, as defined in Rule 1020 (Definitions).

3.12 Campfire: an attended recreational fire at a designated campground or in a Wildland, as defined in Rule 4106 (Prescribed Burning and Hazard Reduction Burning), when approved by the appropriate land manager. A campfire shall not be larger than three feet in diameter and the fuel must be clean, dry wood with no other debris, trash, garbage or refuse.

3.13 Contraband: any illegal material or prohibited good that has been confiscated within the San Joaquin Valley Air Basin by a law enforcement agency or fire department, including but not limited to explosives, pyrotechnics, and illegal drugs.

3.14 EPA: the United States Environmental Protection Agency or any person designated to act on its behalf.

3.15 Field Crops: includes alfalfa, asparagus, barley stubble, beans, corn, cotton, flower straw, hay, lemon grass, oat stubble, pea vines, peanuts, rice stubble, safflower, sugar cane, vegetable crops, and wheat stubble, and other field crops, as determined by the State Board.

3.16 Fire Hazard: a situation in which a fire could present a threat to the health and/or safety of a person or persons but which does not impose imminent fire danger.

3.17 Fire Protection Agency: any agency with the responsibility and authority to protect people, property, and the environment from fire, and having jurisdiction within the San Joaquin Valley Air Basin.

3.18 Imminent and Substantial Economic Loss: the loss of a planting season or the irreparable harm of a crop.

3.19 Imminent Fire Hazard: a hazard that presents imminent danger to the health and/or safety of a person or persons and for which direct abatement by fire is necessary.

3.20 Metropolitan Area: the sphere of influence of an incorporated city as defined by the Local Agency Formation Commission.

3.21 No-Burn Day: any day on which agricultural burning is prohibited by the ARB, the District, or by a public fire protection agency for purposes of fire control or prevention.

3.22 Noxious Weeds: as defined in Section 403 of the Plant Protection Act (7 USC 7702).

3.23 Open Burning or Open Outdoor Fire: the combustion of any combustible refuse or other material of any type outdoors in the open air, not in any enclosure, where the products of combustion are not directed through a flue. For the purposes of this rule, prescribed burning and hazard reduction burning are not considered to be open burning.

3.24 Orchard Removal Matter: agricultural waste generated by the removal of orchards. This includes leaves, branches, trunks, roots, stumps and untreated branch support sticks.

3.25 Orchard Removals: includes, but is not limited to orchard removal matter, stumps, and untreated sticks.

3.26 Other Materials: includes, but is not limited to brooder paper, deceased goats, and diseased bee hives.

3.27 Other Weeds and Maintenance: includes, but is not limited to, ditch bank work, canal bank work, dodder weed, star thistle, tumbleweed, noxious weeds, pesticide sacks, and fertilizer sacks burned in the fields where they are emptied.

3.28 Permit: as used herein refers to a District Open Burn Permit.

3.29 Prunings: the vegetative material produced from the regularly scheduled removal of any portion of the agricultural crop for the purpose of achieving a desired size, shape, or to promote plant growth for improved cultivation, harvesting, and the maintenance of crop health. The regularly scheduled removal does not include the incidental cuttings of dead or broken branches, water-sprouts or suckers, and other damaged crops. For the purpose of this rule, prunings shall refer to prunings from apple crops, apricot crops, avocado crops, bushberry crops, cherry crops, Christmas trees, citrus crops, date crops, eucalyptus crops, fig crops, kiwi crops, nectarine crops, nursery prunings, olive crops, pasture or corral trees, peach crops, pear crops, persimmon crops, pistachio crops, plum crops, pluot crops, pomegranate crops, prune crops, quince crops, rose crops, and other prunings, as determined by the State Board.

3.30 Religious Ceremonial Fires: any fires conducted to fulfill the doctrinal requirements of an organized religion.

3.31 Residual Rice Stubble: rice stubble remaining on the field that can not be removed completely by the bailing equipment.

3.32 Single Location: a property where burning is conducted, which is under the same or common ownership or operation, and located on one (1) or more parcels. For burn permit and fire reporting purposes, properties separated by rivers, streams, or publicly owned roadways and canals are considered separate locations.

3.33 Smoke Management Program: a District program that utilizes a daily allocation system for the purpose of limiting the amounts, timing, and locations of open burning to minimize smoke impacts. The smoke management program considers several factors including air quality, meteorological conditions expected during burning, locations of smoke sensitive areas, locations of materials to be burned, and types and amounts of materials to be burned.

3.34 Smoke Sensitive Areas: are populated areas and other areas where the District determines that smoke and air pollutants can adversely affect public health or welfare. Such areas can include, but are not limited to, towns and villages, campgrounds, trails, populated recreational areas, hospitals, nursing homes, schools, roads, airports, public events, shopping centers and mandatory Class 1 areas.

3.35 Spot Burning: burning of rice stubble in areas of the field where rice stubble has been compacted or flattened by the harvesting or baling equipment tracks.

3.36 Surface Harvested Prunings: the vegetative material produced from the regularly scheduled removal of any portion of the agricultural crop for the purpose of achieving a desired size, shape, or to promote plant growth for improved cultivation, harvesting, and the maintenance of crop health. The regularly scheduled removal does not include the incidental cuttings of dead or broken branches, water-sprouts or suckers, and other damaged crops. For the purpose of this rule, surface harvested prunings includes, but is not limited to, almond prunings, walnut prunings, pecan prunings, grape vines, and vineyard materials.

3.37 Toxic Substances: substances identified by the manufacturer on the package or in a material safety data sheet as posing health hazards.

3.38 Vineyard Removal Materials: agricultural waste generated by the removal of vineyards. This includes grape vines, grape canes, trunks, roots, untreated grapestakes, and wires, as well as similar materials from kiwi vineyards.

3.39 Vineyard Materials: includes, but is not limited to, grape canes and raisin trays.

3.40 Weed Abatement: the reduction or removal of noxious weeds and grasses. Weed abatement includes, but is not limited to, berms, Bermuda grass, fence rows, grass, pasture, and ponding or levee banks.

4.0 Exemptions

4.1 The requirements of this rule shall not apply to:

4.1.1 Open outdoor fires used solely for the purpose of cooking food for human consumption, campfires, and religious ceremonial fires, where the combustible material is clean, dry wood or charcoal.

4.1.2 The prevention of an imminent fire hazard declared by a fire agency that cannot be abated by any other means.

4.1.3 The setting of backfires necessary to save life, and/or in the defense of assets at risk pursuant to Section 4426 of the Public Resources Code.

4.1.4 The burning, in a respectful and dignified manner, of an unserviceable American Flag that is no longer fit for display.

4.1.5 The burning of agricultural waste or crops pursuant to a lawful abatement order issued by the local county agricultural commissioner as described in Section 5403 and 5404 of the California Food and Agricultural Code.

4.2 The following activity is exempt from rule requirements, but may only be conducted pursuant to Air Pollution Control Officer (APCO) written authorization:

4.2.1 A fire set by or authorized by any public officer authorized in the performance of his official duty to engage in fire protection activities provided that a burn plan, as described in Section 6.2.1, has been previously submitted to and approved by the APCO and such a fire is necessary for the instruction of employees in fire fighting methods.

4.3 The following activities are exempt from the no-burn day restrictions of Section 6.1.8, subject to APCO authorization and permit requirements. These activities are not exempt from the provisions of Sections 5.1 through 5.5:

4.3.1 The burning of empty sacks which contained pesticides or other toxic substances, provided that the sacks are within the definition of agricultural burning in Section 3.1.3.

4.3.2 The burning of paper raisin trays.

4.3.3 Other agricultural burning, if the denial of such burning would threaten imminent and substantial economic loss, and which is conducted pursuant to the following provisions:

4.3.3.1 The APCO may only authorize such burning when downwind metropolitan areas are forecast by the District to achieve the ambient air quality standards and/or a fire agency has not declared a no-burn day due to safety issues.

4.3.3.2 The District shall limit the amount of acreage that can be burned on any one no-burn day in any one county to 200 acres.

4.3.3.3 The granting of an exemption does not exempt the applicant from any other District or fire control regulations.

4.3.3.4 Within fifteen (15) days of the granting of an exemption, the applicant shall return a signed application form that provides the reasons for requesting the exemption and shall pay the required District fee for said exemption.

4.3.4 The burning of contraband is exempt from the no-burn day restrictions of Section 6.1.8, but may only be conducted pursuant to APCO written authorization and the preparation of a burn plan as described in Section 6.2.2. Contraband burning is subject to the provisions of Section 5.7.

5.0 Requirements

5.1 Except as otherwise provided in this rule, no person shall set, permit, or use an open outdoor fire for the purpose of disposal or burning of petroleum wastes; demolition or construction debris; residential rubbish; garbage or vegetation; tires; tar; trees; woodwaste; or other combustible or flammable solid, liquid or gaseous waste; or for metal salvage or burning of motor vehicle bodies.

5.2 The APCO shall allocate burning based on the predicted meteorological conditions and whether the total tonnage to be emitted would allow the volume of smoke and other contaminants to cause a public nuisance, impact smoke sensitive areas, or create or contribute to an exceedance of an ambient air quality standard.

5.3 The APCO shall restrict the time of day when burns are ignited and conducted, as necessary.

5.4 No open burning shall be permitted that will create a nuisance as defined in Section 41700 of the California Health and Safety Code.

5.5 Agricultural Burning

The following conditions are in addition to those requirements specified in Sections 5.1 through 5.4:

5.5.1 No permit shall be issued for the burning of the following categories of agricultural waste, except for crops covered by Section 5.5.2:

5.5.1.1 Field Crops,

5.5.1.2 Prunings,

5.5.1.3 Weed Abatement, except for categories covered by Section 5.5.3,

5.5.1.4 Orchard Removals,

5.5.1.5 Vineyard Removal Materials,

5.5.1.6 Surface Harvested Prunings, and

5.5.1.7 Other Materials.

5.5.2 The District may postpone the prohibitions in Section 5.5.1 and may issue permits for the burning of any agricultural waste, if all of the following criteria are met:

5.5.2.1 The Board determines that there is no economically feasible alternative means of eliminating the waste.

5.5.2.2 The Board determines that there is no long-term federal or state funding commitment for the continued operation of biomass facilities in the San Joaquin Valley or development of alternatives to burning.

5.5.2.3 The Board determines that the continued issuance of permits for that specific category or crop will not cause, or substantially contribute to, a violation of an applicable federal ambient air quality standard.

5.5.2.4 The California Air Resources Board concurs with the Board's determinations pursuant to this section.

5.5.3 Owner/operators shall use at least one of the Best Management Practices for the control of other weeds and maintenance listed in Attachment 1, or other practices as approved by the APCO, for the control of star thistle, dodder weeds, tumble weeds, noxious weeds, and weeds located along ditch banks or canal banks, and the disposal of pesticide sacks or fertilizer sacks. The APCO shall not approve any alternative practice unless it is demonstrated that the alternative is at least as effective in controlling emissions as the listed practices.

5.5.4 Agricultural waste shall not be burned unless it is arranged or loosely stacked in such a manner as to promote drying and insure combustion with a minimum of smoke production.

5.5.5 Agricultural waste to be burned shall be ignited only with an approved ignition device.

5.5.6 Agricultural waste shall not be burned unless it is free of excessive dirt, soil, and visible surface moisture.

5.5.7 Agricultural waste does not include and shall not be burned unless it is free of such items as plastic, rubber, ornamental or landscape vegetation, shop wastes, construction and demolition material, garbage, oil filters, tires, tar paper, broken boxes, pallets, sweatboxes, packaging material, packing boxes or any other material produced in the packing or processing of agricultural products, and pesticide and fertilizer containers (except sacks burned in the field where they were emptied).

5.5.8 Orchard or vineyard removal waste, or any other material, generated as a result of land use conversion from agricultural to nonagricultural purposes shall not be burned.

5.5.9 Agricultural waste shall not be burned unless it has been allowed to dry for the following minimum time periods:

Rice Straw	See Section 5.5.14.4
Prunings and Small Branches	Three (3) Weeks
Large Branches	Six (6) Weeks

5.5.10 Agricultural burning shall be monitored and attended as necessary to prevent smoldering.

5.5.11 No agricultural waste shall be burned except during daylight hours.

5.5.12 No agricultural waste shall be added to an existing fire after 5:00 p.m.

5.5.13 All burning shall be ignited as rapidly as practicable within applicable fire control restrictions.

5.5.14 Field crop burning:

The requirements of Section 5.5.14 do not apply to vines and tree pruning burning.

5.5.14.1 No field crop burning shall commence before 10:00 a.m., or after 2:00 p.m., of any day, unless local conditions indicate that other hours are appropriate.

5.5.14.2 Rice, barley, oat, and wheat straw shall be ignited only by strip firing into-the-wind or by backfiring, except under a special permit issued by the District when and where extreme fire hazards are declared by the public fire protection agency to exist, or where crops are determined by the District not to lend themselves to these techniques.

5.5.14.3 All rice harvesting shall employ a mechanical straw spreader to ensure even distribution of the straw with the exception that rice straw may be left in rows, provided it meets drying time criteria, as specified in Section 5.5.14.4 prior to a burn. Rice straw may also be left standing, provided it is dried and meets the crackle test criteria described in Section 5.5.14.5.

5.5.14.4 After harvesting, no rice straw shall be burned prior to the following drying periods:

5.5.14.4.1 Spread rice straw: three (3) days; or

5.5.14.4.2 Rowed rice straw: ten (10) days.

5.5.14.4.3 Sections 5.5.14.4.1 and 5.5.14.4.2 shall not apply if the rice straw makes an audible crackle when tested just prior to burning with the test method described in Section 5.5.14.5.

5.5.14.5 When checking the field for moisture, a composite sample of straw from under the mat, in the center of the mat, and from different areas of the field shall be taken to insure a representative sample. A handful of rice straw from each area will give a good indication. Rice straw is dry enough to burn if a handful of straw selected as described above crackles when it is bent sharply.

5.5.14.6 After a rain exceeding fifteen hundredths (0.15) inch, notwithstanding Section 5.5.14.3, rice straw shall not be burned unless the straw makes an audible crackle when tested just prior to burning with the test method described in Section 5.5.14.5.

5.5.14.7 The APCO may require additional conditions based on the condition of the materials to be burned.

5.6 Ditch Bank and Levee Maintenance

The following conditions are in addition to those requirements specified in Sections 5.1 through 5.4 for burning on-site grown vegetative material for right-of-way clearing, levee, and ditch bank maintenance by a public entity or utility:

5.6.1 Trash and debris must be removed prior to burning.

5.6.2 The material has been prepared by stacking, drying, or other methods to promote combustion as specified by the District.

5.7 Contraband Materials

The following conditions are in addition to those requirements specified in Sections 5.1 through 5.4 for the disposal of contraband materials by burning:

5.7.1 No contraband confiscated outside the District may be transported into the District for disposal by burning. Only contraband confiscated within the San Joaquin Valley Air Basin boundaries may be disposed of by burning.

5.7.2 Prior to the burn, a written notification of the planned burn must be submitted to the APCO pursuant to Section 6.2.2 of the rule.

5.7.3 Fires shall only be set or allowed by a peace officer or public fire official in the performance of official duty.

5.7.4 To the extent possible, materials must be burned in areas and in conditions limiting the possibility of smoke impacts on nearby neighbors and/or other smoke sensitive areas.

5.8 Russian Thistle (Salsola Kali) (tumbleweeds)

A District Permit is required for the burning of tumbleweeds. The Permit shall be issued in accordance with Sections 5.8.1, 5.8.2, and 6.1 and is only valid when the Permit applicant has received a burn authorization from the APCO that will allow burning on a particular day.

5.8.1 The burn site must be maintained in a fire safe condition according to the local fire protection agency.

5.8.2 The smoke and air contaminants shall not impact smoke sensitive areas, cause or contribute to a nuisance pursuant to Rule 4102 (Nuisance), or create or contribute to an exceedance of an ambient air quality standard. The APCO reserves the right to deny a Permit request if it might create a nuisance.

5.9 Diseased Materials

A conditional burning permit is required for fires set for the purpose of disease or pest prevention. A conditional burning permit shall authorize the burning of only the identified diseased crop, animal, fowl, pest or infected material.

5.9.1 A conditional burning permit will be issued by the APCO, if all of the following criteria are met:

5.9.1.1 The material to be burned is specifically described in the conditional burning permit.

5.9.1.2 The applicant has not been cited for a violation of burning rules or regulations in the past 3 years, unless the violation was of a de minimis nature, as determined by the APCO and the county agricultural commissioner, and

5.9.1.3 The county agricultural commissioner has determined all of the following:

5.9.1.3.1 There is no economically feasible alternative means of eliminating the disease or pest other than burning, and

5.9.1.3.2 There is the presence of a disease or pest that will cause a substantial, quantifiable reduction in yield or poses a threat to the health of adjacent vines, trees, or plants in the field proposed to be burned, during the current or next growing season, or there is the presence of a disease or pest that will cause a substantial, quantifiable reduction in production of animals or fowl.

5.9.2 The holder of a conditional burning permit may not transfer, sell or trade the burning permit to any other individual.

6.0 Administrative Requirements

6.1 Open Burn Permits

6.1.1 No person shall knowingly set or permit open burning unless the person has a valid Permit issued by the APCO and/or the designated agency having jurisdiction in the area where the open burning will take place.

6.1.2 A Permit applicant shall provide information as requested by the APCO and or designated agency. No Permit or authorization shall be deemed valid unless the applicant has provided the required information.

6.1.3 A Permit shall be valid only on the lands specified on the Permit.

6.1.4 No material shall be burned unless it is clearly described and quantified as material to be burned on a valid Permit.

6.1.5 Applications to burn orchard or vineyard removal waste must be reviewed and shall not be granted if the materials were generated in the process of land use conversion to nonagricultural purposes.

6.1.6 No burning shall be conducted pursuant to such a Permit without prior authorization for burning on a specified day from the District.

6.1.7 No burning shall be conducted contrary to the conditions specified on the Permit.

6.1.8 Except for burning conducted pursuant to Section 4.3, a permit shall only be valid on those days not designated as no-burn days and the APCO has authorized the burning as being within a particular day's burn system allocation for the region in which burn site is located.

6.1.9 Any Permit issued by a designated agency shall be subject to the rules and regulations of the District.

6.2 Burn Plans for Fire

6.2.1 Fire Suppression Training

The lead fire agency planning to conduct fire suppression training must submit a burn plan to the APCO for approval a minimum of 15 days prior to the date of the proposed burn. A burn plan is not required for training conducted at stationary fire training structures located at fire training facilities when used for the primary purpose of conducting fire training. The burn plan shall address the following:

6.2.1.1 The location of the fire training.

6.2.1.2 The fire agencies involved with the training, the number of personnel participating with the training, the name(s) and title(s) of personnel who are responsible for the training, and the approximate date the training will occur, including expected burn starting and ending times.

6.2.1.3 If a structure is involved with the fire training, the burn plan shall include an assessment for the presence and removal of asbestos containing materials within the structure(s), subject to the requirements of Rule 4002 and the National Emission Standards for Hazardous Air Pollutants (Subpart M, Part 61, Chapter 1, Title 40, Code of Federal Regulations).

6.2.1.4 Proposed contingencies to prevent a nuisance, per Rule 4102 (Nuisance).

6.2.2 Contraband

Pursuant to the requirements of Section 5.7, a written notification from the law enforcement agency or fire agency conducting the burn shall be submitted to the APCO for approval a minimum of 15 days prior to the planned burn. In special circumstances, the APCO may waive the 15-day notice requirement. The notification shall provide the following information:

6.2.2.1 A description of the contraband, including its origin and the amount of material that will be destroyed by fire.

6.2.2.2 The date and location of the burn.

6.2.2.3 A description of alternative disposal methods other than burning and an explanation of why the contraband must be destroyed by the use of fire.

6.2.2.4 The law enforcement agency and/or fire protection agency involved with the burn.

6.3 The APCO shall prepare the "Staff Report and Recommendations on Agricultural Burning" document (Report) for any Board determination made pursuant to Section 5.5.2 and in accordance with the following:

6.3.1 The Report shall be presented to the Board for review and approval. Board-approved Report shall be submitted to ARB and EPA for inclusion into the State Implementation Plan.

6.3.2 The APCO shall review and update, as appropriate, the Report at least once every five (5) years. Updated Reports shall be approved according to Section 6.3.1.

ATTACHMENT 1 BEST MANAGEMENT PRACTICES FOR THE CONTROL OF OTHER WEEDS AND MAINTENANCE
Star Thistle, Dodder Weeds, Tumbleweeds, Noxious Weeds and Other Weeds Affecting Surface Waterways
1. Use a planting-to-moisture technique that destroys weeds by cultivation then allow the soil to partially dry and plant large seeded crops in the moist soil below the dried soil zone.
2. Use of a buried drip irrigation system to minimize moisture that is available to weed seeds germinating at the surface level.
3. Reduce the amount of weeds that produce seed by performing regular weed control during the growing and off-season.
4. Use corn gluten as a pre-emergence material to suppress weeds as they germinate.
5. Apply conventional chemical herbicides or non-conventional herbicides such as Citric Acid, Vinegar, or Sodium Nitrate.
6. The use of an anaerobic manure digester to reduce weed seeds in composted materials.
7. Apply hot foam to kill weeds with the heat released from the foam, and allow the foam to dissipate after it has been applied.
8. Select crops that out-compete weeds for moisture and soil nutrients.
9. Apply mulching material around crops to block sunlight, which prevents weed germination and growth.
10. Use of animals or fowls to eat weeds. This technique is most effective in range or non-crop areas.
11. Soil solarization covering utilizes plastic sheeting placed on beds during the summer to trap solar energy generating heat that destroys the emerging weeds.
12. Apply a flame to wilt (desiccate) and or remove the desiccated vegetation (sanitation). The application of the flame is limited such that removal of the flame does not result in continued ignition of the vegetation.
13. Mechanically remove weeds by disking and tilling. The mechanical removal up-roots or buries the weeds.
14. Open burning in accordance with the requirements of Rule 4103 (Open Burning)
Other Maintenance (Pesticide Sacks, Fertilizers Sacks)
15. Dispose of the pesticide/fertilizer sacks into a landfill.
16. Purchase pesticide/fertilizer sold in returnable, refillable bulk bags.
17. Open burning in accordance with the requirements of Rule 4103 (Open Burning)

RULE 4104 REDUCTION OF ANIMAL MATTER (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to limit air contaminants from source operations used for the reduction of animal matter.

2.0 Applicability

This rule shall apply to any source operation used for the reduction of animal matter.

3.0 Definitions

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

3.1 Reduction: any heated process, including rendering, cooking, drying, dehydration, digesting, evaporating and protein concentrating.

4.0 Exemptions

4.1 The provisions of this rule shall not apply to any article, machine, equipment or other contrivance used exclusively for the processing of food for human consumption.

5.0 Requirements

5.1 A person shall not operate or use any article, machine, equipment or other contrivance for the reduction of animal matter unless all gases, vapors and gas-entrained effluent from such an article, machine, equipment or other contrivance are:

5.1.1 Incinerated at temperatures of not less than 1200°F for a period of not less than 0.3 seconds; or

5.1.2 Processed in such a manner determined by the APCO to be equally or more effective for the purpose of air pollution control than Section 5.1.1 above.

5.2 A person incinerating or processing gases, vapors or gas-entrained effluent pursuant to this rule shall provide, properly install, and maintain in calibration, in good working order, and in operation, devices as specified in the Authority to Construct or Permit to Operate or as specified by the APCO, for indicating temperature, pressure, or other operating conditions.

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RULE 4106 PRESCRIBED BURNING AND HAZARD REDUCTION BURNING (Adopted June 21, 2001)

1.0 Purpose

The purpose of this rule is to permit, regulate, and coordinate the use of prescribed burning and hazard reduction burning while minimizing smoke impacts on the public.

2.0 Applicability

The provisions of this rule shall apply to all prescribed burning, and to hazard reduction burning in wildland/urban interface.

3.0 Definitions

Unless defined below, terms used in this rule are defined in Rule 4103 (Open Burning) and Rule 1020 (Definitions).

3.1 Burn plan: an operational plan for managing a specific burn to achieve resource benefits and specific management objectives. The plan includes, at a minimum, the project objective, contingency responses for when a fire is out of prescription with a smoke management plan, fire prescription including smoke management components, personnel, organization, and equipment.

3.2 Burn project: an active or planned prescribed burn or a naturally ignited wildland fire managed for resource benefits.

3.3 Class I Area: a mandatory visibility area designated pursuant to Section 169A of the Federal Clean Air Act.

3.4 Designated agency: any agency designated by the ARB as having authority to issue agricultural burning (including prescribed burning) permits.

3.5 Duff: forest floor material consisting of decomposing needles, leaves, twigs, bark and other natural materials.

3.6 Forest management burning: the use of prescribed fire, as part of a forest management practice, to remove forest debris. Forest management practices include timber operations, silvicultural practices, or forest protection practices.

3.7 Hazard reduction burning: the burning of flammable vegetation that has been removed and cleared away from buildings or structures in compliance with local ordinances to reduce fire hazard pursuant to Section 4291 of the California Public Resources Code for the purpose of maintaining a firebreak of up to 100 feet from such buildings or structures.

3.8 Land Manager: any federal, state, local or private entity that administers, directs, oversees or controls the use of public or private land, including the application of fire to the land.

3.9 Naturally ignited fire: Fires ignited by natural causes, such as lightning, and not by any anthropogenic actions.

3.10 Permit: as used herein refers to District Hazard Reduction Permit. In addition to air pollution permits, burn permits may be required by a Fire Protection Agency having jurisdiction.

3.11 Planned resource management objectives: include forest management, wildlife habitat management, range improvement, fire hazard reduction, wilderness management, weed abatement, watershed rehabilitation, vegetation manipulation, disease and pest prevention, and ecosystem management.

3.12 Prescribed burning: the planned application of fire, including natural or accidental ignition, to vegetation on lands selected in advance of such application to meet specific planned resource managment objectives as set forth in section 3.11.

3.13 Range improvement burning: the use of prescribed burning to remove vegetation for a wildlife, game, or livestock habitat, or for the initial establishment of an agricultural practice on previously uncultivated land.

3.14 Silviculture: the establishment, development, care, and reproduction of stands of timber.

3.15 Smoke management plan: a document prepared for each prescribed burn by land managers or fire managers that provides the information and procedures required in section 5.2. of Rule 4106.

3.16 Timber operations: the cutting or removal of timber or other forest vegetation for the purpose of producing commercial forest products.

3.17 Wildfire: any non-structure fire, other than a prescribed burn, that is unwanted and unplanned and occurs in the wildland.

3.18 Wildland:

3.18.1 An area where development is generally limited to roads, railroads, power lines, and widely scattered structures. Such land is not cultivated; (i.e., the soil is disturbed less frequently than once in 10 years), is not fallow, and is not in the USDA Conservation Reserve Program. The land may be neglected altogether or managed for such purposes as wood

or forage production, wildlife, recreation, wetlands, or protective plant cover.

3.18.2 For California Department of Forestry and Fire Protection, "Wildland" from PRC 4464(a) means any land that is classified as a state responsibility area pursuant to Article 3 (commencing with Section 4125) of Chapter 1 of this part and includes any such land having a plant cover consisting principally of grasses, forbs, or shrubs that are valuable for forage. "Wildland" also means any lands that are contiguous to lands classified as a state responsibility area if wildland fuel accumulation is such that a wildland fire occurring on these lands would pose a threat to the adjacent state responsibility area.

3.19 Wildland/urban interface: the line, area or zone where structures and other human development meet or intermingle with the wildland.

4.0 Requirements

4.1 Except as otherwise provided in this rule and/or Rule 4103, no person shall set, permit, or use an open outdoor fire for the purpose of disposal or burning of lawn clippings or other garden wastes, ornamental shrubbery, household wastes, petroleum wastes; demolition or construction debris; residential rubbish; garbage or vegetation; tires; tar; trees; woodwaste; or other combustible or flammable solid, liquid or gaseous waste; or for metal salvage or burning of motor vehicle bodies.

4.2 The District shall allocate burning based on the predicted meteorological conditions and whether the total tonnage to be emitted would allow the volume of smoke and other contaminants to impact smoke sensitive areas, or create or contribute to an exceedance of an ambient air quality standard.

4.3 No burning shall be permitted which will create a nuisance as defined in section 41700 of the California Health and Safety Code.

4.4 All burning authorized pursuant to this rule shall be subject to any requirements, restrictions or prohibitions of the fire protection agency having jurisdiction over the burn site.

4.5 The vegetation shall be in a condition that will facilitate combustion and minimize the amount of smoke emitted during combustion.

4.6 Vegetation to be burned shall be ignited only with an APCO approved ignition device.

4.7 Vegetation shall not be burned unless it is free of excessive dirt, soil, and moisture.

4.8 Vegetation shall not be burned unless it is arranged or loosely stacked in such a manner as to promote drying and insure combustion with a minimum of smoke production.

4.9 Prescribed Burning

In addition to the requirements set forth in sections 4.1-4.8**,** the following requirements apply to prescribed burning:

4.9.1 A person who sets, permits, or otherwise conducts a prescribed fire is responsible for conducting a prescribed burn shall, prior to the burn, have taken and completed a prescribed-burning smoke management training class approved by the APCO. Persons responsible for projects less than 10 acres in size or projected to produce less than 1 ton of particulate matter shall be exempt from this requirement.

4.9.2 For a multi-day burn which may impact smoke sensitive areas, a land manager or his or her designee shall coordinate daily with the District or the ARB to affirm that the burn project remains within the conditions specified in the smoke management plan, or whether contingency plans must be implemented.

4.9.3 Wastes shall be windrowed or piled where possible, unless good silvicultural practice dictates otherwise.

4.9.4 The burn shall be ignited as rapidly as practicable within applicable fire control restrictions.

4.9.5 Prescribed smoke and fire conditions contained in the smoke management plan shall be met before any ignition of the burn. Ignition of a prescribed burn shall not occur on a no-burn day.

4.9.6 Unless good management practices dictate otherwise, no brush or unwanted trees shall be burned unless they have been felled, crushed, or uprooted with mechanical equipment, have been desiccated with herbicides, or are dead for a minimum of six (6) weeks prior to the burn.

5.0 Administrative Requirements

5.1 Permits for Hazard Reduction Burning

In addition to the requirements set forth in sections 4.1-4.8, the following requirements apply to hazard reduction burning:

5.1.1 No person shall knowingly set or permit hazard reduction burning unless s/he has a valid Permit by the APCO or his designee.

5.1.2 Each applicant for a Permit shall provide information requested by the APCO.

5.1.3 No vegetation shall be burned unless it is described on a valid Permit.

5.1.4 A Permit shall be valid only on those days during which burning is not prohibited by the ARB, by the District or by the designated agency having jurisdiction over the site of the proposed burning pursuant to section 41855 of the California Health and Safety Code and the District has authorized the burning as being within the day's burn system allocation for the region in which the burn site is located.

5.2 Smoke Management Plans for Prescribed Burning

5.2.1 Persons responsible for projects less than 10 acres in size or projected to produce less than 1 ton of particulate matter must submit smoke management plans to the District for review and approval. At a minimum, a smoke management plan must contain the following information and/or any additional information that may be required by the District:

5.2.1.1 a legal description of the burn, including maps.

5.2.1.2 a description of the type of fuels and the amount of fuels in tons or acres.

5.2.1.3 the identity and mailing address of the responsible personnel, including telephone numbers for 24-hour contact.

5.2.2 Persons responsible for projects greater than 10 acres in size or projected to produce more than 1 ton of particulate matter must submit smoke management plans to the District for review and approval. At a minimum, a smoke management plan must contain the information required in section 5.2.1 and the following and/or any additional information that may be required by the District:

5.2.2.1 the distance and compass headings of smoke sensitive areas within five (5) miles including but not limited to schools, day care centers, hospitals, medical clinics, populated areas, highways.

5.2.2.2 a description of the wind speed and direction necessary for burning.

5.2.2.3 a description of the anticipated duration of project's smoke production from ignition to burn down.

5.2.3 Persons responsible for projects greater than 100 acres in size, or that are projected to produce more than 10 tons of particulate matter, or that will continue overnight, or that will be conducted near smoke sensitive areas, must submit smoke management plans to the District for review and approval. At a minimum, the smoke management plan must contain the information required in sections 5.2.1 and 5.2.2 and the following and/or any additional information that may be required by the District:

5.2.3.1 a description of the meteorological conditions the land manager or his/her designee will use for making burn ignition decisions to limit smoke impacts to smoke sensitive areas.

5.2.3.2 a description of the smoke management criteria the land manager or his/her designee will use for making burn ignition decisions.

5.2.3.3 a description of the per acre fuel loading, including the fuel type, existing fuel loading in tons per acre, and anticipated fuel consumption. Describe the fuel expected to be consumed such as duff, fines, 1-, 10-, 100-, and/or 1000-hour fuels, live fuels, etc.

5.2.3.4 identification of potential impacts to smoke sensitive areas as determined by mapping the daytime and nighttime smoke paths, including upslope and downslope and/or diurnal drainage flow, for a distance of twenty-five miles from the burn site.

5.2.3.5 identification of the population located in the potential smoke sensitive areas.

5.2.3.6 a description of the Best Available Control Measures which were considered and the values or criteria that were used to determine the feasibilty of these alternatives.

5.2.3.7 a description of how the public will be informed of the possible effects of smoke and the duration of the effects. Include copies of public information planned for release.

5.2.3.8 a description of the type and frequency of the surveillance and/or monitoring that will be conducted to determine any smoke impacts to smoke sensitive areas.

5.2.3.9 a description of the specific smoke contingency actions that will be taken in the event smoke impacts occur in smoke sensitive areas or meteorological conditions deviate from those specified in the smoke management plan.

5.2.3.10 a description of what post-burn Best Available Control Measures will be implemented to limit the duration of smoke impacts to smoke sensitive areas.

5.2.3.11 an evaluation of alternatives to burning to be considered. Projects that have met applicable National Environmental Policy Act (NEPA) and/or California Environmental Quality Act (CEQA) requirements will be considered to have complied with this provision. The smoke management plan shall reference the NEPA or CEQA document by title and if such document is not available in the District, shall provide a copy of the relevant section(s).

5.2.4 Smoke management plans for burn projects greater than 250 acres in size or projected to produce more than 25 tons of particulate matter, or as determined by the District, shall include the following information in addition to the information required in sections 5.2.1, 5.2.2 and 5.2.3:

5.2.4.1 monitoring shall be required. Monitoring may be visual monitoring, ambient particulate monitoring or other monitoring approved by the District. The type of monitoring required for a specific burn project shall be determined in consultation with the District and a description of the monitoring shall be included in the smoke management plan for that project.

5.2.4.2 the requirements of Section 5.2.3.4 shall be met, provided that potential impacts to smoke sensitive areas for a distance of more than twenty-five miles from the burn site shall be identified if the potential for smoke impacts appears to exist.

5.2.4.3 a description of the surveillance and air monitoring methods.

5.2.4.4 a description of the smoke complaint handling procedures.

5.2.4.5 a description of the decision making process that will be used in implementing smoke mitigations procedures.

5.2.4.6 a description of the responsive impact mitigations up to and including a declaration of a wildfire and aggressive fire suppression.

5.2.4.7 a post-burn smoke management evaluation.

5.2.5 If smoke may impact smoke sensitive areas, smoke management plans must include appropriate monitoring, as determined in consultation with the District, for the following burn projects:

5.2.5.1 projects greater than 250 acres;

5.2.5.2 projects that will continue burning or producing smoke overnight;

5.2.5.3 projects near smoke senstive areas; or

5.2.5.4 as otherwise required by the District.

5.3 Naturally ignited fires

5.3.1 When a natural ignition occurs on a no-burn day, the initial "go/no-go" decision to manage the fire for resource benefit will be a "no-go" unless:

5.3.1.1 after consultation with the District, the District decides, for smoke management purposes, that the burn can be managed for resource benefit; or

5.3.1.2 for periods of less than 24 hours, a reasonable effort has been made to contact the District, or if the District is not available, the ARB;

5.3.1.3 after 24 hours, the District has been contacted, or if the District is not available, the ARB has been contacted and concurs that the burn can be managed for resource benefits.

5.3.2 A "no-go" decision does not necessarily mean that the fire must be extinguished, but that the fire cannot be considered as a prescribed burn.

5.3.3 Smoke management plans shall be submitted to the District within 72 hours of the start of any naturally ignited wildland fires managed for resource benefits.

5.4 Department of Fish and Game Certification

If prescribed burning is to be done primarily for improvement of land for wildlife and game habitat, no Permit shall be issued unless the applicant has filed with the District a statement from the Department of Fish and Game certifying that the burn is desirable and proper. The Department of Fish and Game may specify the amount of brush treatment required along with any other conditions it deems appropriate.

5.5 Section 41852 of the California Health and Safety Code Permit

An APCO approved smoke management plan shall serve as a Permit for the purposes of section 41852 of the California Health and Safety Code and section 5.4 of this rule.

5.6 Registration of Prescribed Burning Projects

5.6.1 A burn applicant or agency shall register all planned prescribed burn projects greater than 10 acres or projected to emit more than 1 ton of particulate matter with the APCO annually or seasonally, including areas being considered for potential naturally ignited wildland fires managed for resource benefits, with updates as they occur.

5.6.1 The registration for prescribed burns shall include a description of the project burn location, number of acres to be burned, the amount and type of fuels expected to be consumed by each burn project and who will conduct the burn.

5.6.2 The registration for naturally ignited fires shall include the following:

5.6.2.1 the criteria that will be used to determine when a naturally ignited wildland fire will be allowed to be a prescribed burn shall be identified.

5.6.2.2 potential control lines for the burn project, such as rivers and creeks, rock outcroppings, non-vegetated areas, and roads.

5.7 Smoke Management Plan Review and Approval

5.7.1 An applicant agency or individual shall submit burn plans which include a smoke management plan to the District for review and approval at least

thirty (30) days in advance of the proposed burning, except as provided for in Section 5.3.3.

5.7.2 The burn plan shall be reviewed for the application of Best Available Control Methodology and the potential of adverse air quality impacts on populated or sensitive areas.

5.7.3 The District shall approve or disapprove a smoke management plan and/or provide comments on the plan that may require revisions in order to minimize smoke impacts.

5.7.4 If written comments are not transmitted by the District to the submitting agency or individual within 30 days of receipt of the burn plan, the smoke management plan shall be deemed adequate and approved as submitted.

5.7.5 A District approval of a smoke management plan shall not constitute an approval of the burning, nor shall it serve to excuse the agency or individual from complying with law, nor shall it excuse any violation.

11/18/93

RULE 4201 PARTICULATE MATTER CONCENTRATION (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to protect the ambient air quality by establishing a particulate matter emission standard.

2.0 Applicability

This rule shall apply to any source operation which emits or may emit dust, fumes, or total suspended particulate matter.

3.0 Requirements

3.1 A person shall not release or discharge into the atmosphere from any single source operation, dust, fumes, or total suspended particulate matter emission in excess of 0.1 grain per cubic foot of gas at dry standard conditions, as determined by the test methods in section 4.0.

4.0 Test Methods

The following test methods shall be used to determine compliance with the requirements of section 3.0:

4.1 Particulate matter concentration - EPA Method 5;

4.2 Stack gas velocity - EPA Method 2;

4.3 Stack gas moisture - EPA Method 4.

9/28/94

RULE 4202 PARTICULATE MATTER - EMISSION RATE (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to limit particulate matter emissions by establishing allowable emission rates. The calculation methods for determining the emission rate based on process weight are specified.

2.0 Applicability

This rule shall apply to any source operation which emits or may emit particulate matter emissions.

3.0 Definitions

3.1 Process Weight: the total weight of all materials introduced into any specific process, which process may cause any discharge into the atmosphere. Solid fuels charged shall be considered as part of the process weight, but liquid and gaseous fuels and combustion air shall not.

3.2 Process Weight Rate: derived by dividing the total process weight by the number of hours in one (1) complete operation from the beginning of any given process to the completion thereof, excluding any time during which the equipment is idle.

4.0 Requirements

4.1 A person shall not discharge into the atmosphere from any source operation, particulate matter in excess of that allowed by the following process weight tables.

ALLOWABLE EMISSION RATE BASED ON PROCESS WEIGHT RATE

Process Weight Rate		Maximum Allowable Emission Rate Lbs/Hr
Lbs/Hr	Tons/Hr	
50	0.025	0.36
100	0.05	0.55
500	0.25	1.52
1,000	0.50	2.25
5,000	2.5	6.34
10,000	5.0	9.73
20,000	10.0	14.97
60,000	30.0	29.57
80,000	40.0	31.19
120,000	60.0	33.28
160,000	80.0	34.85
200,000	100.0	36.11
400,000	200.0	40.35
1,000,000	500.0	46.72

Interpolation of the data for the process weight rates up to 60,000 lbs/hr shall be accomplished by the use of the equation:

$E = 3.59\ P^{0.62}$ P less than or equal to 30 tons/hr

and interpolation and extrapolation of the data for process weight rates in excess of 60,000 lbs/hr shall be accomplished by use of the equation:

$E = 17.31\ P^{0.16}$ P greater than 30 tons/hrs

Where: E = Emission in Pounds per hour.
P = Process weight rate in tons per hour.

RULE 4204 COTTON GINS (Adopted February 17, 2005)

1.0 Purpose

The purpose of this rule is to limit PM10 emissions from cotton ginning facilities and to provide the administrative requirements for monitoring, recordkeeping, and source testing for these facilities.

2.0 Applicability

The provisions of this rule shall apply to all cotton ginning facilities within the District.

3.0 Definitions

3.1 1D3D Cyclone: a type of cyclone which has the dimensions shown in Figure 1.

3.2 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.3 Bale: a unit of measurement to denote an amount of lint cotton with a nominal weight of 500 pounds.

3.4 Battery Condenser: a separator serving the lint cleaner battery.

3.5 Best Available Control Technology: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.6 Cotton: a general term used to refer to the cotton plant (genus *Gossypium*) and also refers to white lint fibers separated from the seed.

3.7 Cotton Ginning Facility: a facility whose primary function is to separate lint cotton from the cottonseed.

3.8 Flexible Shroud: a flexible material that reduces dispersion of dust.

3.9 Ginstand/Feeder Trash: the trash coming from the extractor feeder and ginstand.

3.10 Lint Cleaning: the process after the separation of seed and lint that further removes leaf particles, motes, grass, and bark, which remain in cotton after seed cotton cleaning, extracting, and ginning.

3.11 Lint Cotton: the term used to denote cotton fibers from which the ginning process has removed the trash and seeds.

3.12 Lint Trash: the trash material coming from lint.

3.13 Motes: a small group of short fibers often attached to a portion of the seed or to an immature seed.

3.14 Motes Cleaner Trash: the trash coming from the motes cleaner and conveyed by an air stream.

3.15 Overflow: a device that receives excess cotton, which exceeds the limit of the extractor/feeders fed by the distributor, and which pneumatically returns the excess cotton back to the distributor.

3.16 Owner/Operator: any person who is responsible for the operation of the cotton ginning facility, including, but not limited to, any person who owns, leases, supervises, or operates the equipment.

3.17 PM10: as defined in Rule 1020 (Definitions).

3.18 Precleaning: the process or processes, after unloading the cotton and before passing through the gin stand, designed primarily to remove dirt and small pieces of leaves, bracts, and other vegetative matter from seed cotton. It can include cylinder cleaners, dryers, and extractor machinery, such as bur machines, stick machines, and extractor-feeders.

3.19 Robber Systems: a secondary cyclone trash system, which comes after the master trash system.

3.20 Trash Stockpiler: the process stream that carries the trash from the ginning operation for delivery to the facility's trash pile.

3.21 Unloading: the system that removes unprocessed cotton from trailers or modules.

4.0 Exemptions

4.1 Cotton ginning facilities used for research purposes and limited to throughputs of not more than 4,000 pounds of seed cotton processed per day shall be exempt from the requirements of Section 5.0. Records shall be kept as indicated in Section 6.1.

5.0 Requirements

The owner/operator shall not operate a cotton ginning facility unless it meets the following requirements:

5.1 All emission points shall be controlled by 1D3D cyclones or rotary drum filters, according to the compliance schedule in Section 7.0.

5.2 The inlet air velocity to the 1D3D cyclone shall be designed and maintained at an operational range of 2,800 to 3,600 feet per minute.

5.3 New cyclones or replacement parts of existing 1D3D cyclones shall have the dimensional characteristics of the Enhanced 1D3D cyclone shown in Figure 1 or the 1D3D with a 2D2D inlet and an expansion chamber trash outlet, as shown in Figure 2.

5.4 Notwithstanding Sections 5.1 and 5.3, an operator may operate an alternative control device in lieu of an Enhanced 1D3D cyclone or rotary drum filter, provided the control device is found by the District to be equivalent to Best Available Control Technology standards at the time of the analysis of the control and is approved by the APCO and the United States Environmental Protection Agency (EPA).

5.5 Operators may install a device, such as a pre-collector or plenum, before cyclones, provided the device undergoes engineering evaluation of its operating parameters conducted and approved by the APCO prior to its operation.

5.6 Effective on and after July 1, 2005, an owner/operator using a drive-under or pull-through trash collection system for load-out purposes shall not load trash into a hopper or trailer unless one or more of the following are utilized:

5.6.1 The trash loading area has an enclosure with four sides that are higher than the trash auger; at least two sides shall be solid and the remaining sides shall:

5.6.1.1 Have a flexible wind barrier, which extends below the top of the trash trailer sides, or

5.6.1.2 Have solid doors that remain shut while trash trailers are being loaded, except as necessary to accommodate trailer movement, or

5.6.1.3 Have a combination of flexible wind barriers as specified in Section 5.6.1.1 and solid doors as specified in Section 5.6.1.2.

5.6.2 A solid-sided trailer is used when there is no enclosure, and the trash auger and opening of the loading device have a flexible shroud that extends just below the top of the trailer's solid sides, or

5.6.3 Fugitive PM10 emissions from load-out areas are reduced by an alternative method, which is approved by the APCO and the EPA.

5.7 Effective on and after July 1, 2005, an owner/operator shall not operate a trash conveyance system dumping directly into a pile unless it meets the following requirements:

5.7.1 Both sides of the trash auger shall be equipped with wind barriers that extend, as measured vertically prior to trash pile build-up, one foot above and three feet below the auger or with an alternative control approved by the APCO and the EPA.

5.7.2 After the pile has built up to the height of the trash auger, removing material from the pile shall be performed in such a way as to prevent free-falling trash from the stockpiling system.

5.7.3 Notwithstanding Section 5.7.2, if the trash stockpile is removed for the purpose of preventing the build-up of heat in the pile, the operator shall record the date of the removal and such records shall be made available to the APCO upon request.

6.0 Administrative Requirements

6.1 Monitoring and Recordkeeping

6.1.1 The owner/operator shall perform the following:

6.1.1.1 Conduct daily visual inspections of the material handling systems for leaks, breaks, or other visible signs of equipment malfunctions.

6.1.1.2 Maintain a record of the daily inspections, including any equipment malfunctions discovered and corrective action taken to repair the malfunction, and any source test results as required by the rule.

6.1.1.3 When claiming an exemption under Section 4.0, record the total hours during which a ginning operation was conducted and the total throughput weight of unprocessed seed cotton or total weight of lint cotton produced.

6.1.2 Records shall be retained by the owner/operator for five years and shall be made available to the APCO upon request.

6.2 Source Testing

6.2.1 Operators shall conduct source testing to demonstrate compliance with Section 5.2 when adding new or modifying existing control equipment, performed for the purpose of complying with this rule.

6.2.2 The following test methods or alternative test methods approved by the APCO and EPA shall be used:

6.2.2.1 Selection of sampling ports and traverses- EPA Method 1.

6.2.2.2 Stack gas velocity and volumetric flow rate- EPA Method 2.

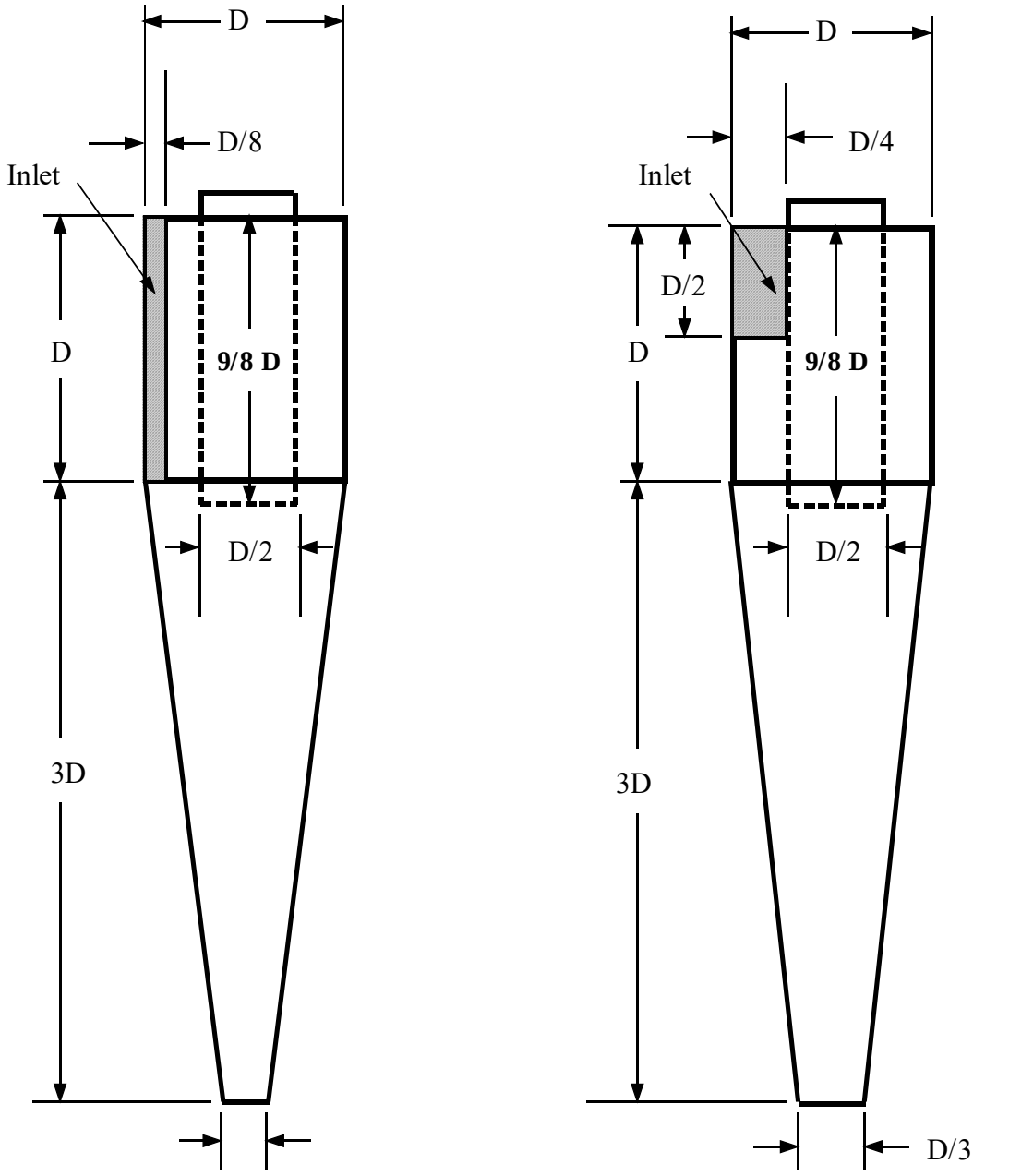
6.2.2.3 PM10 emissions- EPA Method 201A or CARB Method 501.

7.0 Compliance Schedule

Owners/operators shall demonstrate and maintain compliance with the control requirements on and after the first day of operation after the indicated compliance dates.

Table 2
Compliance Schedule

Control Requirement	Compliance Dates
Install 1D3D cyclones on all unloading, #1 precleaning, #2 precleaning, and #3 precleaning emission points.	July 1, 2006
Install 1D3D cyclones on all overflow, gin stand/feeder trash, motes, motes cleaner trash, and trash stockpiler emission points.	July 1, 2007
Install 1D3D cyclones on all #1 and #2 lint cleaning, lint trash, robber systems, and battery condenser emission points.	July 1, 2008



Standard 1D3D Cyclone **Enhanced 1D3D Cyclone**

Figure 1, 1D3D Cyclone Dimensions

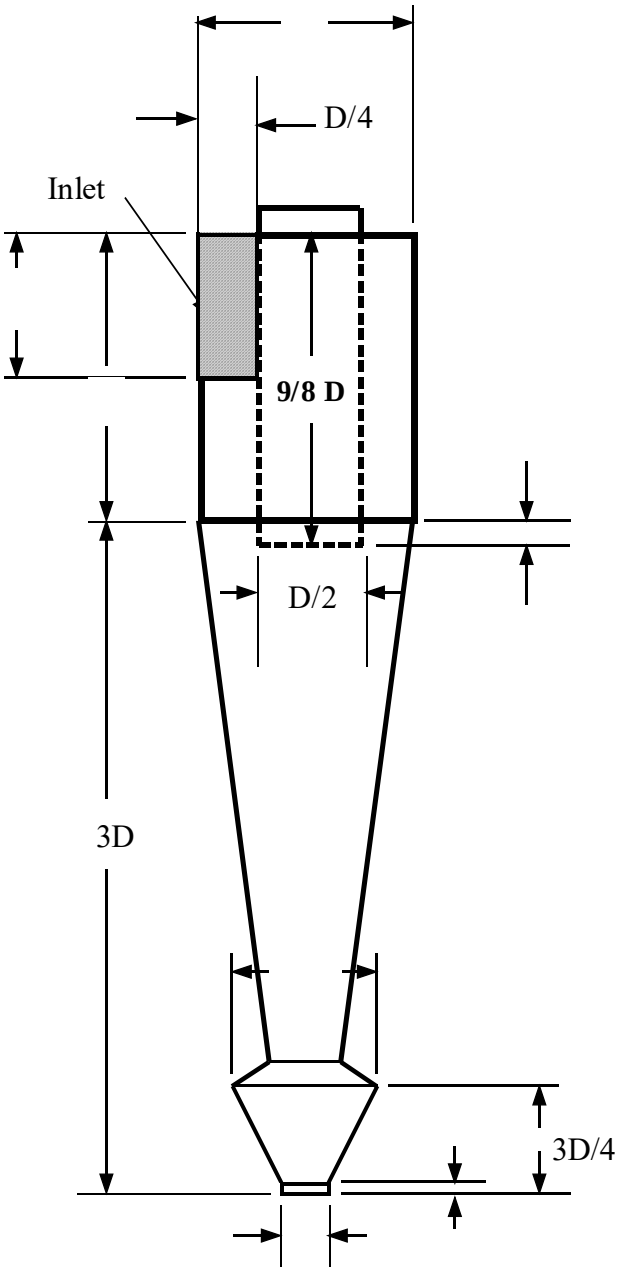


Figure 2, 1D3D Cyclone with Expansion Chamber

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9-2894

RULE 4301 FUEL BURNING EQUIPMENT (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to limit the emission of air contaminants from fuel burning equipment. This rule limits the concentration of combustion contaminants and specifies maximum emission rates for sulfur dioxide, nitrogen oxide and combustion contaminant emissions.

2.0 Applicability

The provisions of this rule shall apply to any fuel burning equipment except air pollution control equipment which is exempted according to Section 3.0

3.0 Definitions

3.1 Fuel Burning Equipment: any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer.

3.2 Fuel Burning Unit: the minimum number of fuel burning equipment, the simultaneous operations of which are required for the production of useful heat or power.

4.0 Exemptions

4.1 Fuel burning equipment serving primarily as air pollution control equipment by using a combustion process to destroy air contaminants shall be exempt from the provisions of this rule.

5.0 Requirements

5.1 A person shall not discharge into the atmosphere combustion contaminants exceeding in concentration at the point of discharge, 0.1 grain per cubic foot of gas calculated to 12% of carbon dioxide at dry standard conditions.

5.2 A person shall not build, erect, install or expand any non-mobile fuel burning equipment unit unless the discharge into the atmosphere of contaminants will not and does not exceed any one (1) or more of the following rates:

5.2.1 200 pounds per hour of sulfur compounds, calculated as sulfur dioxide (SO_2);

5.2.2 140 pounds per hour of nitrogen oxides, calculated as nitrogen dioxide (NO_2);

5.2.3 Ten (10) pounds per hour of combustion contaminants as defined in Rule 1020 (Definitions) and derived from the fuel.

5.3 Nothing in this rule shall be construed as preventing the maintenance or preventing the alteration or modification of an existing fuel burning equipment unit which will reduce its mass rate of air contaminant emissions.

6.0 Test Methods

The following test methods shall be used to determine compliance with the requirements of section 5.0:

5.1 Particulate matter concentration - EPA Method 5;

5.2 Carbon dioxide concentration - ARB Method 100;

5.3 Oxides of nitrogen concentration - ARB Method 100;

5.4 Sulfur compounds concentration - EPA Method 8 or ARB Method 8;

5.5 Stack gas velocity - EPA Method 2;

5.6 Stack gas moisture - EPA Method 4.

5/24/94

RULE 4302 INCINERATOR BURNING (Adopted May 21, 1992; Amended December 17, 1992; Amended December 16, 1993)

1.0 Purpose

This rule limits air pollution by prohibiting the use of any incinerator except for a multiple-chamber incinerator or one equally effective in controlling air pollution.

2.0 Applicability

This rule shall apply to any incineration activity or equipment.

3.0 Requirements

A person shall not burn in any incinerator within the District except in a multiple-chamber incinerator as defined in Rule 1020 (Definitions), or in equipment found by the APCO to be equally effective for the purpose of air pollution control as an approved multiple-chamber incinerator. The incineration of residential rubbish as permitted in Rule 4103 (Open Burning) shall be conducted in accordance with the Uniform Fire Code.

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5/24/94

RULE 4303 ORCHARD HEATERS (Adopted May 21, 1992; Amended December 17, 1992; Amended December 16, 1993)

1.0 Purpose

The purpose of this rule is to limit the emissions of air contaminants from the use of orchard heaters.

2.0 Applicability

This rule shall apply to orchard heaters used for the protection of crops against frost.

3.0 Definition

3.1 Orchard Heater: any article, machine, equipment, or other contrivance burning any type of fuel or charcoal briquettes, or similar substances burned by an open flame, capable of being used for the purpose of giving protection from frost damage. For the purpose of this section, "orchard heater" shall include heaters used for frost protection for orchards, vineyards, field crops, and truck crops. The contrivance commonly known as a wind machine is not included.

4.0 Requirements

4.1 No new orchard heater produced or manufactured shall be sold for use against frost damage after January 1, 1971, unless it has been approved by the ARB.

4.2 No person shall use any orchard heater after January 1, 1973, unless it has been approved by the ARB or does not produce more than one (1) gram per minute of unconsumed solid carbonaceous material, as determined by the ARB test method entitled, "Recommended Procedure for Determining Emissions from Orchard Heaters," January 1971.

4.3 It shall be unlawful to sell, or offer to sell for frost protection any orchard heater which does not comply with section 4.2.

4.4 All orchard heaters in use shall be maintained in reasonably clean condition, good repair and working order. Whenever orchard heaters are burning, they must be adequately attended and supervised to maintain the condition, adjustment and proper operation of the orchard heaters.

4.5 It shall be unlawful for any person, for the purpose of frost protection, to burn any rubber, rubber tires, or other substance containing rubber, or to burn oil or other combustible substances in drums, pails, or other containers except orchard heaters.

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3/26/96

RULE 4304 EQUIPMENT TUNING PROCEDURE FOR BOILERS, STEAM GENERATORS, AND PROCESS HEATERS

1.0 Purpose

The purpose of this rule is to provide an equipment tuning procedure for boilers, steam generators and process heaters to control visible emissions and emissions of both nitrogen oxides (NOx) and carbon monoxide (CO).

2.0 Applicability

This procedure applies to any boiler, steam generator, or process heater that requires tuning pursuant to District regulations or permit conditions.

3.0 Incorporation by Reference

The provisions of Attachment 4304-A and Attachment 4304-B are hereby adopted by reference and made a part hereof.

Attachment 4304-A
Equipment Tuning Procedure[1]
for Mechanical Draft Boilers, Steam Generators, and Process Heaters

Nothing in this 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.

A different tuning procedure may be used if it produces equivalent results. 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 no 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 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.

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1 This tuning procedure is based on a tune-up procedure developed by KVB, Inc. for 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 is included in a tune-up 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.

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 levels.

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 mix, thereby allowing operations with less air.

8. Add 0.5 to 2.0 percent 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, setting should optimize conditions at the 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.

Attachment 4304-B
Equipment Tuning Procedure
for Natural and Induced Draft-Boilers, Steam Generators, and Process Heaters.

Nothing in this 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.

A different tuning procedure may be used if it produces equivalent results. 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 process 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 process heater to prove fuel consumption is less than the heat input limit in Btu 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 clean 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" flue gas analysis (O_2, CO, CO_2, etc.) 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 and low fire)

ii. Draft above 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 and 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 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 and Heat transfer Surfaces. External and internal build-up of sediment and scale of the heating surfaces creates an insulating effect that quickly reduces unit efficiency. Excessive fuel cost will result if the units is not kept clean. Clean tube surfaces, remove scale and soot, assure proper 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 minimized 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 considerate 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 temp. controls.

c. Check safety valve pressure and capacity to meet boiler, steam generator, or process heater requirements.

d. 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 rated capacity. 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 value should always be below 400 ppm at 3% O_2. If CO is high make necessary adjustment. 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.

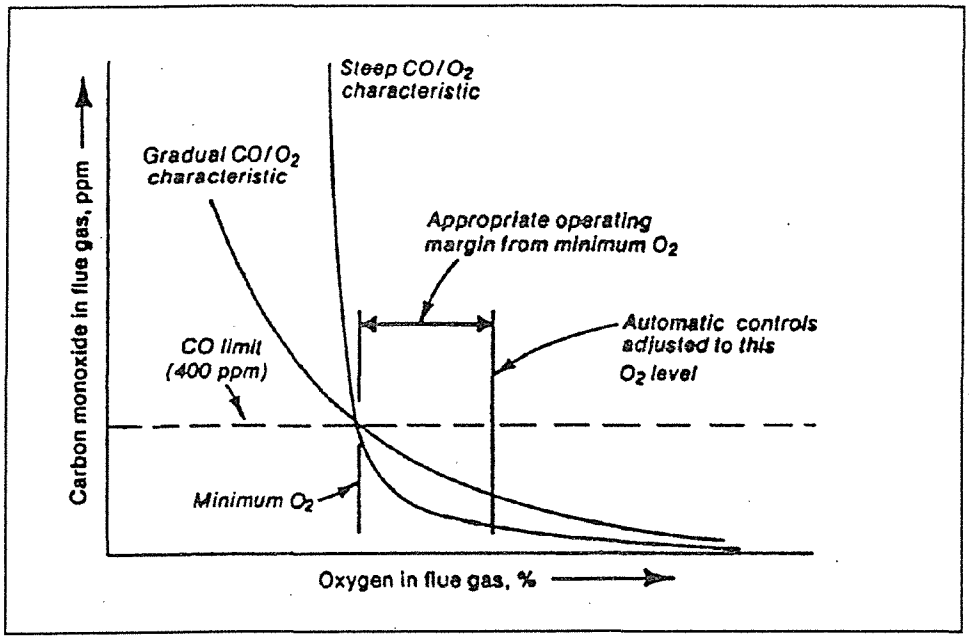


Figure 1 Oxygen/CO Characteristic Curve

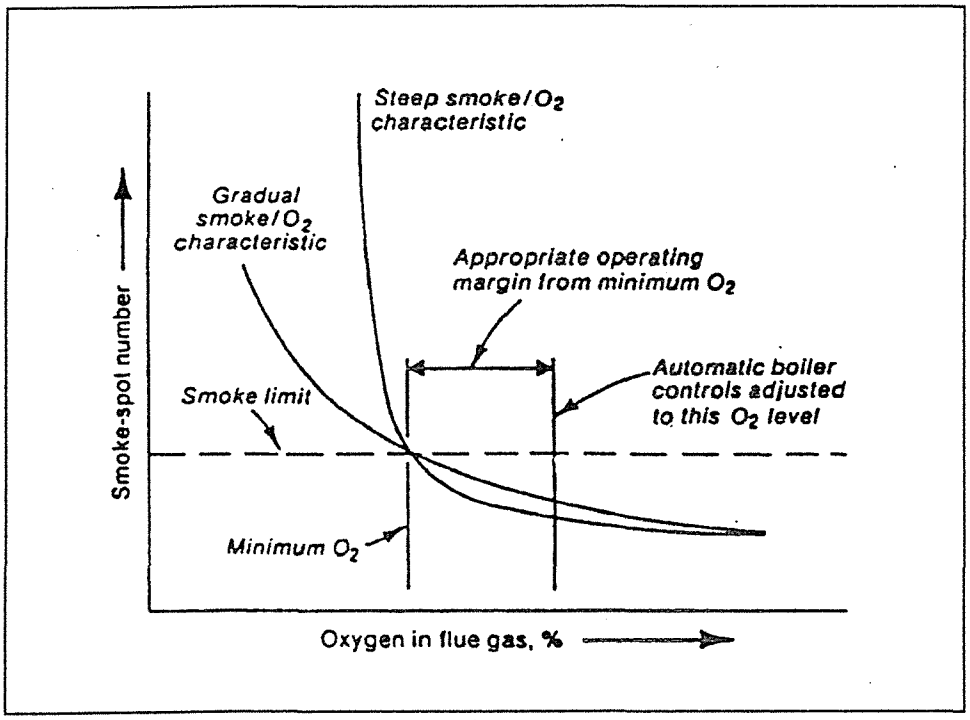


Figure 2 Oxygen/Smoke Characteristic Curve

RULE 4305 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS - PHASE 2 (Adopted December 16, 1993; Amended March 16, 1995; Amended December 19, 1996; Amended December 19, 2002, Amended August 21, 2003)

1.0 Purpose

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx) and carbon monoxide (CO) from boilers, steam generators, and process heaters.

2.0 Applicability

This rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a rated heat input greater than 5 million Btu per hour.

3.0 Definitions

3.1 Annual Heat Input: the actual, total heat input of fuels burned by a unit in a calendar year, as determined from the higher heating value and cumulative annual usage of each fuel.

3.2 Boiler or Steam Generator: any external combustion equipment fired with any fuel used to produce hot water or steam.

3.3 Box or Cabin Type Unit: a natural or induced draft unit with a rated heat input equal to or less than 40 MMBtu/hr, and which has a rectangular shaped radiant section with any horizontal distance between opposite inner walls of 12 feet or less. Said unit must be permanently installed at a gas processing plant or petroleum refinery and have a valid Permit to Operate on December 19, 1996.

3.4 British Thermal Unit (Btu): the amount of heat required to raise the temperature of one pound of water from 59°F to 60°F at one atmosphere.

3.5 Dryer: any unit in which material is dried in direct contact with the products of combustion.

3.6 Gaseous fuel: any fuel which is a gas at standard conditions.

3.7 Heat Input: the heat (hhv basis) released due to fuel combustion in a unit, not including the sensible heat of incoming combustion air and fuel.

3.8 Higher Heating Value (hhv): the total heat liberated per mass of fuel burned (Btu per pound), when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

3.9 Induced Draft Unit: a unit with an air fan located downstream of the combustion chamber, which creates negative pressure on the combustion chamber. This negative pressure draws, or induces, combustion air into the burner register.

3.10 Liquid Fuel: any fuel which is a liquid at standard conditions.

3.11 Natural Draft Unit: a unit with no combustion air fan or exhaust fan.

3.12 NOx Emissions: the sum of oxides of nitrogen expressed as NO_2 in the flue gas.

3.13 Parts Per Million by Volume (ppmv): the ratio of the number of gas molecules of a given species, or group of species, to the number of millions of total gas molecules.

3.14 Process Heater: any combustion equipment fired with liquid and/or gaseous fuel and which transfers heat from combustion gases to water or process streams. This definition excludes: kilns or ovens used for drying, baking, cooking, calcining, or vitrifying; and unfired waste heat recovery heaters used to recover sensible heat from the exhaust of combustion equipment.

3.15 Public Utilities Commission (PUC) Quality Natural Gas: any gaseous fuel, gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas (at least 80% methane by volume) as specified in PUC General order 58-A.

3.16 PUC Quality Natural Gas Curtailment: means a shortage in the supply of Public Utility Commission (PUC) quality natural gas, due solely to supply limitations or restrictions in distribution pipelines by the utility supplying the gas, and not due to the cost of natural gas.

3.17 Qualified Technician: a stationary source employee or any personnel contracted by a stationary source operator who has a documented training and a demonstrated experience performing tune-ups on a unit to the satisfaction of the APCO. The documentation of tune-up training and experience shall be made available to the APCO upon request.

3.18 Rated Heat Input (million Btu per hour): the heat input capacity specified on the nameplate of the unit. If the unit has been physically modified such that its maximum heat input differs from what is specified on the nameplate, the modified maximum heat input shall be considered as the rated heat input and made enforceable by Permit to Operate.

3.19 Re-ignition: the relighting of a unit after an unscheduled and unavoidable interruption or shut off of the fuel flow or electrical power, for a period of less than 30 minutes, due to reasons outside the control of the operator.

3.20 Replacement Standby Unit: a unit permanently installed at a single stationary source that replaces a primary unit during breakdown or maintenance of the primary unit.

Simultaneous operation of the replacement standby unit and the primary unit shall not occur except during start-up, shutdown, or tune-up of the primary unit.

3.21 Shutdown: The period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off.

3.22 Small Producer: a person who is engaged exclusively in the production of oil, and who produces an average of less than 6000 barrels of crude oil per day from all operations in any one county within the District, and who does not engage in refining, transporting or marketing of refined petroleum products.

3.23 Solid Fuel: any fuel which is a solid at standard conditions.

3.24 Standard Conditions: standard conditions as defined in Rule 1020 (Definitions).

3.25 Start-up: the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation.

3.26 Unit: any boiler, steam generator or process heater as defined in this rule.

3.27 Vertical Cylindrical Process Heater: a bottom-firing, cylindrical natural draft process heater with a rated heat input equal to or less than 40 million Btu/hr. Such unit shall be located at a petroleum refinery.

4.0 Exemptions

4.1 This rule shall not apply to:

4.1.1 Solid fuel fired units.

4.1.2 Dryers and glass melting furnaces.

4.1.3 Kilns and smelters where the products of combustion come into direct contact with the material to be heated.

4.1.4 Unfired or fired waste heat recovery boilers that are used to recover or augment heat from the exhaust of combustion turbines or internal combustion engines.

4.1.5 Any unit in which the rated heat input of each burner is less than or equal to 5 million Btu per hour as specified on the Permit to Operate, and in which each burner's products of combustion do not come into contact with the products of combustion of any other burner.

4.2 The requirements of Section 5.1 and 5.3 shall not apply to a unit when burning any fuel other than PUC quality natural gas during PUC quality natural gas curtailment provided fuels other than natural gas are burned no more than 336 cumulative hours in a calendar year plus 48 hours per calendar year for equipment testing, as limited by Permit to Operate.

4.3 Except for the provisions of Section 6.1 and either Section 5.2.1 or 5.2.2, this rule shall not apply to units operated exclusively in the months of November, December, January, or February for less than 500 hours during these four consecutive months as limited by Permit to Operate.

5.0 Requirements

All ppmv emission limits specified in this section are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 3.00 percent oxygen in accordance with Section 8.1.

5.1 Except for units subject to Section 5.2, NOx emissions shall not exceed:

5.1.1

	Operated on Gaseous fuel	Operated on Liquid Fuel
For all units, except box or cabin type units and vertical cylindrical process heaters	30 ppmv or 0.036 lb/MMBtu	40 ppmv or 0.052 lb/MMBtu
For box or cabin type units, and vertical cylindrical process heaters	147 ppmv or 0.18 lb/MMBtu	155 ppmv or 0.2 lb/MMBtu

5.1.2 When a unit is operated on combinations of gaseous fuel and liquid fuel the NOx limit shall be the heat input weighted average of the limits specified in Section 5.1.1, as calculated by the equation below.

$$\text{Weighted Average Limit} = \frac{(NOx \text{ limit } \textit{for gaseous fuel} \times G) + (NOx \text{ limit } \textit{for liquid fuel} \times L)}{G + L}$$

Where: G = annual heat input from gaseous fuel
L = annual heat input from liquid fuel

5.2 For each unit that is operated with an annual heat input less than 30 billion Btu as made enforceable by Permit to Operate, or any permitted replacement standby unit that is operated with an annual heat input less than 90 billion Btu as made enforceable by Permit to Operate, the operator shall comply with one of the following:

5.2.1 tune the unit at least once each calendar year in which it operates by a qualified technician in accordance with the procedure described in Rule 4304 (Equipment Tuning Procedure for Boilers, Steam Generators, and Process Heaters); or

5.2.2 operate the unit in a manner that maintains exhaust oxygen concentrations at less than or equal to 3.00 percent by volume on a dry basis; or

5.2.3 operate the unit in compliance with the applicable emission requirements of Sections 5.1 and 5.3.

5.3 For units subject to Section 5.1, carbon monoxide emissions shall not exceed 400 ppmv.

5.4 Monitoring Provisions

5.4.1 The operator of any unit which simultaneously fires gaseous and liquid fuels, and is subject to the requirements of Section 5.1 and 5.3, shall install and maintain an operational non-resettable, totalizing mass or volumetric flow meter in each fuel line to each unit. Volumetric flow measurements shall be compensated for temperature and pressure.

5.4.2 The operator of any unit subject to the applicable emission limits in Section 5.1, 5.2.3, and 5.3 shall either install and maintain an operational APCO approved Continuous Emissions Monitoring System (CEMS) for NOx, CO, and oxygen, as identified in Rule 1080 (Stack Monitoring), or install and maintain APCO-approved Alternate Monitoring System. An APCO approved CEMS shall comply with the requirements of 40 Code of Federal Regulation (CFR) Part 51, 40 CFR Parts 60.7 and 60.13 (except subsection h), 40 CFR 60 Appendix B (Performance Specifications) and 40 CFR 60 Appendix F (Quality Assurance Procedures, and applicable provisions of Rule 1080 (Stack Monitoring). An APCO approved Alternate Emission Monitoring System shall monitor one or more of the following:

5.4.2.1 periodic NOx and CO exhaust emission concentrations,
5.4.2.2 periodic exhaust oxygen concentration,
5.4.2.3 flow rate of reducing agent added to exhaust,
5.4.2.4 catalyst inlet and exhaust temperature,
5.4.2.5 catalyst inlet and exhaust oxygen concentration,
5.4.2.6 periodic flue gas recirculation rate,
5.4.2.7 other operational characteristics.

5.4.3 For units subject to the requirements of Section 5.2.1 or 5.2.2, monitor operational characteristics recommended by the manufacturer and approved by the APCO.

5.4.4 The operator of any unit subject to Section 5.2.1 or 5.2.2 shall install and maintain an operational non-resettable, totalizing mass or volumetric flow meter in each fuel line to each unit. Volumetric flow measurements shall be periodically compensated for temperature and pressure. A master meter, which measures fuel to all units in a group of similar units, may satisfy these requirements if approved by the APCO in writing. The cumulative annual fuel usage may be verified from utility service meters, purchase or tank fill records, or other acceptable methods, as approved by the APCO.

5.5 Compliance Determination

5.5.1 The operator of any unit shall have the option of complying with either the heat input (lb/MMBtu) emission limits or the concentration (ppmv) emission limits specified in Section 5.1. The emission limits selected to demonstrate compliance shall be specified in the source test proposal pursuant to Rule 1081 (Source Sampling).

5.5.2 All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance with the requirements of Section 5.1 or 5.3 shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0. Until six months after August 21, 2003, no determination of compliance with the requirements of Section 5.1 or 5.3 shall be established during start-up or shutdown.

5.5.3 All Continuous Emissions Monitoring System (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes to demonstrate compliance with the applicable emission limits of this rule. Any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits of this rule shall constitute a violation of this rule.

5.5.4 For emissions monitoring pursuant to Sections 5.4.2, 5.4.2.1, and 6.3.1 using a portable NOx analyzer as part of an APCO approved Alternate Emissions Monitoring System, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the 15-consecutive-minute period.

5.5.5 For emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an

applicable limit the test cannot be used to demonstrate compliance with an applicable limit.

5.5.6 Start-up and Shutdown Requirements

On and after one day after six months after August 21, 2003, the emission limits in Sections 5.1, 5.2.3, and 5.3 shall not apply during start-up or shutdown provided the operator complies with the requirements specified below.

5.5.6.1 The duration of each start-up or each shutdown shall not exceed two hours.

5.5.6.2 The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown.

5.5.6.3 Notwithstanding the requirement of Section 5.5.6.1, an operator may submit an application for a Permit to Operate condition to allow more than two hours for each start-up or each shutdown provided the operator meets all of the conditions specified in Sections 5.5.6.3.1 through 5.5.6.4.

5.5.6.3.1 The maximum allowable duration of start-up or shutdown will be determined by the APCO. The allowable duration of start-up shall not exceed twelve hours and the allowable duration of shutdown shall not exceed nine hours.

5.5.6.3.2 The APCO will only approve start-up or shutdown duration longer than two hours when the application meets the following conditions.

5.5.6.3.2.1 clearly identifies the control technologies or strategies to be utilized; and

5.5.6.3.2.2 describes what physical conditions prevail during start-up or shutdown periods that prevent the controls from being effective; and

5.5.6.3.2.3 provides a reasonably precise estimate as to when the physical conditions will have reached a

state that allows for the effective control of emissions.

5.5.6.4 The operator shall submit to the APCO any information deemed necessary by the APCO to determine the appropriate length of start-up or shutdown. The information shall include, but is not limited to the following:

5.5.6.4.1 a detailed list of activities to be performed during start-up or shutdown and a reasonable explanation for the length of time needed to complete each activity; and

5.5.6.4.2 a description of the material process flow rates and system operating parameters, etc., the operator plans to evaluate during the process optimization; and

5.5.6.4.3 an explanation of how the activities and process flow affect the operation of the emissions control equipment; and

5.5.6.4.4 basis for the requested additional duration of start-up or shutdown.

5.5.6.5 Permit to Operate modification solely to include start-up or shutdown conditions shall be exempt from the Best Available Control Technology (BACT) and offset requirements of Rule 2201 (New and Modified Stationary Source Review Rule) for applications for Authority to Construct that are submitted and are approved by the APCO before six months after August 21, 2003.

5.6 The operator of any functionally identical replacement for a box or cabin type unit shall not operate such unit in a manner which results in a measured NOx emissions concentration of greater than 30 ppmv when firing on gaseous and 40 ppmv when firing on liquid fuel.

6.0 Administrative Requirements

6.1 Recordkeeping

The records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO upon request. Failure to maintain records that demonstrate compliance or that documents the applicable exempt status requirements of this rule shall constitute a violation of this rule.

6.1.1 The operator of any unit operated under the exemption of Section 4.2 shall monitor and record for each unit the cumulative annual hours of operation on each fuel other than natural gas during natural gas curtailment and during equipment testing. Failure to maintain records required by Section 6.1.1 or information contained in the records that demonstrates noncompliance with the conditions for exemption under Section 4.2 will result in loss of exemption status. On and after August 21, 2003, any unit losing an exemption status shall be brought into full compliance with this rule as specified in Section 7.5.

6.1.2 The operator of any unit operated under the exemption of Section 4.3 shall monitor and record for each unit the cumulative annual hours of operation. Failure to maintain the records required by Section 6.1.2 or information contained in the records that demonstrate noncompliance with the conditions for exemption under Section 4.3 will result in loss of exemption status. On and after August 21, 2003, any unit losing an exemption status shall be brought into full compliance with this rule as specified in Section 7.5.

6.1.3 The operator of any unit subject to Section 5.2.1 or Section 5.2.2 shall record the amount of fuel use on a monthly basis for each unit, or for a group of units as specified in Section 5.4.4.

6.1.4 On and after August 21, 2003, the operator of any unit subject to Section 5.2.1 or Section 6.3.1 shall maintain records to verify that tune-up and monthly monitoring of the operational characteristics of the unit have been performed.

6.1.5 On and after August 21, 2003, the operator of any unit performing start-up or shutdown pursuant to Section 5.1.3 shall keep records of the duration of start-up or shutdown.

6.2 Test Methods

The following test methods shall be used unless otherwise approved by the APCO and EPA.

6.2.1 Fuel hhv shall be certified by third party fuel supplier or determined by:
6.2.1.1 ASTM D 240-87 or D 2382-88 for liquid hydrocarbon fuels;
6.2.1.2 ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels.

6.2.2 Oxides of nitrogen (ppmv) - EPA Method 7E, or ARB Method 100.
6.2.3 Carbon monoxide (ppmv) - EPA Method 10, or ARB Method 100.
6.2.4 Stack gas oxygen - EPA Method 3 or 3A, or ARB Method 100.
6.2.5 NOx Emission Rate (Heat Input Basis) - EPA Method 19.

6.2.6 Stack gas velocities - EPA Method 2.
6.2.7 Stack gas moisture content - EPA Method 4.

6.3 Compliance Testing

6.3.1 Each unit subject to Section 5.1 or 5.2.3 shall be source tested to determine compliance with the applicable requirements of Section 5.1 and 5.3 at least once every 12 months. Gaseous fuel fired units demonstrating compliance on two consecutive 12-month source tests may defer the following source test for up to 36 months. On and after August 21, 2003, during the 36-month source testing interval, the operator shall tune the unit in accordance with the provisions of Section 5.2.1, and shall monitor, at least on a monthly basis, the unit's operational characteristics recommended by the manufacturer to ensure compliance with the emission limits specified in Sections 5.1.1 and 5.2.3. Tune-ups required by Sections 5.2.1 and 6.3.1 do not need to be performed for units that operate an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored. If the result of the 36-month source testing demonstrates that the unit does not meet the applicable emission limits specified in Sections 5.1.1 and 5.3, the source testing frequency shall revert to at least once every 12 months. Failure to comply with the requirements Section 6.3.1, or any source test results that exceed the emission limits in Sections 5.1.1 and 5.2.3 shall constitute a violation of this rule.

6.3.2 In lieu of compliance with Section 6.3.1, compliance with the applicable limits shall be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units, provided:

6.3.2.1 All units in the group are initially source tested. The emissions from all test runs from units within the group are less than 90% of the permitted value, and the emissions do not vary greater than 25% from the average of all test runs; and

6.3.2.2 All units in a group are similar in terms of rated heat input, make and series, operational conditions, fuel used, and control method. No unit with a rated heat input greater than 100 MMBtu shall be considered as part of the group; and

6.3.2.3 The group is owned by a single owner and is located at a single stationary source; and

6.3.2.4 Selection of the representative unit(s) is approved by the APCO prior to testing; and

6.3.2.5 The number of representative units source tested shall be at least 30% of the total number of units in the group. The representative

tests shall rotate each year so that within three years all units in the group have been tested at least once; and

6.3.2.6 All units in the group shall have received the similar maintenance and tune-up procedures as the representative unit(s). By December 30, 2003, the operator shall submit to the APCO the specific maintenance procedures to be performed on each unit that will be included in the group for representative testing. Such maintenance procedures shall be specified in the Permit to Operate for units that are included in the group for representative testing. Any maintenance work on a unit which has no effect on emissions standards and which is not specified in the maintenance procedures shall be submitted to the APCO for approval before such unit can be included as part of the group for representative testing. Any unit that necessitates any maintenance work which has an effect on emission standards and is beyond the maintenance procedures identified in the Permit to Operate, shall not be included as part of the group for representative testing. The unit shall be source tested in accordance with the provisions of Section 6.3.1; and

6.3.2.7 Should any of the representative units exceed the required emission limits, each of the units in the group shall demonstrate compliance by source testing. Failure to complete source testing of each unit in the group within 90 days of the failed representative testing shall result in the untested units in the group being in violation of this rule. After compliance with the requirements of Section 6.3.2.7 has been demonstrated, subsequent source testing shall be performed pursuant to Sections 6.3.1 or 6.3.2.

6.4 Emission Control Plan

Effective December 19, 1996, the owner of any unit shall submit to the APCO for approval an Emissions Control Plan according to the schedule in Section 7.1. For each unit, the plan shall contain the following:

6.4.1 Permit to Operate number,
6.4.2 Fuel type and hhv,
6.4.3 Annual fuel consumption (Btu/yr),
6.4.4 Current emission level, including method used to determine emission level, and
6.4.5 Plan of actions, including a schedule of increments of progress, which will be taken to satisfy the requirements of Section 5.0 and the compliance schedule in Section 7.0.

7.0 Compliance Schedule

7.1 Group I through Group VII units, as defined in Sections 7.1.1 through 7.1.7, shall be in compliance with applicable requirements according to the schedule listed in Table 1.

TABLE 1 - Compliance Schedules

Group	Emission Control Plan	ATC Application	Full Compliance
I	6/16/95	6/16/95	12/16/97
II	6/16/95	6/16/97	12/16/99
III	6/16/95, except as provided in Section 7.3	6/16/98	12/31/2000
IV			12/16/94
V	6/19/97		12/19/97
VI	6/19/97	6/19/97	5/31/99
VII	6/19/97	5/31/99	5/31/2001

7.1.1 Group I units are those with annual heat input equal to or greater than 90 billion Btu requiring the installation of equipment to comply with applicable requirements.

7.1.2 Group II units are those with annual heat input equal to or greater than 90 billion Btu requiring the installation of equipment to comply with applicable requirements, and that meet one or more of the conditions in Sections 7.1.2.1 through 7.1.2.5.

7.1.2.1 On June 16, 1995, the unit's NOx emissions were within 0.025 lb/MMBtu of the applicable limit in Section 5.1, and

7.1.2.1.1 the unit's Permit to Operate limited NOx emissions to within 0.025 lb/MMBtu of the applicable limit in Section 5.1, or

7.1.2.1.2 a complete application for Authority to Construct had been submitted to limit the unit's NOx emissions to within 0.025 lb/MMBtu of the applicable limit in Section 5.1.

7.1.2.2 On June 16, 1995, the unit had a rated heat input of less than or equal to 35 million Btu per hour; or

7.1.2.3 On June 16, 1995, the unit was identified to be shutdown or replaced to comply with this rule; or

7.1.2.4 On June 16, 1995, the method of achieving compliance identified a change of fuel type or quality; or

7.1.2.5 On June 16, 1995, the unit was identified as, and continues to be fired exclusively on liquid fuel and is owned by a small producer.

7.1.3 Group III units are those associated with any petroleum refinery engaged in the production of state required reformulated fuels.

7.1.4 Group IV units are those with annual heat input equal to or greater than 90 billion Btu that do not require the installation of equipment to comply with applicable requirements.

7.1.5 Group V units are those:

7.1.5.1 with annual heat input less than 90 billion Btu that do not require the installation of equipment to comply with requirements of Section 5.1, and 5.3; or

7.1.5.2 subject to Section 5.2.1 or 5.2.2.

7.1.6 Group VI units are those:

7.1.6.1 with annual heat input less than 90 billion Btu and requiring the installation of equipment to comply with requirements of Section 5.1, and 5.3; or

7.1.6.2 natural draft units rated less than or equal to 40 MMBtu/hr; or

7.1.6.3 subject to the BACT or Offset exemption in Section 4.5; or

7.1.6.4 box or cabin type units; or

7.1.6.5 vertical cylindrical process heaters.

7.1.7 Group VII units are those:

7.1.7.1 with annual heat input less than 90 billion Btu for which the method of achieving compliance includes change of fuel type or quality; or

7.1.7.2 with annual heat input less than 90 billion Btu which will be shutdown or replaced to comply with this rule.

7.2 As shown in Table 1, the column labeled:

7.2.1 "Emission Control Plan" identifies the date by which the owner shall submit an Emission Control Plan pursuant to Section 6.4 which identifies all units

subject to this rule and units exempted by Section 4.3, or an Alternative Emission Control Plan pursuant to Section 9.0. The Emission Control Plan shall identify steps to be taken to comply with this rule.

7.2.2 "ATC Application" identifies the date by which the owner shall submit a complete application for Authority to Construct for necessary modifications to each unit.

7.2.3 "Full Compliance" identifies the date by which the owner shall demonstrate that each unit is in compliance with applicable requirements.

7.3 The operator of any Group III unit shall submit an Emission Control Plan by June 19, 1997 for:

7.3.1 any unit with annual heat input less than 90 billion Btu, or

7.3.2 any natural draft unit with a rated heat input less than or equal to 40 MMBtu/hr.

7.4 The operator of any Group I, II, III, or IV unit that was not in operation on or before December 16, 1993, or any Group V, VI, or VII unit that is not in operation on or before December 19, 1996, shall:

7.4.1 comply with the schedule in Section 7.1, or

7.4.2 submit a complete application for Authority to Construct for any modifications necessary to comply with this rule prior to operation of the unit, and comply with the applicable provisions of this rule upon initial operation of the unit.

7.5 The operator of a unit which, after August 21, 2003, exceeds an hours of operation, fuel use, or heat input limit specified in Sections 4.2, 4.3, or 5.2 shall be in compliance with the applicable requirements of this rule on the date that the exemption status is lost.

8.0 Calculations

8.1 All ppmv emission limits specified in Section 5.0 are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 3.00 percent oxygen as follows:

$$[\text{ppm NOx}]_{\text{corrected}} = \frac{17.95\%}{20.95\% - [\%O2]_{\text{measured}}} \text{ x } [\text{ppm NOx}]_{\text{measured}}$$

$$[\text{ppm CO}]_{\text{corrected}} = \frac{17.95\%}{20.95\% - [\%O2]_{\text{measured}}} \text{ x } [\text{ppm CO}]_{\text{measured}}$$

8.2 All pounds per million Btu NOx emission rates shall be calculated as pounds of nitrogen dioxide per million Btu of heat input (hhv).

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RULE 4306 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS – PHASE 3 (Adopted September 18, 2003; Amended March 17, 2005; Amended October 16, 2008)

1.0 Purpose

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx) and carbon monoxide (CO) from boilers, steam generators, and process heaters.

2.0 Applicability

This rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 million Btu per hour.

3.0 Definitions

3.1 Annual Capacity Factor: the ratio of the amount of fuel burned by the unit in a calendar year to the amount of fuel that the unit could have burned if it had operated at its maximum rated capacity for 8,760 hours during the calendar year.

3.2 Annual Heat Input: the actual, total heat input of fuels burned by a unit in a calendar year, as determined from the higher heating value and cumulative annual usage of each fuel.

3.3 Boiler or Steam Generator: any external combustion equipment, except oilfield steam generators, fired with any fuel used to produce hot water or steam.

3.4 British Thermal Unit (Btu): the amount of heat required to raise the temperature of one pound of water from 59°F to 60°F at one atmosphere.

3.5 Dryer: any unit in which material is dried in direct contact with the products of combustion.

3.6 Gaseous Fuel: any fuel which is a gas at standard conditions.

3.7 Gas Liquids Processing Facility: a facility that is engaged in the catalytic processing of gas liquids to produce finished products.

3.8 Heat Input: the heat (hhv basis) released due to fuel combustion in a unit, not including the sensible heat of incoming combustion air and fuel.

3.9 Higher Heating Value (hhv): the total heat liberated per mass of fuel burned (Btu per pound), when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

3.10 Liquid Fuel: any fuel which is a liquid at standard conditions.

3.11 Load-following Unit: for the purposes of this rule, a load-following unit is defined as a unit with normal operational load fluctuations and requirements which exceed the operational response range of an Ultra-Low NOx burner system(s) operating at 9 ppmv NOx. The operator shall designated load-following units on the Permit to Operate.

3.12 NOx Emissions: the sum of oxides of nitrogen expressed as NO_2 in the flue gas.

3.13 Oilfield Steam Generator: an external combustion equipment which converts water to dry steam or to a mixture of water vapor and steam, with an absolute pressure of more than 30 psia, and which is used exclusively in thermally enhanced crude oil production.

3.14 Parts Per Million by Volume (ppmv): the ratio of the number of gas molecules of a given species, or group of species, to the number of millions of total gas molecules.

3.15 Process Heater: any combustion equipment fired with liquid and/or gaseous fuel and which transfers heat from combustion gases to water or process streams. This definition excludes: kilns or ovens used for drying, baking, cooking, calcining, or vitrifying; and unfired waste heat recovery heaters used to recover sensible heat from the exhaust of combustion equipment.

3.16 Public Utilities Commission (PUC) Quality Natural Gas: any gaseous fuel, gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas (at least 80% methane by volume) as specified in PUC General order 58-A.

3.17 PUC Quality Natural Gas Curtailment: means a shortage in the supply of Public Utility Commission (PUC) quality natural gas, due solely to supply limitations or restrictions in distribution pipelines by the utility supplying the gas, and not due to the cost of natural gas.

3.18 Qualified Technician: a stationary source employee or any personnel contracted by a stationary source operator who has a documented training and a demonstrated experience performing tune-ups on a unit to the satisfaction of the APCO. The documentation of tune-up training and experience shall be made available to the APCO upon request.

3.19 Rated Heat Input (million Btu per hour): the heat input capacity specified on the nameplate of the unit. If the unit has been physically modified such that its maximum heat input differs from what is specified on the nameplate, the modified

maximum heat input shall be considered as the rated heat input and made enforceable by Permit to Operate.

3.20 Refinery Unit: a unit that is permanently installed and operated at a petroleum refinery or a gas liquids processing facility.

3.21 Re-ignition: the relighting of a unit after an unscheduled and unavoidable interruption or shut off of the fuel flow or electrical power, for a period of less than 30 minutes, due to reasons outside the control of the operator.

3.22 Shutdown: the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off.

3.23 Solid Fuel: any fuel which is a solid at standard conditions.

3.24 Standard Conditions: standard conditions as defined in Rule 1020 (Definitions).

3.25 Start-up: the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation.

3.26 Unit: any boiler, steam generator, oilfield steam generator, or process heater as defined in this rule.

4.0 Exemptions

4.1 This rule shall not apply to:

4.1.1 Solid fuel fired units.

4.1.2 Dryers and glass melting furnaces.

4.1.3 Kilns and smelters where the products of combustion come into direct contact with the material to be heated.

4.1.4 Unfired or fired waste heat recovery boilers that are used to recover or augment heat from the exhaust of combustion turbines or internal combustion engines.

4.2 The requirements of Sections 5.1.1 and 5.1.2 shall not apply to a unit when burning any fuel other than PUC quality natural gas during PUC quality natural gas curtailment provided all of the following conditions are met:

4.2.1 Fuels other than PUC quality natural gas are burned no more than 168 cumulative hours in a calendar year plus 48 hours per calendar year for equipment testing, as limited by Permit to Operate.

4.2.2 NOx emission shall not exceed 150 ppmv or 0.215 lb/MMBtu. Demonstration of compliance with this limit shall be made by either source testing, continuous emission monitoring system (CEMS), an APCO approved Alternate Monitoring System, or an APCO approved portable NOx analyzer.

5.0 Requirements

All ppmv emission limits specified in this section are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 3.00 percent oxygen in accordance with Section 8.1.

5.1 NOx and CO Emission Limits

5.1.1 Except for units subject to Sections 5.2, NOx and carbon monoxide (CO) emissions shall not exceed the limits specified in Table 1 on and after the dates specified in Tables 2 and 3.

Table 1 NOx and CO Limits

Category	Operated on Gaseous Fuel			Operated on Liquid Fuel	
	NOx Limit		CO Limit (ppmv)	NOx Limit	CO Limit (ppmv)
	Standard Option	Enhanced Option			
A. Units with a rated heat input equal to or less than 20.0 MMBtu/hour, except for Categories C, D, E, F, G, H, and I units	15 ppmv or 0.018 lb/MMBtu	9 ppmv or 0.011 lb/MMBtu	400	40 ppmv or 0.052 lb/MMBtu	400
B. Units with a rated heat input greater than 20.0 MMBtu/hour, except for Categories C, D, E, F, G, H, and I units	9 ppmv or 0.011 lb/MMBtu	6 ppmv or 0.007 lb/MMBtu	400	40 ppmv or 0.052 lb/MMBtu	400
C. Oilfield Steam Generators	15 ppmv or 0.018 lb/MMBtu	No option	400	40 ppmv or 0.052 lb/MMBtu	400

Table 1 NOx and CO Limits (continued)

Category	Operated on Gaseous Fuel			Operated on Liquid Fuel	
	NOx Limit		CO Limit (ppmv)	NOx Limit	CO Limit (ppmv)
	Standard Option	Enhanced Option			
D. Refinery units with a rated heat input greater than 5 MMBtu/hr up to 65 MMBtu/hr	30 ppmv or 0.036 lb/MMBtu	No option	400	40 ppmv or 0.052 lb/MMBtu	400
E. Refinery units with a rated heat input greater than 65 MMBtu/hr up to 110 MMBtu/hr	25 ppmv or 0.031 lb/MMBtu	No option	400	40 ppmv or 0.052 lb/MMBtu	400
F. Refinery units with a rated heat input greater than 110 MMBtu/hr	5 ppmv or 0.0062 lb/MMBtu	No option	400	40 ppmv or 0.052 lb/MMBtu	400
G. Load-following units	15 ppmv or 0.018 lb/MMBtu	9 ppmv or 0.011 lb/MMbtu	400	40 ppmv or 0.052 lb/MMBtu	400
H. Units limited by a Permit to Operate to an annual heat input of 9 billion Btu/year to 30 billion Btu/year	30 ppmv or 0.036 lb/MMBtu	No option	400	40 ppmv or 0.052 lb/MMBtu	400
I. Units in which the rated heat input of each burner is less than or equal to 5 MMBtu/hr but the total rated heat input of all the burners in a unit is greater than 5 MMBtu/hr, as specified in the Permit to Operate, and in which the products of combustion do not come in contact with the products of combustion of any other burner.	30 ppmv or 0.036 lb/MMBtu	No option	400	40 ppmv or 0.052 lb/MMBtu	400

5.1.2 When a unit is operated on combinations of gaseous fuel and liquid fuel, the NOx limit shall be the heat input weighted average of the applicable limits specified in Sections 5.1.1, as calculated by the following equation:

$$\text{Weighted Average Limit} = \frac{(\text{NOx limit for gaseous fuel x G}) + (\text{NOx limit for liquid fuel x L})}{G + L}$$

Where: G = annual heat input from gaseous fuel
L = annual heat input from liquid fuel

5.2 For each unit that is limited to less than 9 billion Btu per calendar year heat input pursuant to a Permit to Operate, the operator shall comply with the requirement of Section 7.4 and one of the following:

5.2.1 tune the unit at least twice per calendar year, (from four to eight months apart) by a qualified technician in accordance with the procedure described in Rule 4304 (Equipment Tuning Procedure for Boilers, Steam Generators, and Process Heaters). If the unit does not operate throughout a continuous six-month period within a calendar year, only one tune-up is required for that calendar year. No tune-up is required for any unit that is not operated during that calendar year; 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; or

5.2.2 operate the unit in a manner that maintains exhaust oxygen concentrations at less than or equal to 3.00 percent by volume on a dry basis; or

5.2.3 operate the unit in compliance with the applicable emission limits of Sections 5.1.1 or 5.1.2.

5.3 On and after the full compliance schedule specified in Section 7.1, the applicable emission limits of Sections 5.1, 5.2.2 and 5.2.3 shall not apply during start-up or shutdown provided an operator complies with the requirements specified below.

5.3.1 The duration of each start-up or each shutdown shall not exceed two hours, except as provided in Section 5.3.3.

5.3.2 The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown.

5.3.3 Notwithstanding the requirement of Section 5.3.1, an operator may submit an application for a Permit to Operate condition to allow more than two hours for each start-up or each shutdown provided the operator meets all of the conditions in specified in Sections 5.3.3.1 through 5.3.3.3.

5.3.3.1 The maximum allowable duration of start-up or shutdown will be determined by the APCO. The allowable duration of start-up shall not exceed twelve hours and the allowable duration of shutdown shall not exceed nine hours.

5.3.3.2 The APCO will only approve start-up or shutdown duration longer than two hours when the application meets the following conditions:

5.3.3.2.1 clearly identifies the control technologies or strategies to be utilized; and

5.3.3.2.2 describes what physical conditions prevail during start-up or shutdown periods that prevent the controls from being effective; and

5.3.3.2.3 provides a reasonably precise estimate as to when the physical conditions will have reached a state that allows for the effective control of emissions.

5.3.3.3 The operator shall submit to the APCO any information deemed necessary by the APCO to determine the appropriate length of start-up or shutdown. The information shall include, but is not limited to the following:

5.3.3.3.1 a detailed list of activities to be performed during start-up or shutdown and a reasonable explanation for the length of time needed to complete each activity; and

5.3.3.3.2 a description of the material process flow rates and system operating parameters, etc., the operator plans to evaluate during the process optimization; and an explanation of how the activities and process flow affect the operation of the emissions control equipment; and

5.3.3.3.3 basis for the requested additional duration of start-up or shutdown.

5.3.4 Permit to Operate (PTO) modifications solely to include start-up or shutdown conditions may be exempt from Best Available Control Technology (BACT) and emission offset requirements if the PTO modifications meet the requirements of Rule 2201 (New or Modified Stationary Source Review Rule) Section 4.2 (BACT Exemptions) and Rule 2201 Section 4.6 (Offset Exemptions).

5.4 Monitoring Provisions

5.4.1 The operator of any unit which simultaneously fires gaseous and liquid fuels, and is subject to the requirements of Section 5.1, shall install and maintain an operational non-resettable, totalizing mass or volumetric flow

meter in each fuel line to each unit. Volumetric flow measurements shall be periodically compensated for temperature and pressure.

5.4.2 The operator of any unit subject to the applicable emission limits in Sections 5.1 shall install and maintain an operational APCO approved Continuous Emissions Monitoring System (CEMS) for NOx, CO, and oxygen, or implement an APCO-approved Alternate Monitoring System. An APCO approved CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13 (except subsection h), 40 CFR Part 60 Appendix B (Performance Specifications) and 40 CFR Part 60 Appendix F (Quality Assurance Procedures, and applicable provisions of Rule 1080 (Stack Monitoring). An APCO approved Alternate Monitoring System shall monitor one or more of the following:

5.4.2.1 periodic NOx and CO exhaust emission concentrations,
5.4.2.2 periodic exhaust oxygen concentration,
5.4.2.3 flow rate of reducing agent added to exhaust,
5.4.2.4 catalyst inlet and exhaust temperature,
5.4.2.5 catalyst inlet and exhaust oxygen concentration,
5.4.2.6 periodic flue gas recirculation rate,
5.4.2.7 other operational characteristics.

5.4.3 For units subject to the requirements of Section 5.2.1 or 5.2.2, the operator shall monitor, at least on a monthly basis, the operational characteristics recommended by the manufacturer and approved by the APCO.

5.4.4 The operator of any Category H unit listed in Section 5.1.1 Table 1 and any unit subject to Section 5.2.1 or 5.2.2 shall install and maintain an operational non-resettable, totalizing mass or volumetric flow meter in each fuel line to each unit. Volumetric flow measurements shall be periodically compensated for temperature and pressure. A master meter, which measures fuel to all units in a group of similar units, may satisfy these requirements if approved by the APCO in writing. The cumulative annual fuel usage may be verified from utility service meters, purchase or tank fill records, or other acceptable methods, as approved by the APCO.

5.4.5 The APCO shall not approve an alternative monitoring system unless it is documented that continued operation within ranges of specified emissions-related performance indicators or operational characteristics provides a reasonable assurance of compliance with applicable emission limits. The operator shall source test over the proposed range of surrogate operating parameters to demonstrate compliance with the applicable emission standards.

5.5 Compliance Determination

5.5.1 The operator of any unit shall have the option of complying with either the applicable heat input (lb/MMBtu) emission limits or the concentration (ppmv) emission limits specified in Section 5.1. The emission limits selected to demonstrate compliance shall be specified in the source test proposal pursuant to Rule 1081 (Source Sampling).

5.5.2 All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0.

5.5.3 All Continuous Emissions Monitoring System (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes to demonstrate compliance with the applicable emission limits of this rule. Any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits of this rule shall constitute a violation of this rule.

5.5.4 For emissions monitoring pursuant to Sections 5.4.2, 5.4.2.1, and 6.3.1 using a portable NOx analyzer as part of an APCO approved Alternate Emissions Monitoring System, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the 15-consecutive-minute period.

5.5.5 For emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit.

6.0 Administrative Requirements

6.1 Recordkeeping

The records required by Sections 6.1.1 through 6.1.~~4~~ shall be maintained for five calendar years and shall be made available to the APCO upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

6.1.1 The operator of any unit operated under the exemption of Section 4.2 shall monitor and record for each unit the cumulative annual hours of operation on each fuel other than natural gas during periods of natural gas curtailment and equipment testing. The NOx emission concentration (in ppmv or lb/MMBtu) for each unit that is operated during periods of natural gas curtailment shall be recorded. Failure to maintain records required by Section 6.1.1 or information contained in the records that demonstrates noncompliance with the conditions for exemption under Section 4.2 will result in loss of exemption status. On and after the applicable compliance schedule specified in Section 7.0, any unit losing an exemption status shall be brought into full compliance with this rule as specified in Section 7.3.

6.1.2 The operator of any Category H unit listed in Section 5.1.1 Table 1 and any unit that is subject to the requirements of Section 5.2 shall record the amount of fuel use at least on a monthly basis for each unit, or for a group of units as specified in Section 5.4.4. On and after the applicable compliance schedule specified in Section 7.0, in the event that such unit exceeds the applicable annual heat input limit specified in Sections 5.1.1 Table 1 Category H and Section 5.2, the unit shall be brought into full compliance with this rule as specified in Section 7.4.

6.1.3 The operator of any unit subject to Section 5.2.1 or Section 6.3.1 shall maintain records to verify that the required tune-up and the required monitoring of the operational characteristics of the unit have been performed.

6.1.4 The operator performing start-up or shutdown of a unit shall keep records of the duration of start-up or shutdown.

6.2 Test Methods

The following test methods shall be used unless otherwise approved by the APCO and EPA.

6.2.1 Fuel hhv shall be certified by third party fuel supplier or determined by:
- 6.2.1.1 ASTM D 240-87 or D 2382-88 for liquid hydrocarbon fuels;
- 6.2.1.2 ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels.

6.2.2 Oxides of nitrogen (ppmv) - EPA Method 7E, or ARB Method 100.

6.2.3 Carbon monoxide (ppmv) - EPA Method 10, or ARB Method 100.

6.2.4 Stack gas oxygen - EPA Method 3 or 3A, or ARB Method 100.
6.2.5 NOx Emission Rate (Heat Input Basis) - EPA Method 19.
6.2.6 Stack gas velocities - EPA Method 2.
6.2.7 Stack gas moisture content - EPA Method 4.

6.3 Compliance Testing

6.3.1 Each unit subject to the requirements in Sections 5.1 or 5.2.3 shall be source tested to determine compliance with the applicable emission limits at least once every 12 months, (no more than 30 days before or after the required annual source test date). Units that demonstrate compliance on two consecutive 12-month source tests may defer the following 12-month source test for up to 36 months (no more than 30 days before or after the required 36-month source test date). During the 36-month source testing interval, the operator shall tune the unit in accordance with the provisions of Section 5.2.1, and shall monitor, on a monthly basis, the unit's operational characteristics recommended by the manufacturer to ensure compliance with the applicable emission limits specified in Sections 5.1 or 5.2.3. Tune-ups required by Sections 5.2.1 and 6.3.1 do not need to be performed for units that operate and maintain an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits specified in Sections 5.1 or 5.2.3, the source testing frequency shall revert to at least once every 12 months. Failure to comply with the requirements Section 6.3.1, or any source test results that exceed the applicable emission limits in Sections 5.1 or 5.2.3 shall constitute a violation of this rule.

6.3.2 In lieu of compliance with Section 6.3.1, compliance with the applicable emission limits in Sections 5.1 or 5.2.3 shall be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units, provided:

6.3.2.1 All units in the group are initially source tested. The emissions from all test runs from units within the group are less than 90% of the permitted value, and the emissions do not vary greater than 25% from the average of all test runs; and

6.3.2.2 All units in a group are similar in terms of rated heat input, make and series, operational conditions, fuel used, and control method. No unit with a rated heat input greater than 100 MMBtu shall be considered as part of the group; and

6.3.2.3 The group is owned by a single owner and is located at a single stationary source; and

6.3.2.4 Selection of the representative unit(s) is approved by the APCO prior to testing; and

6.3.2.5 The number of representative units source tested shall be at least 30% of the total number of units in the group. The representative tests shall rotate each year so that within three years all units in the group have been tested at least once.

6.3.2.6 All units in the group shall have received the similar maintenance and tune-up procedures as the representative unit(s) as listed in the Permit to Operate. The operator shall submit to the APCO the specific maintenance procedures to be performed on each unit that will be included in the group for representative testing. Such maintenance procedures shall be specified in the Permit to Operate for units that are included in the group for representative testing. Any maintenance work on a unit which has no effect on emissions standards and which is not specified in the maintenance procedures shall be submitted to the APCO for approval before such unit can be included as part of the group for representative testing. Any unit that necessitates any maintenance work which has an effect on emission standards and is beyond the maintenance procedures identified in the Permit to Operate, shall not be included as part of the group for representative testing. The unit shall be source tested in accordance with the provisions of Section 6.3.1; and

6.3.2.7 Should any of the representative units exceed the required emission limits, each of the units in the group shall demonstrate compliance by emissions testing. Failure to complete emissions testing within 90 days of the failed test shall result in the untested units being in violation of this rule. After compliance with the requirements of Section 6.3.2.7 has been demonstrated, subsequent source testing shall be performed pursuant to Sections 6.3.1 or 6.3.2.

6.4 Emission Control Plan (ECP)

6.4.1 The operator of any unit shall submit to the APCO for approval an Emissions Control Plan according to the compliance schedule in Section 7.0. For each unit, the plan shall contain the following:

6.4.1.1 Permit to Operate number,
6.4.1.2 Fuel type and hhv,
6.4.1.3 Annual fuel consumption (Btu/yr),

6.4.1.4 Current emission level, including method used to determine emission level,

6.4.1.5 NOx limit to be satisfied, either Standard Option or Enhanced Option, and

6.4.1.6 Plan of actions, including a schedule of increments of progress, which will be taken to satisfy the requirements of Section 5.0 and the compliance schedule in Section 7.0.

6.4.2 The operator shall submit to the APCO for approval, as part of the ECP, a list of units which are to be designated as load-following units. The APCO shall only designate, as load-following, units for which the following information has been provided to demonstrate that the units qualify as load-following:

6.4.2.1 Technical data such as steam demand charts or other information to demonstrate the normal operational load fluctuations and requirements of the unit,

6.4.2.2 Technical data about the operational response range of an Ultra-Low NOx burner system(s) operating at 9 ppmv NOx, and

6.4.2.3 Technical data demonstrating that the unit(s) are designed and operated to optimize the use of base-loaded units in conjunction with the load-following unit(s).

7.0 Compliance Schedule

7.1 An operator with multiple units at a stationary source shall comply with this rule in accordance with the schedule specified in Table 2. A stationary source with only one unit shall comply with the schedule specified in Table 2 Group 1 for standard option or Table 3 Group 1 for enhanced option.

TABLE 2 – Standard Option Compliance Schedule

Units to be in Compliance at a Stationary Source	Emission Control Plan	Authority to Construct	Full Compliance
Group 1: 25% or more of the total number of units subject to this rule on June 1, 2005, excluding Group 4	June 1, 2004	June 1, 2004	June 1, 2005
Group 2: 62.5% or more of the total number of units subject to this rule on June 1, 2006, excluding Group 4	June 1, 2004	January 2, 2005	June 1, 2006

Group 3: 100% of the total number of units subject to this rule on June 1, 2007	June 1, 2004	January 2, 2006	June 1, 2007
Group 4: A. Load-following units B. Units limited by Permit to Operate to an annual capacity factor of 10% or less as of June 1, 2005 C. Category I units at any stationary source that has no more than two units subject to this rule.	June 1, 2004	January 2, 2006	June 1, 2007

Units are considered to be subject to this rule if the rule is applicable to the units pursuant to Section 2.0 and the units are not exempt pursuant to Section 4.1.

TABLE 3 – Enhanced Option Compliance Schedule

Units to be in Compliance at a Stationary Source	Emission Control Plan	Authority to Construct	Full Compliance
Group 1: 25% or more of the total number of units subject to this rule on June 1, 2005, excluding Group 4	December 1, 2005	December 1, 2005	December 1, 2006
Group 2: 62.5% or more of the total number of units subject to this rule on June 1, 2006, excluding Group 4	December 1, 2005	July 1, 2006	December 1, 2007
Group 3: 100% of the total number of units subject to this rule on June 1, 2007	December 1, 2005	July 1, 2007	December 1, 2008

TABLE 3 – Enhanced Option Compliance Schedule (Continued)

Units to be in Compliance at a Stationary Source	Emission Control Plan	Authority to Construct	Full Compliance
Group 4: A. Load-following units	December 1, 2005	July 1, 2007	December 1, 2008

Units are considered to be subject to this rule if the rule is applicable to the units pursuant to Section 2.0 and the units are not exempt pursuant to Section 4.1.

7.2 As shown in Table 2 and Table 3, the column labeled:

7.2.1 "Emission Control Plan" identifies the date by which the operator shall submit an Emission Control Plan pursuant to Section 6.4. The Emission

Control Plan shall identify all units subject to this rule. The Emission Control Plan shall identify steps to be taken to comply with this rule.

7.2.2 "Authority to Construct" identifies the date by with the operator shall submit an Application for Authority to Construct for each unit subject to the rule.

7.2.3 "Full Compliance" identifies the date by which the owner shall demonstrate that each unit is in compliance with this rule.

7.3 Any unit that is exempted under Section 4.2 that becomes subject to the emission limits of this rule through the loss of exemption status, shall be in full compliance with this rule on and after the date the exemption status is lost.

7.4 Any unit that becomes subject to the emission limits of this rule as a result of exceeding the applicable annual heat input limit specified in either Section 5.1.1 Table 1 Category H or Section 5.2, shall be in compliance with the applicable standard option emission limits for Category A and B units in Section 5.1.1 on and after the date the annual heat input limit is exceeded.

8.0 Calculations

8.1 All ppmv emission limits specified in Section 5.1 are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 3.00 percent oxygen as follows:

$$[\text{ppm NOx}]_{\text{corrected}} = \frac{17.95\%}{20.95\% - [\%O2]_{\text{measured}}} \text{ x } [\text{ppm NOx}]_{\text{measured}}$$

$$[\text{ppm CO}]_{\text{corrected}} = \frac{17.95\%}{20.95\% - [\%O2]_{\text{measured}}} \text{ x } [\text{ppm CO}]_{\text{measured}}$$

8.2 All pounds per million Btu NOx emission rates shall be calculated as pounds of nitrogen dioxide per million Btu of heat input (hhv).

9.0 Alternative Emission Control

9.1 General

The single owner of two or more units may comply with Section 5.1 by controlling units in operation at the same stationary source, or at two contiguous stationary sources, to achieve an aggregated NOx emission factor no higher than 90 percent of the aggregated NOx emission factor limit that would result if each unit in operation were individually in compliance with the applicable NOx emission limits in Section 5.1. An operator that is subject to the AECP requirements below shall also comply with the applicable requirements of Sections 5.0, 6.0, 7.0 and 8.0.

9.2 Eligibility

A unit not subject to Section 5.1 or Section 5.2.3 is not eligible for inclusion in an AECP.

9.3 Exclusion

No unit subject to Sections 5.2.1 or 5.2.2 shall be included in an AECP.

9.4 AECP Definitions

For the purposes of Section 9.0, the following definitions shall apply:

9.4.1 Aggregated NOx emission factor limit: the sum of the NOx emissions, over seven consecutive calendar days, that would result if all units in the AECP were in compliance with the lb/MMBtu limits in Section 5.1 and operating at their actual firing rates, divided by the sum of the heat input of all units in the AECP over seven consecutive calendar days. Aggregated emission factor limit is calculated as:

$$L_A = \frac{\Sigma L_i F_i}{\Sigma F_i}$$

where: L_A is the aggregated NOx emission factor limit (lb/MMBtu)

L_i is the applicable NOx emission factor limit (lb/MMBtu) specified in Section 5.1.1 Table 1 or Section 5.1.2 for each category of unit in the AECP,

F_i is the total heat input (hhv basis) of fuel (MMBtu) combusted in each unit during seven consecutive calendar days, and

i identifies each unit in the AECP.

9.4.2 Aggregated NOx emission factor: the sum of the actual NOx emissions during seven consecutive calendar days from all units in the AECP, divided by the sum of the heat input of all units in the AECP during seven consecutive calendar days. The aggregated emission factor is calculated as:

$$E_A = \frac{\Sigma E_i F_i}{\Sigma F_i}$$

where: E_A is the aggregated NOx emission factor (lb/MMBtu),

E_i is the NOx emission factor (lb/MMBtu) for each unit in the AECP, established and verified by source testing, or continuous emission monitors,

F_i is the total heat input (hhv basis) of fuel (MMBtu) combusted in each unit during seven consecutive calendar days, and

i identifies each unit in the AECP.

9.5 AECP Requirements

9.5.1 The aggregated NOx emission factor (E_A) shall not exceed 90 percent of the aggregated emission limit (L_A). The owner of any unit in an AECP shall notify the APCO within 24 hours of any violation of this section.

$$E_A \text{ must be} \leq 0.90 \times L_A$$

9.5.2 Only units in the AECP which were operated during seven consecutive calendar days shall be included in the calculations of the aggregated NOx emission factor (L_A) and the aggregated NOx emission limit (E_A).

9.5.3 During each seven consecutive calendar days of operation that the AECP is used, the operator shall calculate and record the aggregated NOx emission factor (L_A) and the aggregate NOx emission limit (E_A).

9.5.4 The operator shall submit a NOx emission factor for each unit that is included in the AECP. The established NOx emission factor of the unit shall be no less than the emission factor of the unit from the most recent source test conducted pursuant to Section 6.3 and approved by the APCO. The operator shall not operate any AECP unit in such a manner that the NOx emissions exceed the established NOx emission factor of the unit.

9.5.5 The operator shall submit the AECP, for approval by the APCO, by June 1, 2004 or at least 24 months before compliance with the applicable emission limits in Section 5.1 is required pursuant to the Section 7.1, whichever is later. The AECP shall be submitted with an application for an Authority to Construct pursuant to complying with Section 7.1 as applicable. The operator shall obtain a written approval of the AECP from the APCO prior to implementation.

9.6 AECP Administrative Requirements

9.6.1 The AECP shall:

9.6.1.1 Contain all data, records, and other information necessary to determine eligibility of the units for alternative emission control, including but not limited to:

9.6.1.1.1 A list of units subject to alternative emission control,
9.6.1.1.2 Daily average and maximum hours of utilization for each unit,
9.6.1.1.3 Rated heat input of each unit, and
9.6.1.1.4 Fuel type for each unit.

9.6.1.2 Present the methodology for recordkeeping and reporting required by Sections 9.6.4 and 9.6.5.

9.6.1.3 Specify which NOx limit, either Standard Option or Enhanced Option, will be satisfied by the units under the AECP.

9.6.1.4 Demonstrate that the aggregated emission factor will meet the requirements of Section 9.5.

9.6.1.5 Demonstrate that the schedule for achieving AECP NOx emission levels is at least as expeditious as the schedule if applicable units were to comply individually with the applicable emission levels in Section 5.1 and the increments of progress in Section 7.0.

9.6.2 Revision of AECP

Owners shall demonstrate APCO approval of the AECP prior to applying for a modification to said AECP.

9.6.3 AECP Recordkeeping

In addition to the records kept pursuant to Section 6.1, the operator shall maintain records, on a daily basis, of the parameters needed to demonstrate compliance with the applicable NOx emission limits when operating under the AECP. The records shall be retained for at least five years and shall be made available to the APCO upon request. The records shall include, but are not limited to, the following:

9.6.3.1 For each unit included in the AECP the owner shall maintain the following records for each day:

9.6.3.1.1 fuel type and amount used for each unit (F_i),

9.6.3.1.2 the actual emission factor for each unit (E_i),
9.6.3.1.3 the total emissions for all units ($\Sigma E_i F_i$),
9.6.3.1.4 the aggregated emission factor (E_A),
9.6.3.1.5 the aggregated emission factor limit (L_A), and
9.6.3.1.6 any other parameters needed to demonstrate daily compliance with the applicable NOx emissions when operating the units under the AECP.

9.6.4 Reporting and Annual Updates

Notifications of any violation pursuant to Section 9.5 shall include:
9.6.4.1 name and location of facility,
9.6.4.2 list of applicable units,
9.6.4.3 cause and expected duration of exceedance,
9.6.4.4 the amount of excess emissions, and
9.6.4.5 proposed corrective actions and schedule.

9.7 Compliance Schedule

The AECP schedule for achieving reduced NOx emission levels shall be at least as expeditious as the schedule if applicable units were to comply individually with the emissions limits specified in Sections 5.1.1 and 5.1.2 and the applicable compliance schedule required by Section 7.0.

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RULE 4307 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS – 2.0 MMBtu/hr to 5.0 MMBtu/hr (Adopted December 15, 2005; Amended April 20, 2006; Amended October 16, 2008; Amended May 19, 2011; Amended April 21, 2016)

1.0 Purpose

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx), carbon monoxide (CO), oxides of sulfur (SO_2), and particulate matter 10 microns or less (PM10) from boilers, steam generators, and process heaters.

2.0 Applicability

This rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input of 2.0 million Btu per hour (MMBtu/hr) up to and including 5.0 MMBtu/hr.

3.0 Definitions

3.1 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.2 Air Resources Board (ARB): as defined in Rule 1020 (Definitions).

3.3 Annual Heat Input: the actual, total heat input of fuels burned by a unit in a calendar year, as determined from the higher heating value and cumulative annual usage of each fuel.

3.4 Atmospheric Unit: any unit with a non-sealed combustion chamber in which the combustion air and flue gases are drawn through the unit without the use of a fan.

3.5 Boiler or Steam Generator: any external combustion equipment fired with any fuel used to produce hot water or steam.

3.6 British Thermal Unit (Btu): the amount of heat required to raise the temperature of one pound of water from 59°F to 60°F at one atmosphere.

3.7 California Public Utility Commission (PUC) Quality Natural Gas: any gaseous fuel, gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume.

3.8 Certified Unit or Certified Retrofit Control Technology: any unit, any control technology, or any burner and ancillary controls or blowers, that has been demonstrated to comply with the emissions limits of this rule and which has been approved by the APCO pursuant to Section 9.0 of this rule.

3.9 Dryer: any unit in which material is dried in direct contact with the products of combustion.

3.10 Gaseous Fuel: any fuel which is a gas at Standard Conditions.

3.11 Glycol Reboiler: a burner that supplies heat to remove water vapor and hydrocarbons from rich glycol by simple distillation. Reboilers are also known as regenerators.

3.12 Heat Input: the heat (hhv basis) released due to fuel combustion in a unit, not including the sensible heat of incoming combustion air and fuel.

3.13 Higher Heating Value (hhv): the total heat liberated per mass of fuel burned (expressed as Btu per pound), when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

3.14 Humidifier: a device or system that uses an air stream heated by a direct contact combustion process in combination with a water spray to produce warm air of high humidity in order to maintain or increase the moisture content of the material being processed or conveyed by the air stream.

3.15 Liquid Fuel: any fuel which is a liquid at Standard Conditions.

3.16 Liquefied Petroleum Gas (LPG): a gas containing propane, butane, or a mixture of propane/butane, which is gaseous under ambient atmospheric conditions but can be liquefied under moderate pressure at normal temperatures.

3.17 NOx Emissions: the sum of oxides of nitrogen expressed as NO_2 in the flue gas.

3.18 NOx Exhaust Control: a device or technique used to treat a unit's exhaust combustion gas to reduce NOx emissions. Such a device or technique includes, but is not limited to, selective catalytic reduction or nonselective catalytic reduction.

3.19 Parts Per Million by Volume (ppmv): as defined in Rule 1020 (Definitions).

3.20 Process Heater: any combustion equipment fired with liquid and/or gaseous fuel and which transfers heat from combustion gases to water or process streams. This definition excludes: kilns or ovens used for drying, baking, cooking, calcining, or vitrifying; and unfired waste heat recovery heaters used to recover sensible heat from the exhaust of combustion equipment.

3.21 Qualified Technician: a stationary source employee or any personnel contracted by a stationary source operator who has a documented training and a demonstrated experience performing tune-ups on a unit to the satisfaction of the APCO. The documentation of tune-up training and experience shall be made available to the APCO upon request.

3.22 Rated Heat Input (expressed as million Btu per hour): the heat input capacity specified on the nameplate of the unit. If the unit has been physically modified such that its maximum heat input differs from what is specified on the nameplate, the modified maximum heat input shall be considered as the rated heat input and made enforceable by Permit to Operate.

3.23 Re-ignition: the relighting of a unit after an unscheduled and unavoidable interruption or shut off of the fuel flow or electrical power, for a period of less than 30 minutes, due to reasons outside the control of the operator.

3.24 School: any public or private school used for the purpose of education and instruction of school pupils in Kindergarten through Grade 12, but does not include any private school in which education and instruction are primarily conducted in private homes.

3.25 Shutdown: the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to a cold or ambient temperature as the fuel supply is turned off. A unit is considered in shutdown status when the fuel supply to the unit is turned off for a continuous period of at least 30 minutes.

3.26 Solid Fuel: any fuel which is a solid at Standard Conditions.

3.27 Standard Conditions: as defined in Rule 1020 (Definitions).

3.28 Start-up: the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure.

3.29 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.30 Tree Nut Pasteurizer: a unit, designed to remove pathogens from tree nuts, which is operated at a tree nut processing facility subject to any part of Title 7 Section 900 through 999 of the Code of Federal Regulations (7 CFR 900 through 7 CFR 999).

3.31 Unit: any boiler, steam generator or process heater as defined in this rule.

3.32 US Environmental Protection Agency (EPA): the United States Environmental Protection Agency or any person authorized to act on its behalf.

4.0 Exemptions

This rule shall not apply to:

4.1 Solid fuel fired units.

4.2 Dryers and glass melting furnaces.

4.3 Kilns, humidifiers, and smelters where the products of combustion come into direct contact with the material to be heated.

4.4 Unfired or fired waste heat recovery boilers that are used to recover or augment heat from the exhaust of combustion turbines or internal combustion engines.

4.5 Units used at a school. On and after July 1, 2015, units used at a school shall comply with all applicable requirements of this rule.

4.6 The requirements of Section 5.1 shall not apply to a unit when burning any fuel other than PUC quality natural gas during a PUC quality natural gas curtailment provided all of the following conditions are met:

4.6.1 Fuels other than PUC quality natural gas are burned no more than 168 cumulative hours in a calendar year plus 48 hours per calendar year for equipment testing, as limited by Permit to Operate or Permit-Exempt Equipment Registration.

4.6.2 NOx emission shall not exceed 150 ppmv (corrected to 3.00 percent oxygen) or 0.215 lb/MMBtu. Demonstration of compliance with this limit shall be made by either source testing, continuous emission monitoring system (CEMS), an APCO approved Alternate Monitoring System, or an APCO approved portable NOx analyzer.

5.0 Requirements

All ppmv emission limits specified in this section are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 3.00 percent oxygen in accordance with Section 8.1.

5.1 NOx and CO Emission Limits

5.1.1 Except for units subject to either Section 5.1.2 or Section 5.2, no unit shall be operated unless it is certified, according to Section 9.0, or source tested in accordance with the test methods in Section 6.2, to comply with the applicable emission limits specified in Table 1 and Table 2.

Table 1 NOx and CO limits		
Type of Unit	NOx Limit	CO Limit (ppmv)
Gaseous Fuel-Fired Unit	30 ppmv or 0.036 lb/MMBtu	400
Liquid Fuel-Fired Unit	40 ppmv or 0.052 lb/MMBtu	400

Table 2 NOx and CO limits for New and Replacement Units			
I. Atmospheric Units			
Type of Unit	NOx Limit	CO Limit (ppmv)	Effective Date
A. A new or replacement unit that is not included in Section I. B.	12 ppmv or 0.014 lb/MMBtu	400	Upon Installation of a new or replacement unit on and after January 1, 2010
B. A new or replacement unit that is one of the following: 1. a unit used at a school; or 2. a unit in an oilfield or refinery; or 3. a glycol reboiler; or 4. a unit with a heat input greater than 1.8 billion Btu but less than 5.0 billion Btu per calendar year	12 ppmv or 0.014 lb/MMBtu	400	Upon Installation of a new or replacement unit on and after January 1, 2016
II. Non-Atmospheric Units			
Type of Unit	NOx Limit	CO Limit (ppmv)	Effective Date
A. A new or replacement unit that is not included in Section II. B.	9 ppmv or 0.011 lb/MMBtu	400	Upon Installation of a new or

			replacement unit on and after January 1, 2010
B. A new or replacement unit that is one of the following: 1. a unit used at a school; or 2. a unit in an oilfield or refinery; or 3. a glycol reboiler; or 4. a unit with a heat input greater than 1.8 billion Btu but less than 5.0 billion Btu per calendar year	9 ppmv or 0.011 lb/MMBtu	400	Upon Installation of a new or replacement unit on and after January 1, 2016

5.1.2 Tree nut pasteurizers shall be fired exclusively on LPG or PUC quality natural gas.

5.1.2.1 All tree nut pasteurizers shall be operated and maintained according to manufacturer's specifications or APCO-approved alternative procedures.

5.1.2.2 Operation and maintenance records and manufacturer's specifications/APCO-approved alternative procedures shall be maintained in accordance with Section 6.1.5.

5.1.2.3 During PUC quality natural gas curtailments, operators of tree nut pasteurizers shall abide by the provisions of Section 4.6, if the unit is operated during the curtailment.

5.2 Operators shall meet the following requirements as applicable.

5.2.1 Until June 30, 2015, for each existing atmospheric unit operated in an oilfield or refinery; each glycol reboiler; or each unit limited to no more than 5.0 billion Btu per calendar year heat input pursuant to a Permit to Operate or Permit-Exempt Equipment Registration, the operator shall comply with Section 5.5.2, Section 7.3, Section 7.4, and either Section 5.2.1.1, 5.2.1.2, or 5.2.1.3.

5.2.1.1 Tune the unit at least twice per calendar year, (from four to eight months apart) using a qualified technician in accordance with the procedure described in Rule 4304 (Equipment Tuning Procedure for Boilers, Steam Generators, and Process Heaters). If the unit does not operate throughout a continuous six-month period within a calendar year, only one tune-up is required for that calendar year. No tune-up is required for any unit that is not operated during that calendar year; 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; or

5.2.1.2 Operate the unit in a manner that maintains exhaust oxygen concentrations at less than or equal to 3.00 percent by volume on a dry basis; or

5.2.1.3 Certify the unit according to Section 9.0 to comply with the applicable emission requirements of Section 5.1 Table 1.

5.2.2 On and after July 1, 2015, for each unit limited to no more than 1.8 billion Btu per calendar year heat input pursuant to a Permit to Operate or Permit-Exempt Equipment Registration, the operator shall comply with Section 5.5.2, Section 7.3, Section 7.4, and either Section 5.2.1.1, 5.2.1.2, or 5.2.1.3.

5.2.3 On and after July 1, 2015, for each existing atmospheric unit in an oilfield or refinery; each glycol reboiler; or each unit with a heat input greater than 1.8 billion Btu to less than 5.0 billion Btu per calendar year, the operator shall comply with the applicable emission requirements of Section 5.1 Table 1. The operator shall comply with the compliance requirements and deadlines specified for Group 3 units in Section 7.1 Table 3.

5.3 Particulate Matter Control Requirements

5.3.1 To limit particulate matter emissions, an operator shall comply with one of the following requirements:

5.3.1.1 On and after July 1, 2015, operators shall fire units exclusively on PUC quality natural gas, commercial propane, butane, liquefied petroleum gas, or a combination of such gases; or

5.3.1.2 On and after July 1, 2015, operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or

5.3.1.3 On and after July 1, 2015, operators shall install and properly operate an emission control system that reduces SO_2 emissions by at least 95% by weight; or limit exhaust SO_2 to less than or equal to 9 ppmv corrected to 3.0% O_2.

5.3.2 On and after July 1, 2015, liquid fuel shall be used only during a PUC quality natural gas curtailment period provided it contains no more than 15 ppm sulfur as determined by the test method specified in Section 6.2.7. An operator shall comply with the recordkeeping requirement of Section 6.1.3. In lieu of testing the sulfur content of liquid fuel, an operator may demonstrate compliance with the 15 ppm sulfur content by obtaining a copy of the fuel sulfur content specification data from the fuel manufacturer or vendor.

5.4 Start-Up and Shutdown Requirements

The applicable emission limits of Sections 5.1 and 5.2.1.2 shall not apply during start-up or shutdown provided an operator complies with the requirements specified below.

5.4.1 For units not equipped with a NOx exhaust control, the duration of each start-up and each shut down shall not exceed one hour, except as provided in Section 5.4.4.

5.4.2 For units equipped with a NOx exhaust control, the duration of each start-up and each shut down shall not exceed two hours, except as provided in Section 5.4.4.

5.4.3 The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown.

5.4.4 The APCO, ARB, and EPA may approve a longer start-up or shutdown duration than the duration specified in Section 5.4.1 or 5.4.2 (as applicable), if an operator submits an application for a Permit to Operate or Permit-Exempt Equipment Registration which provides a justification for the requested additional duration.

5.4.4.1 The maximum allowable duration of start-up or shutdown will be determined by the APCO, ARB, and EPA.

5.4.4.2 At a minimum, a justification for increased start-up or shutdown duration shall include the following:

5.4.4.2.1 A clear identification of the control technologies or strategies to be utilized; and

5.4.4.2.2 A description of what physical conditions prevail during start-up or shutdown periods that prevent the controls from being effective; and

5.4.4.2.3 A reasonably precise estimate as to when the physical conditions will have reached a state that allows for the effective control of emissions; and

5.4.4.2.4 A detailed list of activities to be performed during start-up or shutdown and a reasonable explanation for the length of time needed to complete each activity; and

5.4.4.2.5 A description of the material process flow rates and system operating parameters, etc., the operator plans to evaluate during the process optimization; and an explanation of how the activities and process flow affect the operation of the emissions control equipment; and

5.4.4.2.6 Basis for the requested additional duration of start-up or shutdown.

5.4.5 Permit to Operate (PTO) changes solely to include start-up or shutdown conditions may be exempt from Best Available Control Technology (BACT) and emission offset requirements if the PTO changes meet the requirements of Rule 2201 (New or Modified Stationary Source Review Rule) Section 4.2 (BACT Exemptions) and Rule 2201 Section 4.6 (Offset Exemptions).

5.5 Monitoring Provisions

5.5.1 For units subject to the emission limits of Section 5.1 the operator shall;

5.5.1.1 Monitor, at least once a month, the operational characteristics recommended by the manufacturer and approved by the APCO; and

5.5.1.2 Tune the unit at least twice per calendar year, (from four to eight months apart) using a qualified technician in accordance with the procedure described in Rule 4304 (Equipment Tuning Procedure for Boilers, Steam Generators, and Process Heaters). If the unit does not operate throughout a continuous six-month period within a calendar year, only one tune-up is required for that calendar year. No tune-up is required for any unit that is not operated during that calendar year; 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. In lieu of tuning the unit, operators shall monitor the emissions with a portable NOx analyzer and adjust the unit's operating parameters accordingly to assure compliance with the emission limits of this rule.

5.5.2 The operator of any unit limited to the annual heat input specified in Section 5.2.1 or Section 5.2.2 shall install and maintain an operational non-resettable, totalizing mass or volumetric flow meter in each fuel line to each unit. Volumetric flow measurements shall be periodically compensated for temperature and pressure. A master meter, which measures fuel to all units in a group of similar units, may satisfy these

requirements if approved by the APCO in writing. The cumulative annual fuel usage may be verified from utility service meters, purchase or tank fill records, or other acceptable methods, as approved by the APCO.

5.5.3 Monitoring SOx Emissions

5.5.3.1 Operators complying with Section 5.3.1.3 by installing and operating a control device with 95% SOx reduction shall propose the key system operating parameters and frequency of the monitoring and recording. The monitoring option proposed shall be submitted for approval by the APCO.

5.5.3.2 Operators complying with Sections 5.3.1.1 or 5.3.1.2 shall provide an annual fuel analysis to the District unless a more frequent sampling and reporting period is included in the Permit To Operate or Equipment Registration condition. Sulfur analysis shall be performed in accordance with the test methods in Section 6.2.

5.6 Compliance Determination

5.6.1 For the purposes of certification, the operator of any unit shall have the option of demonstrating compliance with either the applicable heat input emission limits (lb/MMBtu) or the concentration emission limits (ppmv) specified in Section 5.1. The emission limits selected to demonstrate compliance shall be specified in the Permit to Operate or Permit-Exempt Equipment Registration. The emission limit selected in Section 5.1 shall also be specified in the source test proposal pursuant to Rule 1081 (Source Sampling).

5.6.2 All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate or Permit-Exempt Equipment Registration.

5.6.3 Unless otherwise specified in the Permit to Operate or Permit-Exempt Equipment Registration no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0.

5.6.4 Notwithstanding the requirements of Section 5.6.3, for units with a cyclical firing period that routinely interrupts fuel flow as part of its normal operation, source testing may commence sooner than specified in Section 5.6.3 and continue through its normal cyclical firing period.

5.6.5 For emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical

limitation of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit.

6.0 Administrative Requirements

6.1 Recordkeeping

The records required by Sections 6.1.1 through 6.1.5 shall be maintained, and retained for five calendar years. The records shall be made available to the APCO, ARB, and EPA upon request. Failure to maintain records or information contained in the records that demonstrates noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

6.1.1 The operator of any unit limited to the annual heat input specified in Section 5.2.1 or Section 5.2.2 shall record the amount of fuel use, at least once a month for each unit, or for a group of units as specified in Section 5.5.2. On and after the compliance schedule specified in Section 7.0 Table 3, any unit that exceeds the annual heat input limit specified in Section 5.2.1 or Section 5.2.2, shall be brought into full compliance with this rule as specified in Section 7.3.

6.1.2 The operator of any unit subject to the applicable requirements of Sections 5.2.1.1, 5.5.1.1, and 5.5.1.2 shall maintain records to verify that tune-up and monitoring of the operational characteristics of the unit have been performed.

6.1.3 Operators who operate a unit on liquid fuel during PUC-quality natural gas curtailment period shall record the sulfur content of the fuel, amount of fuel used, and duration of the natural gas curtailment period.

6.1.4 The operator performing start-up or shutdown of a unit shall keep records of the duration of start-up or shutdown that exceed the applicable requirements of Sections 5.4.1 or 5.4.2.

6.1.5 Tree Nut Pasteurizers Operations and Maintenance Records

The operator of a tree nut pasteurizer shall maintain operation and maintenance records that demonstrate operation of the tree nut pasteurizer is within the limits of the manufacturer's specification and maintenance according to manufacturer's recommendation or APCO-approved alternative procedures.

6.1.5.1 Operations records shall be maintained for the days on which the tree nut pasteurizer is operated.

6.1.5.2 The operator shall keep maintenance records that verify that maintenance was performed in accordance with manufacturer's specifications or APCO-approved alternative procedures.

6.1.5.3 A copy of the manufacturer's operation specifications and maintenance instruction manual or APCO-approved alternative procedures shall be maintained on-site during normal business hours.

6.1.5.4 If the manufacturer's operation specifications or maintenance instruction manual are not available, the operator of a tree nut pasteurizer shall submit alternative operation or maintenance procedures for approval by the APCO by November 1, 2011 or as part of the Authority to Construct application, whichever is later.

6.1.5.5 The operator of a tree nut pasteurizer shall maintain records that demonstrate that the fuel used to fire the pasteurizer is LPG or PUC quality natural gas.

6.2 Test Methods

The following test methods shall be used unless otherwise approved by the APCO, ARB, and EPA.

6.2.1 Oxides of nitrogen (ppmv) – EPA Method 7E, or ARB Method 100.

6.2.2 Carbon monoxide (ppmv) – EPA Method 10, or ARB Method 100.

6.2.3 Stack gas oxygen – EPA Method 3 or 3A, or ARB Method 100.

6.2.4 NOx Emission Rate (Heat Input Basis) – EPA Method 19.

6.2.5 Stack gas velocities – EPA Method 2.

6.2.6 Stack gas moisture content – EPA Method 4.

6.2.7 Sulfur content of liquid fuel – American Society for Testing and Materials (ASTM) D 6920-03 or ASTM D 5453-99.

6.2.8 Determination of total sulfur as hydrogen sulfide (H2S) content – EPA Method 11 or EPA Method 15, as appropriate.

6.2.9 Oxides of sulfur – EPA Method 6C, EPA Method 8, or ARB Method 100.

6.2.10 The SOx emission control system efficiency shall be determined using the following:

$$\% \text{ Control Efficiency} = [\ (C_{SO2,\ inlet} - C_{SO2,\ outlet}) / C_{SO2,\ inlet}\ ] \text{ X } 100$$

Where:

$C_{SO2,\ inlet}$ = concentration of SOx (expressed as SO_2) at the inlet side of the SOx emission control system, in lb/dscf

$C_{SO2,\ outlet}$ = concentration of SOx (expressed as SO_2) at the outlet side of the SOx emission control system, in lb/dscf

6.3 Compliance Demonstration

6.3.1 The operator shall conduct an initial source test at the time of installation and/or modification for each non-certified unit or each non-certified retrofit control technology to demonstrate compliance with the applicable certification emission limits in Section 5.1. Units demonstrating compliance are eligible for certification under the provisions of Section 9.0.

6.3.2 Source testing of a certified unit or certified retrofit control technology, as defined in Section 3.0, is not required provided the operator complies with the requirements of Sections 6.3.2.1 and 6.3.2.2.

6.3.2.1 Operate the unit within range of operating parameters specified in the APCO-approved certification document.

6.3.2.2 Operate and maintain the unit in accordance with the manufacturer's instructions and conditions specified in the APCO-approved certification document.

6.3.3 A unit or retrofit control technology that loses its certification status shall be source tested within 60 days after the date the certification status is lost to demonstrate compliance with the emission limits of this rule. The manufacturer or operator may request re-certification of a unit or retrofit

control technology that lost its certification status provided the provisions of Section 9.0 are met.

6.4 Equipment Registration Requirement

Except for units that require a Permit to Operate pursuant to Rule 2020 (Exemptions), the operator shall register with the District any unit subject to this rule no later than the applicable date shown in Table 3, in accordance with Rule 2250 (Permit-Exempt Equipment Registration).

7.0 Compliance Schedule

7.1 An operator with multiple units at a stationary source shall comply with this rule in accordance with the schedule specified in Table 3. An operator with only one unit at a stationary source shall comply with the schedule specified in Table 3, Group 2.

TABLE 3 - Compliance Schedule

Quantity of Units to be in Compliance at a Stationary Source	Authority to Construct	Permit-Exempt Equipment Registration	Full Compliance
Group 1: 50% or more of the total number of units subject to this rule on July 1, 2008, excluding Group 3	January 1, 2008	April 1, 2008	July 1, 2008
Group 2: 100% of the total number of units subject to this rule on and after July 1, 2009, excluding Group 3	January 1, 2009	April 1, 2009	July 1, 2009
Group 3: 100%of the total number of units subject to Section 5.2.3 and 100% of the total number of units located at a school, subject to this rule on and after July 1, 2015	January 1, 2015	April 1, 2015	July 1, 2015

Units are considered to be subject to this rule if the rule is applicable to the units pursuant to Section 2.0 and the units are not exempt pursuant to Section 4.0.

7.2 As shown in Table 3, the column labeled:

7.2.1 "Authority to Construct" identifies the date by which the operator shall submit an Application for Authority to Construct for each unit subject to this rule and which is required to have a Permit to Operate (PTO) pursuant to Rule 2020 (Exemptions).

7.2.2 "Permit-Exempt Equipment Registration" identifies the date by which the owner or operator shall submit a complete Permit-Exempt Equipment Registration application for each unit subject to the registration requirements of Rule 2250 (Permit-Exempt Equipment Registration).

7.2.3 "Full Compliance" identifies the date by which the owner shall demonstrate that each unit is in compliance with this rule regardless of whether the unit requires a Permit to Operate or a Permit-Exempt Equipment Registration.

7.3 Any unit that becomes subject to the emission limits of this rule as a result of exceeding the annual heat input limit specified in Section 5.2.1 or Section 5.2.2, shall be in compliance with the emission limits specified in Section 5.1 Table 1 on and after the date the annual heat input limit is exceeded.

7.4 When an existing unit, that is subject to Section 5.2, is replaced, the replacement unit shall be certified, according to Section 9.0, or source tested in accordance with the test methods in Section 6.2 to comply with the applicable emission limits specified in Section 5.1, on and after the date of initial operation.

8.0 Calculations

8.1 All ppmv emission limits specified in Section 5.1 are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 3.00 percent oxygen as follows:

$$[ppm\,NOx]_{corrected} = \frac{17.95\%}{20.95\% - [\%O2]_{measured}}\ x\ [ppm\,NOx]_{measured}$$

$$[ppm\,CO]_{corrected} = \frac{17.95\%}{20.95\% - [\%O2]_{measured}}\ x\ [ppm\,CO]_{measured}$$

8.2 All pounds per million Btu NOx emission rates shall be calculated as pounds of nitrogen dioxide per million Btu of heat input (hhv).

9.0 Equipment Certification Requirements

9.1 To be considered for APCO certification, the manufacturer or operator shall comply with the following requirements:

9.1.1 Certification shall be based upon the emission source testing results of a specific unit, or a randomly selected unit of each model, or retrofit control technology.

9.1.2 A source testing protocol shall be submitted in accordance with the provisions of Rule 1081 (Source Sampling) for approval by the APCO prior to conducting the source test. The source testing protocol approved by the APCO shall be strictly adhered to during certification source testing.

9.1.3 Source testing shall be conducted over the range of operating parameters for which the unit(s) or retrofit control technology will be operated.

9.1.4 The source testing results shall demonstrate compliance with the emission limits of this rule for each model of unit(s), or retrofit control technology to be certified.

9.1.5 The source testing procedure and reports shall be prepared by an ARB-approved independent testing laboratory, and shall contain all the elements identified in the APCO-approved source testing protocol.

9.1.6 Source testing shall be conducted no more than 90 days prior to the date of submission of request for certification by the APCO.

9.2 The manufacturer or operator requesting certification shall submit to the APCO the following information:

9.2.1 Copies of the source testing results conducted pursuant to the requirements of Section 9.1, and other pertinent technical data to demonstrate compliance with the emission limits of this rule.

9.2.2 The applicant shall sign and date the statement attesting to the accuracy of all information in the statement.

9.2.3 Name and address of the unit manufacturer or operator, brand name of the unit or retrofit control technology, model number, rated heat input as it appears in the unit nameplate, and description of model of unit(s), or retrofit control technology being certified.

9.3 The APCO will only approve an application for certification to the extent that the requirements of Sections 9.1 through 9.2 are met and the source testing results demonstrate that the emission limits of this rule are met.

9.4 The APCO-approved certification is valid only for the range of operating parameters for which certification is issued.

9.5 A certified unit or a certified retrofit control technology that is operated outside the APCO-certified range of operating parameters shall lose its certification status. A unit or retrofit control technology that loses its certification status shall comply with the requirements of Section 6.3.3.

9.6 The APCO shall publish a list of certified units or certified retrofit control technology after the certification process is completed.

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RULE 4308 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS – 0.075 MMBtu/hr to less than 2.0 MMBtu/hr (Adopted October 20, 2005, Amended December 17, 2009, Amended November 14, 2013)

1.0 Purpose

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx) and carbon monoxide (CO) from boilers, steam generators, process heaters and water heaters.

2.0 Applicability

This rule applies to any person who supplies, sells, offers for sale, installs, or solicits the installation of any boiler, steam generator, process heater or water heater with a rated heat input capacity greater than or equal to 75,000 British thermal units per hour and less than 2,000,000 British thermal units per hour.

3.0 Definitions

3.1 APCO: the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District, or any person authorized to act on behalf of the APCO.

3.2 Boiler, Steam Generator or Water Heater: any external combustion equipment fired with any liquid or gaseous fuel to produce hot water or steam.

3.3 British Thermal Unit (Btu): the amount of heat required to raise the temperature of one pound of water from 59^{o} F to 60^{o} F at one atmosphere.

3.4 Certified Retrofit Kit: any burner, ancillary controls or blowers that have been demonstrated to comply with the provisions of this rule in Section 6.1, on a retrofit basis, on a particular model of unit.

3.5 District: as defined in Rule 1020 (Definitions).

3.6 EPA: United States Environmental Protection Agency.

3.7 Higher Heating Value (hhv): the total heat liberated per mass of fuel burned (Btu per pound), when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

3.8 Hot Water Pressure Washer: for purposes of this rule, high-pressure cleaning machine in which the hot water discharge line (spray nozzle) is hand supported and intended for commercial and industrial applications.

3.9 Humidifier: a device or system that uses an air stream heated by a direct contact combustion process in combination with a water spray to produce warm air of high humidity in order to maintain or increase the moisture content of the material being processed or conveyed by the air stream. For the purpose of this rule, such a device is not considered a boiler, steam generator or process heater.

3.10 Instantaneous Water Heater: a water heater with a rated heat input capacity per hour that heats water only when it flows through a heat exchanger.

3.11 Manufactured Home: as defined in 42 United States Code Section 5402 and California Health and Safety Code Section 18007.

3.12 NOx Emissions: the sum of oxides of nitrogen (NOx) in the flue gas, collectively expressed as nitrogen dioxide.

3.13 Process Heater: any combustion equipment fired on gaseous or liquid fuel, which transfers heat from combustion gases to water or process streams. Process heaters exclude kilns or ovens used for drying, baking, cooking, calcining, heat treating, or vitrifying.

3.14 PUC Quality Natural Gas: California Public Utility Commission Quality Natural Gas is any gaseous fuel, gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume.

3.15 Rated Heat Input: the heat input capacity, usually expressed as million Btu per hour (MMBtu/hr), usually specified on the nameplate of the unit. If the unit has been physically modified such that its maximum heat input differs from what is specified on the nameplate, the modified maximum heat input shall be considered as the rated heat input and made enforceable by Permit to Operate or Registration Certificate.

3.16 Recreational Vehicle: any vehicle used for recreational purposes and designed to include a water heater and is required to be licensed to be driven or moved on the highways of California.

3.17 SCAQMD: South Coast Air Quality Management District.

3.18 Unit: any boiler, process heater, or water heater as defined in this rule.

4.0 Exemptions

The provisions of this rule shall not apply to:

4.1 Units installed in manufactured homes;

4.2 Units installed in recreational vehicles; and

4.3 Hot water pressure washers.

5.0 Requirements

5.1 Until December 31, 2014, a person shall not supply, sell, offer for sale, install or solicit the installation of any boiler, process heater or water heater unless it has been certified pursuant to Section 6.1 and complies with Table 1 NOx limits and CO limits specified in Section 5.3.

5.2 On and after January 1, 2015, a person shall not supply, sell, offer for sale, install or solicit the installation of any boiler, process heater or water heater unless it has been certified pursuant to Section 6.1 and complies with Table 2 NOx limits and CO limits specified in Section 5.3.

5.3 Units with a rated heat input capacity of 0.4 MMBtu/hr to less than 2.0 MMBtu/hr shall not exceed the CO limit of 400 ppm at 3% stack gas oxygen by volume on a dry basis.

Table 1
Emission Limits (Effective until December 31, 2014)

Type and Size of Unit, in MMBtu/hr	NOx Limit (at 3% stack gas oxygen by volume on a dry basis)	
	PUC Gas	Non PUC Gas or Liquid
	lb/MMBtu of heat input (ppmv)	lb/MMBtu of heat input (ppmv)
Units greater than or equal to 0.075 but less than or equal to 0.4, except as specified below	0.024 (20)	0.093 (77)
Units greater than 0.4 but less than 2.0, except as specified below	0.024 (20)	0.036 (30)
Instantaneous water heaters and pool heaters greater than or equal to 0.075 but less than or equal to 0.4	0.068 (55)	0.093 (77)
Instantaneous water heaters and pool heaters greater than 0.4 but less than 2.0	0.024 (20)	0.036 (30)

Table 2 Emission Limits (Effective on and after January 1, 2015)		
Type and Size of Unit, in MMBtu/hr	NOx Limit (at 3% stack gas oxygen by volume on a dry basis)	
	PUC Gas	Non PUC Gas or Liquid
	lb/MMBtu of heat input (ppmv)	lb/MMBtu of heat input (ppmv)
Units greater than or equal to 0.075 but less than or equal to 0.4, except as specified below	0.024 (20)	0.093 (77)
Units greater than 0.4 but less than 2.0, except as specified below	0.024 (20)	0.036 (30)
Instantaneous water heaters greater than or equal to 0.075 but less than or equal to 0.4	0.024 (20)	0.093 (77)
Instantaneous water heaters greater than 0.4 but less than 2.0	0.024 (20)	0.036 (30)
Pool heaters greater than or equal to 0.075 but less than or equal to 0.4	0.068 (55)	0.093 (77)
Pool heaters greater than 0.4 but less than 2.0	0.024 (20)	0.036 (30)

6.0 Administrative Requirements

6.1 Methods of Emission Certification

Certified emissions levels shall be demonstrated by an emission certification approved under either of the following:

6.1.1 The District's certification program as described in Section 6.2 and 6.3 of this rule.

6.1.2 The SCAQMD Certification List for Rule 1146.2.

6.1.3 Other emission certification programs approved by the EPA and APCO.

6.2 District Certification Program Specifications – Unit Manufacturer

6.2.1 For each new unit or retrofit kit to be certified, the manufacturer shall obtain from an independent testing laboratory, a certification source test verifying compliance with the emission limits in Section 5.0. The results shall be submitted with the compliance report information in Section 6.3.

6.2.2 Source tests shall be conducted on a randomly selected unit no more than 90 days prior to the date of proposed certification of the model by the District.

6.2.3 Tests shall be conducted and reports shall be prepared according to District Rule 1081 (Source Sampling) and, for natural gas-fired units, the "Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers," Protocol, SCAQMD, Source Testing and Engineering Branch, Applied Science and Technology.

6.2.4 District certification for a manufacturer shall be valid for three years from the date of certification.

6.2.5 The District shall publish and maintain a list of certified emissions for the tested unit.

6.3 Compliance Report

The compliance report shall be submitted to the District and shall contain the following information:

6.3.1 Name and address of manufacturer,

6.3.2 Brand name,

6.3.3 Model number, as it appears on the permanent nameplate, and

6.3.4 Description of the model unit or retrofit kit being certified, including burner type and rated heat input capacity.

6.3.5 A report on the certification test specified in Section 6.2.3.

6.3.6 A signed and dated statement attesting, under penalty of perjury, to the accuracy of all statements and information in the compliance report.

6.4 Identification of Compliant Units

The manufacturer subject to Section 6.2 shall display the model number and the certification status, as determined in Section 6.2 of this rule, of an applicable unit or retrofit kit on the permanent nameplate of the unit or kit. If packaging obscures the permanent nameplate, the model number and certification status shall also appear on the packaging.

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RULE 4309 DRYERS, DEHYDRATORS, AND OVENS (Adopted December 15, 2005)

1.0 Purpose

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx) and carbon monoxide (CO) from dryers, dehydrators, and ovens.

2.0 Applicability

This rule applies to any dryer, dehydrator, or oven that is fired on gaseous fuel, liquid fuel, or is fired on gaseous and liquid fuel sequentially, and the total rated heat input for the unit is 5.0 million British thermal units per hour (5.0 MMBtu/hr) or greater.

3.0 Definitions

3.1 APCO: as defined in Rule 1020 (Definitions).

3.2 ARB: California Air Resources Board.

3.3 Bake: to cook food in a unit with dry heat.

3.4 Btu: British thermal unit, the amount of heat required to raise the temperature of one pound of water from 59°F to 60°F at one atmosphere.

3.5 CEMS: continuous emission monitoring system.

3.6 CFR: the Code of Federal Regulations.

3.7 Charbroiler: as defined in Rule 4692 (Commercial Charbroiling).

3.8 CO: carbon monoxide.

3.9 Dehydrator: a device that drives free water from products like fruits, vegetables, and nuts, at an accelerated rate without damage to the product.

3.10 Dryer: a device in which material is dried or cured in direct contact with the products of combustion.

3.11 Fry: to cook food over direct heat in oil or fat.

3.12 Gaseous Fuel: a fuel that is a gas at standard conditions.

3.13 Heat Input: the heat, on an hhv basis, released due to fuel combustion in a unit, not including the sensible heat of incoming combustion air and fuel.

3.14 Higher Heating Value (hhv): the total heat liberated per mass of fuel burned, in Btu per pound, when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

3.15 Liquid Fuel: a fuel that is a liquid at standard conditions.

3.16 MMBtu: one million (1,000,000) British thermal units.

3.17 Normal Business Hours: the time period Monday through Friday, 8:00 am to 5:00 pm.

3.18 NOx: the sum of oxides of nitrogen in the flue gas, expressed as nitrogen dioxide (NO_2).

3.19 Oven: a chamber in which material is dried or cured in direct contact with the products of combustion.

3.20 Oxygen Correction Factor: the factor used to adjust measured emission readings to an emission rate at a reference oxygen (O_2) level. For purposes of this rule:

3.20.1 For units operating at measured O_2 concentrations 19.0 percent by volume (19.0 vol% O_2) or less, emission concentrations shall be corrected to 19.0 vol% O_2 using the appropriate equation in Section 8.1.

3.20.2 For units operating at measured O_2 concentrations greater than 19.0 vol% O_2, the corrected NOx or CO concentration is equal to the measured NOx or CO concentration.

3.21 Parts Per Million by Volume (ppmv): as defined in Rule 1020 (Definitions).

3.22 PTO: Permit to Operate issued by the District.

3.23 Public Utilities Commission (PUC) Quality Natural Gas: a gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas (at least 80% methane by volume) as specified in PUC General Order 58-A.

3.24 PUC Quality Natural Gas Curtailment: a shortage in the supply of PUC quality natural gas, due solely to supply limitations or restrictions in distribution pipelines by the utility supplying the gas, and not due to the cost of natural gas.

3.25 Rated Heat Input: the heat input capacity specified on the nameplate of the unit. For the purposes of this rule, if the unit has been physically modified such that its

maximum heat input differs from what is specified on the nameplate, the modified maximum heat input shall be considered as the rated heat input and made enforceable by PTO.

3.26 Re-ignition: the relighting of a unit after an unscheduled and unavoidable interruption or shut off of the fuel flow or electrical power, for a period of less than 30 minutes, due to reasons outside the control of the operator.

3.27 Shutdown: the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off.

3.28 Solid Fuel: a fuel that is a solid at standard conditions.

3.29 Standard Conditions: as defined in Rule 1020 (Definitions).

3.30 Start-up: the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation.

3.31 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.32 US EPA: the United States Environmental Protection Agency.

3.33 Unit: a dryer, dehydrator, or oven, or any combination of such devices, with one or more burners and one or more exhaust stacks, that are collectively operated as the source(s) of heat to dry or cure a product. Associated VOC control systems, such as thermal oxidizers or afterburners, are not considered part of the unit for purposes of this rule.

4.0 Exemptions

4.1 The requirements of this rule shall not apply to the following:

4.1.1 Column-type or tower dryers used to dry grains, or tree nuts. This exemption does not apply to tunnel dryers, belt dryers, or tray dryers.

4.1.2 Units used to pre-condition onions or garlic prior to dehydration.

4.1.3 Smokehouses or units used for roasting.

4.1.4 Units used to bake or fry food for human consumption.

4.1.5 Charbroilers.

4.1.6 Units used to dry lint cotton or cotton at cotton gins.

4.1.7 Units with all of the following characteristics:

4.1.7.1 No stack for the exhaust gas, and

4.1.7.2 One or more sides open to the atmosphere.

4.2 The requirements of this rule shall not apply to units subject to any of the following rules:

4.2.1 Rule 4305 (Boilers, Steam Generators, and Process Heaters – Phase 2)

4.2.2 Rule 4306 (Boilers, Steam Generators, and Process Heaters – Phase 3)

4.2.3 Rule 4307 (Small Boilers, Steam Generators, and Process Heaters – 2.0 MMBtu/hr to 5.0 MMBtu/hr)

4.2.4 Rule 4351 (Boilers, Steam Generators, and Process Heaters – Phase 1)

4.3 The requirements of Section 5.1 and Section 5.2 shall not apply to a unit when burning any fuel other than PUC quality natural gas during PUC quality natural gas curtailment provided all of the following conditions are met:

4.3.1 Fuels other than PUC quality natural gas are burned no more than 168 cumulative hours in a calendar year plus 48 hours per calendar year for equipment testing, as limited by PTO.

4.3.2 NOx emission shall not exceed 30 ppmv referenced at dry stack conditions and adjusted using the oxygen correction factor as defined in Section 3.0 or 0.215 lb/MMBtu. Demonstration of compliance with this limit shall be made by source testing, CEMS, an APCO-approved Alternate Monitoring System, or an APCO-approved portable NOx analyzer.

5.0 Requirements

All ppmv emission limits specified in this section are referenced at dry stack gas conditions and adjusted using the oxygen correction factor as defined in Section 3.0.

5.1 Dehydrators shall be fired exclusively on PUC quality natural gas, except during periods of PUC quality natural gas curtailment.

5.1.1 All dehydrators shall be operated and maintained according to manufacturer's specifications or APCO-approved alternative procedures.

5.1.2 Operation and maintenance records and manufacturer's specifications/APCO-approved alternative procedures shall be maintained in accordance with Section 6.1.3.

5.1.3 During PUC quality natural gas curtailment, the dehydrator shall be in compliance with the provisions of Section 4.3.

5.2 For any unit subject to this rule, except dehydrators, NOx emissions and CO emissions shall not exceed the limits specified in Table 1 on and after the full compliance schedules specified in Section 7.1, Table 2 compliance schedule, or Section 7.3, as appropriate.

Table 1 NOx and CO Limits (Referenced at dry stack conditions and adjusted using the oxygen correction factor as defined in Section 3.0)

Process Description	NOx Limit (in ppmv)		CO Limit (in ppmv)	
	Gaseous Fuel Fired	Liquid Fuel Fired	Gaseous Fuel Fired	Liquid Fuel Fired
Asphalt/Concrete Plants	4.3	12.0	42	64
Milk, Cheese, and Dairy Processing < 20 MMBtu/hr	3.5	3.5	42	42
Milk, Cheese, and Dairy Processing ≥ 20 MMBtu/hr	5.3	5.3	42	42
Other processes not described above	4.3	4.3	42	42

5.3 Start-up and Shutdown Provisions

The applicable emission limits in Section 5.2 shall not apply during start-up or shutdown provided an operator complies with the requirements specified below.

5.3.1 For units not equipped with a NOx exhaust control system, the duration of each start-up and each shutdown shall not exceed one hour, except as provided in Section 5.3.3.

5.3.2 For units equipped with a NOx exhaust control system, units shall meet both of the following requirements:

5.3.2.1 The NOx exhaust control system shall be in operation and emissions shall be minimized as much as technologically feasible during start-up or shutdown.

5.3.2.2 The duration of each start-up and each shutdown shall not exceed two hours, except as provided in Section 5.3.3.

5.3.3 Notwithstanding the requirements of Section 5.3.1 or Section 5.3.2, the APCO, ARB, and US EPA may approve a longer start-up or shutdown

duration, if an operator submits an application for a PTO condition which provides a justification for the requested additional duration.

5.3.3.1 The maximum allowable duration of start-up or shutdown will be determined by the APCO, ARB, and US EPA.

5.3.3.2 At a minimum, a justification for increased start-up or shutdown duration shall include the following:

5.3.3.2.1 Clear identification of the control technologies or strategies to be utilized; and

5.3.3.2.2 Description of what physical conditions prevail during start-up or shutdown periods that prevent the controls from being effective; and

5.3.3.2.3 Reasonably precise estimate as to when the physical conditions will have reached a state that allows for the effective control of emissions; and

5.3.3.2.4 Detailed list of activities to be performed during start-up or shutdown and a reasonable explanation for the length of time needed to complete each activity; and

5.3.3.2.5 Description of the material process flow rates and system operating parameters the operator plans to evaluate during the process optimization and an explanation of how the activities and process flow affect the operation of the emissions control equipment; and

5.3.3.2.6 Basis for the requested additional duration of start-up or shutdown.

5.3.4 PTO changes solely to include start-up or shutdown conditions may be exempt from the Best Available Control Technology (BACT) and emission offset requirements if the PTO change meets the requirements of Rule 2201 (New and Modified Stationary Source Review Rule) Section 4.2 (BACT Exemptions) and Rule 2201 Section 4.6 (Emission Offset Exemptions).

5.4 Monitoring Requirements

5.4.1 Except for dehydrators, the operator of any unit subject to the applicable emission limits in Sections 4.3.2, or 5.2 shall monitor emissions using one of the techniques specified in Sections 5.4.1.1 or 5.4.1.2.

5.4.1.1 Install and maintain an APCO-approved CEMS for NOx, and oxygen that meets the requirements of Sections 5.4.1.1.1 through 5.4.1.1.6.

5.4.1.1.1 40 CFR Part 51, and

5.4.1.1.2 40 CFR Parts 60.7 and 60.13 (except subsection h), and

5.4.1.1.3 40 CFR Part 60 Appendix B (Performance Specifications), and

5.4.1.1.4 40 CFR Part 60 Appendix F (Quality Assurance Procedures), and

5.4.1.1.5 The applicable provisions of District Rule 1080 (Stack Monitoring).

5.4.1.1.6 The APCO shall only approve CEMS that meets the requirements of Sections 5.4.1.1.1 through 5.4.1.1.5 of this rule.

5.4.1.2 Install and maintain an alternate emission monitoring method that meets the requirements of Sections 5.4.1.2.1 through 5.4.1.2.3 of this rule.

5.4.1.2.1 The APCO shall not approve an alternative monitoring system unless it is documented that continued operation within ranges of specified emissions-related performance indicators or operational characteristics provides a reasonable assurance of compliance with applicable emission limits.

5.4.1.2.2 The approved alternate emission monitoring system shall monitor operational characteristics necessary to assure compliance with the emission limit. Operational characteristics shall be one or more of the following:

5.4.1.2.2.1 Periodic NOx exhaust emission concentrations,

5.4.1.2.2.2 Periodic exhaust oxygen concentration,

5.4.1.2.2.3 Flow rate of reducing agent added to exhaust,

5.4.1.2.2.4 Catalyst inlet and exhaust temperature,

5.4.1.2.2.5 Catalyst inlet and exhaust oxygen concentration,

5.4.1.2.2.6 Periodic flue gas recirculation rate,

5.4.1.2.2.7 Other surrogate operating parameter(s) that demonstrate compliance with the emission limit.

5.4.1.2.3 The operator shall source test over the proposed range of surrogate operating parameter(s) to demonstrate compliance with the applicable emission limits.

5.4.2 Operators of a dehydrator shall maintain records that demonstrate, to the satisfaction of the APCO, ARB, and US EPA that the dehydrator is:

5.4.2.1 Fired exclusively on PUC quality natural gas, except during PUC quality natural gas curtailment, and

5.4.2.2 Properly operated and maintained according to manufacturer's specifications or APCO-approved alternative procedures.

5.4.3 Operators shall maintain records of emissions and emissions monitoring systems pursuant to Section 6.1.

5.5 Compliance Determination

5.5.1 All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the PTO.

5.5.2 Except for as provided in Section 5.5.3, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0.

5.5.3 Notwithstanding the requirements of Section 5.5.2, the APCO, ARB, and US EPA may approve a longer or shorter period before compliance

determination, if an operator submits an application for a PTO condition which provides a justification for the requested duration.

5.5.4 All CEMS emissions measurements shall be averaged over a period of 15 consecutive minutes to demonstrate compliance with the applicable emission limits of this rule. Any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits of this rule shall constitute a violation of this rule.

5.5.5 For emissions monitoring pursuant to Section 5.4.1.2.2.1, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the 15-consecutive-minute period.

5.5.6 For emissions source testing performed pursuant to Section 6.3.1 to determine compliance with an applicable emission limit of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the unit, even if the averaged emissions of all three test runs is less than the applicable limit.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 For operators using CEMS to monitor emissions, the following records shall be kept on a daily basis:

6.1.1.1 Total hours of operation.

6.1.1.2 Type and quantity of fuel used during operations.

6.1.1.3 NOx emissions as tested.

6.1.1.4 Stack gas oxygen content.

6.1.1.5 NOx emissions corrected to dry stack conditions and adjusted using the oxygen correction factor shall be reported in ppmv.

6.1.1.6 CO emissions corrected to dry stack conditions and adjusted using the oxygen correction factor shall be reported in ppmv.

6.1.2 For operators using an alternate emission monitoring system, the following records shall be kept on a periodic basis:

6.1.2.1 Total hours of operation.

6.1.2.2 Type and quantity of fuel used during operations.

6.1.2.3 Measurement for each surrogate parameter.

6.1.2.4 Range of allowed values for each surrogate parameter.

6.1.2.5 The period for recordkeeping shall be specified in the PTO conditions.

6.1.3 The operator of a dehydrator shall maintain the following records:

6.1.3.1 Records that show the dehydrator is fired exclusively on PUC quality natural gas, except during PUC quality natural gas curtailment.

6.1.3.2 Operation and maintenance records that demonstrate operation of the dehydrator within the limits of the manufacturer's specification and maintenance according to manufacturer's recommendation or APCO-approved alternative procedures.

6.1.3.2.1 Operation records shall be maintained on a daily basis when the dehydrator is operating on that day.

6.1.3.2.2 The operator shall keep maintenance records that verify that maintenance was performed in accordance with manufacturer's specifications or APCO-approved alternative procedures.

6.1.3.3 A copy of the manufacturer's operation specifications and maintenance instruction manual or APCO-approved alternative procedures shall be maintained on-site during normal business hours.

6.1.3.4 If the manufacturer's operation specifications or maintenance instruction manual are not available, the operator of a dehydrator shall submit alternative operation or maintenance procedures for approval by the APCO and US EPA by July 1, 2006.

6.1.4 The operator of a unit subject to Section 5.2 and performing start-up or shutdown of that unit shall keep records of the duration of each start-up and each shutdown.

6.1.5 The operator of any unit subject to this rule and operated under the exemption of Section 4.3 shall:

6.1.5.1 Monitor and record, for each unit, the cumulative annual hours of operation on each fuel other than PUC quality natural gas during periods of natural gas curtailment and equipment testing.

6.1.5.2 The NOx emissions for each unit that is operated during periods of PUC quality natural gas curtailment shall be recorded, corrected to dry stack conditions and adjusted using the oxygen correction factor. NOx emissions shall be reported in ppmv.

6.1.5.3 Failure to maintain records required by Section 6.1.5.1 and Section 6.1.5.2 or information contained in the records that demonstrates noncompliance with the conditions for exemption under Section 4.3 will result in the loss of exempt status for the unit during PUC quality natural gas curtailment.

6.1.6 The records and manufacturer's specifications required by Sections 6.1.1 through 6.1.5 shall meet all of the following requirements.

6.1.6.1 The records shall be maintained for five (5) calendar years,

6.1.6.2 The records shall be made available on-site during normal business hours, and

6.1.6.3 The records shall be submitted to the APCO upon request.

6.1.7 Failure to maintain records or information contained in the records that demonstrates noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

6.2 Test Methods

The following test methods shall be used unless otherwise approved by the APCO and US EPA.

6.2.1 Fuel hhv shall be certified by third party fuel supplier or determined by:

6.2.1.1 ASTM D 240-87 or D 2382-88 for liquid hydrocarbon fuels;

6.2.1.2 ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels.

6.2.2 Oxides of nitrogen (ppmv) – US EPA Method 7E, or ARB Method 100.

6.2.3 Carbon monoxide (ppmv) – US EPA Method 10, or ARB Method 100.

6.2.4 Stack gas oxygen – US EPA Method 3 or 3A, or ARB Method 100.

6.2.5 Stack gas velocities – US EPA Method 2.

6.2.6 Stack gas moisture content – US EPA Method 4.

6.3 Compliance Demonstration

The operator with one or more units subject to this rule shall comply with the following requirements:

6.3.1 For purposes of demonstrating compliance, the operators of a dehydrator shall demonstrate that the unit meets the requirements of Section 5.4.2. No other requirement of Sections 6.3.2 through 6.3.9 shall apply for compliance determination of dehydrators.

6.3.2 Each unit subject to the requirements in Sections 4.3, or 5.2 shall be initially source tested to determine compliance with the applicable emission limits not later than the applicable full compliance schedule specified in Section 7.0. Thereafter, each unit subject to Section 5.2 emission limits shall be source tested at least once every 24 months. Units subject to Section 5.2 and operating less than 50 days per calendar year shall follow the source test frequency prescribed in Section 6.3.3.

6.3.3 For purposes of source testing, operators of a unit subject to Section 5.2 that operates less than 50 days per calendar year shall be initially source tested to determine compliance with the applicable emission limits not later than the applicable full compliance schedule specified in Section 7.0. Thereafter, the unit shall be tested at least once every 36 months.

6.3.4 Each exhaust stack of a unit subject to the requirements in Sections 4.3 or 5.2 shall be source-tested to demonstrate compliance with the applicable emission limits.

6.3.5 The APCO shall be notified according to the provisions of Rule 1081 (Source Sampling).

6.3.6 Emissions source testing shall be conducted with the unit operating either at conditions representative of normal operations or conditions specified in the PTO.

6.3.7 All test results for NOx and CO shall be reported in ppmv, corrected to dry stack conditions and adjusted using the oxygen correction factor.

6.3.8 For the purpose of determining compliance with an applicable emission limit, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply.

6.3.9 If two of the three runs specified by Section 6.3.8 individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the unit, even if the averaged emissions of all three runs is less than the applicable limit.

6.4 In addition to the provisions of Section 6.3, asphalt/concrete plants shall choose one of the following options for source testing:

6.4.1 Test the unit using locally mined aggregate in the dryer. If the source test using locally mined aggregate fails, the operator may re-run the source test using aggregate from a different source.

6.4.2 Test the unit using aggregate from a source different from the source used during normal operations.

6.4.3 Test the unit using a heat-absorbing material in the dryer, but no aggregate.

6.4.4 Test the unit with no material in the dryer.

7.0 Compliance Schedule

7.1 Group 1 and Group 2 units, as defined in Sections 7.1.1 through 7.1.3, shall be in compliance with applicable requirements of this rule according to the schedule listed in Table 2, except for asphalt/concrete plants and dehydrators. Asphalt/concrete plants shall follow the compliance schedule outlined in Section 7.3. Dehydrators shall follow the compliance schedule outlined in Section 7.4.

7.1.1 Operators with a single unit that becomes subject to this rule on December 15, 2005 shall comply with the compliance schedule for Table 2 Group 2 units.

7.1.2 For operators of multiple units that become subject to this rule on December 15, 2005, Table 2 Group 1 units are those units selected by the operator to be to meet the compliance schedule soonest. The number of units in this group must be at least 50.0% of the total number of units that subject to this rule, rounded up to the next highest integer, where required.

7.1.3 For operators of multiple units that become subject to this rule on December 15, 2005, Table 2 Group 2 units are the units subject to this rule and are not Table 2 Group 1 units.

Table 2 Compliance Schedule

Units to be in Compliance at a Stationary Source	Authority to Construct	Full Compliance
Group 1: 50% or more of the total number of units subject to this rule on December 15, 2005	January 1, 2007	December 1, 2007
Group 2: 100% of the total number of units subject to this rule on December 15, 2005	January 1, 2008	December 1, 2008

Units are considered to be subject to this rule if the rule is applicable to the units as defined in Section 2.0 and the units are not exempted in either Section 4.1 or Section 4.2.

7.2 As shown in Table 2, the column labeled:

7.2.1 "Authority to Construct" identifies the date by which the operator shall submit an Application for Authority to Construct for each unit subject to the rule that would require an Authority to Construct to order to comply with the requirements of this rule.

7.2.2 "Full Compliance" identifies the date by which the operator shall demonstrate that each unit is in compliance with this rule.

7.3 An operator of an asphalt/concrete unit subject to this rule shall meet the following compliance schedule.

7.3.1 The operator shall submit an Application for Authority to construct for each unit subject to the rule that would require an Authority to Construct in order to comply with the requirements of this rule by December 1, 2008.

7.3.2 The operator shall demonstrate that each unit subject to this rule is in full compliance with this rule by December 1, 2009.

7.4 An operator of a dehydrator subject to this rule shall be in compliance with this rule by July 1, 2006.

8.0 Calculations

8.1 If the measured O_2 is 19.0 vol% O_2 or less, all emission limits specified in Section 5.2 are referenced at dry stack gas conditions and 19.0 vol% O_2. Emission concentrations in ppmv shall be corrected 19.0 vol% O_2 as follows:

$$[\text{ppmvNOx}]_{corrected} = \frac{1.95\%}{20.95\% - [\%O_2]_{measured}} \times [\text{ppmvNOx}]_{measured}$$

$$[\text{ppmvCO}]_{corrected} = \frac{1.95\%}{20.95\% - [\%O_2]_{measured}} \times [\text{ppmvCO}]_{measured}$$

RULE 4311 FLARES (Adopted June 20, 2002; Amended June 15, 2006; Amended June 18, 2009; Amended December 17, 2020)

1.0 Purpose

To limit the emissions of volatile organic compounds (VOC), oxides of nitrogen (NOx), and sulfur oxides (SOx) from the operation of flares.

2.0 Applicability

This rule is applicable to operations involving the use of flares.

3.0 Definitions

3.1 Air-Assisted Flare: a combustion device where forced air is injected to promote turbulence for mixing and to provide combustion air.

3.2 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.3 Air Resources Board (ARB): as defined in Rule 1020 (Definitions).

3.4 Annual Throughput: the volume of vent gas, converted to heat input in million Btu (MMBtu), that is combusted in a flare in one calendar year.

3.5 British Thermal Unit (Btu): the amount of heat required to raise the temperature of one pound of water from 59^{o}F to 60^{o}F at one atmosphere.

3.6 Calendar Day: any day starting at twelve o'clock AM and ending at 11:59 PM.

3.7 Chemical Operations: facilities engaged in chemical production or distribution including fuel production.

3.8 Coanda Effect Flare: A flare in which the high pressure flare gas flows along a curved surface inspirating air into the gas to promote combustion.

3.9 Digester Operation: a facility that produces gas consisting of methane, carbon dioxide, and traces of other contaminant gases, from either mesophilic or thermophilic digestion of biodegradable waste.

3.10 Emergency: any situation or a condition arising from a sudden and reasonably unforeseeable and unpreventable event beyond the control of the operator. Examples include, but are not limited to, not preventable equipment failure, natural disaster, act of war or terrorism, or external power curtailment, excluding a power curtailment due to an interruptible power service agreement from a utility. A flaring event due to improperly designed equipment, lack of preventative maintenance, careless or improper operation, operator error or willful misconduct does not qualify as an emergency. An emergency

situation requires immediate corrective action to restore safe operation. A planned flaring event shall not be considered as an emergency.

3.11 Enclosed Flare: a flare composed of multiple gas burners that are grouped in an enclosure, and are staged to operate at a wide range of flow rates.

3.12 EPA: United States Environmental Protection Agency.

3.13 Feasible: Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

3.14 Flare: a combustion device that oxidizes combustible gases or vapors, where the combustible gases or vapors being destroyed are routed into the burner without heat recovery.

3.15 Flare Event: any intentional or unintentional combustion of vent gas in a flare. The flare event ends when the flow velocity drops below 0.12 feet per second or when the 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 APCO in the Flare Monitoring and Recording Plan. For a flare event that continues for more than one calendar day, each calendar day or venting of gases shall constitute a separate flare event.

3.16 Flare Gas: gas burned in a flare.

3.17 Flare Minimization Plan (FMP): a document intended to meet the requirements of Section 6.5 of this Rule.

3.18 Flare Monitoring System: all flare monitoring and recording equipment used for the determination of flare operating parameters. Flare monitoring and recording equipment includes, but is not limited to, sample systems, transducers, transmitters, data acquisition equipment, data recording equipment, and video monitoring equipment and video recording equipment.

3.19 Gaseous Fuel: any gases used as combustion fuel which include, but are not limited to, any natural, process, synthetic, landfill, sewage digester, or waste gases. Gaseous fuels include produced gas, pilot gas and, when burned, purge gas.

3.20 Landfill Operation: facilities engaged in operating landfills as defined in the North American Industry Classification System 562211 (Hazardous Waste Treatment and Disposal) or 562212 (Solid Waste Landfill).

3.21 Major Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.22 MMBtu: million British thermal units.

3.23 MMscf: million standard cubic feet

3.24 Non-Assisted Flare: a combustion device without any auxiliary provision for enhancing the mixing of air into its flame. This definition does not include those flares that by design provide excess air at the flare tip.

3.25 NOx: any nitrogen oxide compounds.

3.26 Oil and Gas Operation: facilities engaged in crude oil or gas production, gas processing, or refining.

3.27 Open Flare: a vertically or horizontally oriented open pipe flare from which gases are released into the air before combustion is commenced.

3.28 Operator: includes, but not limited to, any person who owns, leases, supervises, or operates a facility.

3.29 Organic Liquid Loading Operation: as defined in Rule 4624 (Transfer of Organic Liquid).

3.30 Petroleum Refinery: a facility that processes petroleum, as defined in the Standard Industrial Classification Manual as Industry No. 2911, Petroleum Refining. 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.

3.31 Pilot: an auxiliary burner used to ignite the vent gas routed to a flare.

3.32 Pilot Gas: the gas used to maintain the presence of a flame for ignition of vent gases.

3.33 Planned Flaring: a flaring operation that constitutes a designed and planned process at a source, and which would have been reasonably foreseen ahead of its actual occurrence, or is scheduled to occur. Planned flaring includes, but is not limited to, the following flaring activities:

3.33.1 Oil or gas well tests, well related work, tests ordered by a regulatory agency.

3.33.2 Equipment depressurization for maintenance purposes.

3.33.3 Equipment start-up or shutdown.

3.33.4 Flaring of gas at production sources where no gas handling, gas injection or gas transmission facilities exists.

3.33.5 Flaring of off-specification gas (i.e. non-PUC quality gas), unless the operator can demonstrate that the gas must be flared for engineering or safety reasons, e.g., under emergency.

3.33.6 The operation of a flare for the purpose of performing equipment maintenance.

3.34 Prevention Measure: a component, system, procedure, or program that will minimize or eliminate flaring.

3.35 Public Utilities Commission (PUC) Quality Gas: any gaseous fuel, gas containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five grains of total sulfur per one hundred (100) standard cubic feet. PUC quality gas shall also mean high methane (at least 80% by volume) gas as specified in PUC's General Order 58-A.

3.36 Publicly-Owned Facility: A wastewater treatment facility or landfill facility owned and operated by a public agency.

3.37 Purge Gas: Nitrogen, carbon dioxide, liquefied petroleum gas, refinery fuel gas, or natural gas, any of which can be used to maintain a non-explosive mixture of gases in the flare header or provide sufficient exit velocity to prevent any regressive flame travel back into the flare header.

3.38 Refinery Fuel Gas: a combustible gas, which is a by-product of the refinery process.

3.39 Regeneration Gas: Purge gas from a system consisting of several media trains that is used to remove impurities from combustible gas vapors that is regenerated by purging with gas.

3.40 Reportable Flaring Event: any flaring where more than 500,000 standard cubic feet of vent gas is flared per calendar day, or where sulfur oxide emissions are greater than 500 pounds per calendar day. A reportable flaring event ends when it can be demonstrated by monitoring required in Section 6.8 that the integrity of the water seal has been maintained sufficiently to prevent vent gas to the flare tip. For flares without water seals or water seal monitors as required by Section 6.8, a reportable flaring event ends when the rate of flow of vent gas falls below 0.12 feet per second.

3.41 Representative Sample: a sample of vent gas collected from the location as approved for flare monitoring and analyzed utilizing test methods specified in Section 6.3.4.

3.42 Shutdown: 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.

3.43 Startup: 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.

3.44 Steam-Assisted Flare: a combustion device where steam is injected into the combustion zone to promote turbulence for the mixing of the combustion air before it is introduced to the flame.

3.45 Total Organic Gases (TOG): all hydrocarbon compounds containing hydrogen and carbon with or without other chemical elements.

3.46 Turnaround: a planned activity involving shutdown and startup of one or several process units for the purpose of performing periodic maintenance, repair, replacement of equipment or installation of new equipment.

3.47 Vent Gas: any gas directed into a flare, excluding assisting air or steam, flare pilot gas, and any continuous purge gases.

3.48 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.49 Water Seal: a liquid barrier, or seal, to prevent the passage of gas. Water seals provide a positive means of flash-back prevention in addition to enabling the upstream flare system header to operate at a slight positive pressure at all times.

4.0 Exemptions

4.1 Flares operated at municipal solid waste landfills that combust less than 2,000 MMscf of landfill gas per calendar year and that have ceased accepting waste.

4.2 Flares that combust only propane or butane or a combination of propane and butane.

4.3 Flares used for well testing, tank degassing, and pipeline degassing operations.

4.4 Flares that combust regeneration gas.

5.0 Requirements

The operator of any source subject to this rule shall comply with the following requirements:

5.1 Flares that are permitted to operate only during an emergency are not subject to the requirements of Sections 5.7, 5.8, 5.9 and 5.10.

5.2 Flares that are operated 200 hours or less per calendar year as specified in the Permit to Operate, or with an annual throughput limit equivalent to 200 hours per year at

flare rating (MMBtu/hr) as specified in the Permit to Operate, are exempt from the requirements of Sections 5.9 and 5.10.

5.2.1 For the 200 hours per year validation, the operator shall use a calibrated non-resettable totalizing time meter or equivalent method approved in writing by the APCO; or

5.2.2 For the annual throughput limit equivalent to 200 hours per year validation, the operator shall use a calibrated fuel meter or equivalent method approved in writing by the APCO.

5.3 The flame shall be present at all times when combustible gases are vented through the flare.

5.4 The outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares.

5.5 Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an alternative equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated.

5.6 Flares that use flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging.

5.7 Open flares in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18. The requirements of this section shall not apply to Coanda effect flares.

5.8 Ground-level enclosed flares shall meet the emission standards in Table 1, except as specified in Section 5.9 and 5.10.

Table 1 – Ground Level Enclosed Flare Emissions Limits

Type of Flare and Heat Release Rate in MMBtu/hr	VOC (lb/MMBtu)	NOx (lb/MMBtu)
Without Steam-assist		
<10 MMBtu	0.0051	0.0952
10-100 MMBtu	0.0027	0.1330
>100 MMBtu	0.0013	0.5240
With Steam-assist		
All	0.14 as TOG	0.068

5.9 Except for flares that meet the emission limits specified in Table 3, operators of flares located at operations specified in Table 2 shall complete one of the following options:

5.9.1 Submit an ATC application to limit flaring annual throughput through an enforceable Permit to Operate limit, to levels not to exceed those specified in Table 2 for two consecutive calendar years, per the compliance schedule in Section 7.2; or

5.9.2 Replace or modify the existing flare to meet Table 3 emission limits per the compliance schedule in Section 7.3.

Table 2 – Flare Annual Throughput Thresholds (MMBtu/calendar year)	
Flare Category	MMBtu/yr
A. Flares used at Oil and Gas Operations, and Chemical Operations	25,000
B. Flares used at Landfill Operations	90,000
C. Flares used at Digester Operations	100,000
D. Flares used at Organic Liquid Loading Operations	25,000

Table 3 – VOC and NOx Emissions Requirements for Flares		
Flare Category	VOC (lb/MMBtu)	NOx (lb/MMBtu)
A. Flares at Oil and Gas Operations or Chemical Operations	0.008	0.018
B. Flares at Landfill Operations	0.038	0.025
C. Flares at Digester Operations (Located at a Major Source)	0.038	0.025
D. Flares at Digester Operations (Not located at a Major Source)	N/A	0.060
E. Flares at Organic Liquid Loading Operations	Pounds/1,000 gallons loaded	
	N/A	0.034

5.10 For operators of flares that opt to comply with Section 5.9.1, any operator with a flare that exceeds the annual throughput thresholds specified in Table 2 for two consecutive calendar years shall notify the APCO in writing of the exceedance within 30 days following the end of the second calendar year and shall replace or modify the flare to meet Table 3 emission limits per the compliance schedule in Section 7.4.

5.11 Flare Minimization Plan

Effective on and after July 1, 2011, flaring is prohibited at petroleum refineries and major sources, except landfill operations, unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5, and all commitments listed in that plan have been met. This standard shall not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.10 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere.

5.12 Petroleum Refinery SO_2 Performance Targets

The operator of a petroleum refinery shall minimize sulfur dioxide flare emissions to less than 0.50 tons per million barrels of crude processing capacity, calculated as an average over one calendar year.

5.13 Effective on and after July 1, 2011, the operator of a flare at a petroleum refinery or major source, except landfill operations, subject to flare minimization requirements pursuant to Section 5.11 shall monitor the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. The operator shall maintain records pursuant to Section 6.1.7. Flares that the operator can verify, based on permit conditions, are not capable of producing reportable flare events pursuant to Section 6.2.2 shall not be required to monitor vent gas flow to the flare.

5.14 Effective on and after January 1, 2024, the operator of a flare subject to the annual throughput thresholds in Table 2 shall monitor the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. The operator shall determine the heating value (Btu per cubic foot) of the vent gas annually in accordance with Section 6.3.6. The operator shall maintain records pursuant to Section 6.1.7. Flares that the operator can verify, based on permit conditions, are not capable of exceeding the annual throughput thresholds in Table 2 shall not be required to monitor vent gas flow to the flare.

5.15 Effective on and after July 1, 2011, the operator of a petroleum refinery or a flare at a major source, except landfill operations, with a flaring capacity equal to or greater than 50 MMBtu per hour shall monitor the flare pursuant to Sections 6.6, 6.7, 6.8, 6.9, and 6.10. Effective on and after January 1, 2024, the operator of any flare with a flaring capacity equal to or greater than 50 MMBtu per hour shall monitor the flare pursuant to Sections 6.6, 6.7, 6.8, 6.9, and 6.10.

6.0 Administrative Requirements

6.1 Recordkeeping

The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request:

6.1.1 Copy of the compliance determination conducted pursuant to Section 6.4.1.

6.1.2 Copy of the source testing result conducted pursuant to Section 6.4.2.

6.1.3 For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation.

6.1.4 Operators claiming an exemption pursuant to Section 5.2 shall record annual hours of operation or annual throughput necessary to demonstrate an exemption under that section.

6.1.5 A copy of the approved flare minimization plan pursuant to Section 6.5.

6.1.6 A copy of annual reports submitted to the APCO pursuant to Section 6.2.

6.1.7 Monitoring data collected pursuant to Sections 5.13, 5.14, 6.6, 6.7, 6.8, 6.9, and 6.10.

6.2 Flare Reporting

6.2.1 Unplanned Flaring Event

The operator of a flare subject to flare minimization plans pursuant to Section 5.11 of this rule shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time.

6.2.2 Reportable Flaring Event

Effective on and after July 1, 2012, and annually thereafter, except for flares meeting the emission limits in Table 3, the operator of a flare subject to flare minimization plans pursuant to Section 5.11 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. Beginning January 1, 2024, the report shall be submitted within 30 days following the end of the previous calendar year. The report shall include, but is not limited to all of the following:

6.2.2.1 The results of an investigation to determine the primary cause and contributing factors of the flaring event;

6.2.2.2 Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented;

6.2.2.3 If appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and

6.2.2.4 The date, time, and duration of the flaring event.

6.2.3 Annual Monitoring Report

Until January 1, 2024, the operator of a flare at a petroleum refinery or major source, except landfill operations, subject to flare monitoring requirements pursuant to Sections 5.13, 5.14, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO within 30 days following the end of each 12 month period.

Effective on and after January 1, 2024, and annually thereafter, the operator of a any flare subject to flare monitoring requirements pursuant to Sections 5.13, 5.14, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report in an electronic format approved by the District to the APCO within 30 days following the end of each calendar year for all required monitoring under those sections.

The report shall include the following:

6.2.3.1 The total volumetric flow of vent gas in standard cubic feet for each day for the previous calendar year.

6.2.3.2 Hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition, where applicable pursuant to Section 6.6.

6.2.3.3 If vent gas composition is monitored by a continuous analyzer or analyzers pursuant to Section 5.14, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used pursuant to Section 6.3.4, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month.

6.2.3.4 If the flow monitor used pursuant to Section 5.13 measures molecular weight, the average molecular weight for each hour of each month.

6.2.3.5 For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means used to determine flow, as applicable pursuant to Section 6.7.

6.2.3.6 Flare monitoring system downtime periods, including dates and times, as applicable pursuant to Section 6.9.

6.2.3.7 For each day and for each month provide calculated sulfur dioxide emissions, as applicable.

6.2.3.8 A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3.5.

6.2.3.9 For flares subject to the annual throughput thresholds specified in Table 2, include the annual throughput in MMBtu for the previous calendar year.

6.3 Test Methods

The test methods listed below shall be used to demonstrate compliance with this rule. Alternate equivalent test methods may be used provided the test methods have been approved by the APCO and EPA.

6.3.1 VOC, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case Method 25a may be used, and analysis of halogenated exempt compounds shall be analyzed by EPA Method 18 or ARB Method 422 "Determination of Volatile organic Compounds in Emission from Stationary Sources". The VOC concentration in ppmv shall be converted to pounds per million Btu (lb/MMBtu) by using the following equation:

$$\text{VOC in lb/MMBtu} = \frac{(ppmv\ dry)\ x\ (F, dscf\ /\ MMBtu)}{(1.135\ x 10^{6})\ x\ (20.9 - \%O_2)}$$

Where: F = As determined by EPA Method 19

6.3.2 NOx emissions in pounds per million BTU shall be determined by using EPA Method 19.

6.3.3 NOx and O_2 concentrations shall be determined by using EPA Method 3A, EPA Method 7E, or ARB 100.

6.3.4 Testing and Sampling Methods for Flare Monitoring

Effective on and after July 1, 2011 operators subject to vent gas composition monitoring requirements pursuant to Section 6.6 shall use the following test methods as appropriate, or by an alternative method approved by the APCO, ARB and EPA:

6.3.4.1 Total hydrocarbon content and methane content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, EPA Method 18, or EPA Method 25A or 25B,

6.3.4.2 Hydrogen sulfide content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, ASTM Method D 4084-94, or ASTM Method D 4810-88.

6.3.4.3 If vent gas composition is monitored with a continuous analyzer employing gas chromatography the minimum sampling frequency shall be one sample every 30 minutes.

6.3.4.4 If vent gas composition is monitored using continuous analyzers not employing gas chromatography, the total reduced sulfur content of vent gas shall be determined by using EPA Method D4468-85.

6.3.5 Flow Verification Test Methods

For purposes of the flow verification report required by Section 6.2.3.8, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB, and EPA:

6.3.5.1 EPA Methods 1 and 2;

6.3.5.2 A verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.13.

6.3.5.3 Tracer gas dilution or velocity.

6.3.5.4 Other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter.

6.3.6 The heating value of flare gas shall be determined by ASTM D 1826-88 or ASTM D 1945-81 in conjunction with ASTM D 3588-89; alternately, an operator may elect to use a default heating value from Table 4.

Table 4 – Default Flare Gas Heating Values

Flare Category	Heating Value (Btu/scf)
Flares at Oil and Gas Operations or Chemical Operations	1,000
Flares at Landfill Operations	500
Flares at Digester Operations	600

6.4 Compliance Determination

6.4.1 Upon request, the operator of flares that are subject to Section 5.7 shall make available, to the APCO, the compliance determination records that demonstrate compliance with the provisions of 40 CFR 60.18, (c)(3) through (c)(5).

6.4.2 The operator of flares subject to emission limits in Table 1 and Table 3, Categories A, B, and C shall conduct source testing at least once every 12 months to demonstrate compliance with Section 5.8. The operator shall submit a copy of the testing protocol to the APCO at least 30 days in advance of the scheduled

testing. The operator shall submit the source test results not later than 60 days after completion of the source testing.

6.5 Flare Minimization Plan

6.5.1 By July 1, 2010, the operator of a petroleum refinery flare or any flare at a major source, except landfill operations, that has a flaring capacity of greater than or equal to 5.0 MMBtu per hour shall submit a flare minimization plan (FMP) to the APCO for approval.

The FMP shall include, but not be limited to:

6.5.1.1 A description and technical specifications for each flare and associated knock-out pots, surge drums, water seals and flare gas recovery systems.

6.5.1.2 Detailed process flow diagrams of all upstream equipment and process units venting to each flare, identifying the type and location of all control equipment.

6.5.1.3 A description of equipment, processes, or procedures the operator plans to install or implement to eliminate or minimize flaring and planned date of installation or implementation.

6.5.1.4 An evaluation of prevention measures to reduce flaring that has occurred or may be expected to occur during planned major maintenance activities, including startup and shutdown.

6.5.1.5 An evaluation of preventative measures to reduce flaring that may be expected to occur due to issues of gas quantity and quality. The evaluation shall include an audit of the vent gas recovery capacity of each flare system, the storage capacity available 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 shall determine the feasibility of reducing flaring though the recovery, treatment and use of the gas or other means.

6.5.1.6 An evaluation of preventative measures to reduce flaring caused by the recurrent failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. The evaluation shall determine the adequacy of existing maintenance schedules and protocols for such equipment. For purposes of this section, a failure is recurrent if it occurs more than twice during any five year period as a result of the same cause as identified in accordance with Section 6.2.2.

6.5.1.7 Any other information requested by the APCO as necessary for determination of compliance with applicable provisions of this rule.

6.5.2 Every five years after the initial FMP submittal, the operator shall submit an updated FMP for each flare to the APCO for approval. The current FMP shall remain in effect until the updated FMP is approved by the APCO. If the operator fails to submit an updated FMP as required by this section, the existing FMP shall no longer be considered an approved plan.

6.5.3 An updated FMP shall be submitted by the operator pursuant to Section 6.5 addressing new or modified equipment, prior to installing the equipment. Updated FMP submittals are only required if:

6.5.3.1 The equipment change would require an authority to construct (ATC) and would impact the emissions from the flare, and

6.5.3.2 The modification is not solely the removal or decommissioning of equipment that is listed in the FMP, and has no associated increase in flare emissions.

6.5.4 When submitting the initial FMP, or updated FMP, the operator shall designate as confidential any information claimed to be exempt from public disclosure under the California Public Records Act, Government Code Section 6250 et seq. If a document is submitted that contains information designated confidential, the operator shall provide a justification for this designation and shall submit a separate copy of the document with the information designated confidential redacted.

6.6 Vent Gas Composition Monitoring

Effective on and after July 1, 2011, the operator of a petroleum refinery flare or any flare at a major source, except landfill operations, that has a flaring capacity equal to or greater than 50 MMBtu per hour shall monitor vent gas composition using one of the five methods pursuant to Section 6.6.1 through Section 6.6.5, as appropriate.

Effective on and after January 1, 2024, the operator of any flare with a flaring capacity equal to or greater than 50 MMBtu per hour, except landfill operations, shall monitor vent gas composition using one of the five methods pursuant to Section 6.6.1 through Section 6.6.5, as appropriate.

6.6.1 Sampling that meets the following requirements:

6.6.1.1 If the flow rate of vent gas flared in any consecutive 15-minute period continuously exceeds 330 standard cubic feet per minute (SCFM), a sample shall be taken within 15 minutes. The sampling frequency

thereafter shall be one sample every three hours and shall continue until the flow rate of vent gas flared in any consecutive 15-minute period is continuously 330 SCFM or less. In no case shall a sample be required more frequently than once every 3 hours.

6.6.1.2 Samples shall be analyzed pursuant to Section 6.3.4.

6.6.2 Integrated sampling that meets the following requirements:

6.6.2.1 If the flow rate of vent gas flared in any consecutive 15 minute period continuously exceeds 330 SCFM, integrated sampling shall begin within 15 minutes and shall continue until the flow rate of vent gas flared in any consecutive 15 minute period is continuously 330 SCFM or less.

6.6.2.2 Integrated sampling shall consist of a minimum of one aliquot for each 15-minute period until the sample container is full. If sampling is still required pursuant to Section 6.6.2.1, a new sample container shall be placed in service within one hour after the previous sample was filled. A sample container shall not be used for a sampling period that exceeds 24 hours.

6.6.2.3 Samples shall be analyzed pursuant to Section 6.3.4.

6.6.3 Continuous analyzers that meet the following requirements:

6.6.3.1 The analyzers shall continuously monitor for total hydrocarbon methane, and depending upon the analytical method used pursuant to Section 6.3.4, hydrogen sulfide or total reduced sulfur.

6.6.3.2 The hydrocarbon analyzer shall have a full-scale range of 100% total hydrocarbon.

6.6.3.3 Each analyzer shall be maintained to be accurate to within 20% when compared to any field accuracy tests or to within 5% of full scale.

6.6.4 Continuous analyzers employing gas chromatography that meet the following requirements:

6.6.4.1 The gas chromatography system shall monitor for total hydrocarbon, methane, and hydrogen sulfide.

6.6.4.2 The gas chromatography system shall be maintained to be accurate within 5% of full scale.

6.6.5 Monitor sulfur content using a colorimetric tube system on a daily basis, and monitor vent gas hydrocarbon on a weekly basis by collecting samples and having them tested pursuant to a method in Section 6.3.4.

6.6.6 If flares share a common header, a sample from the header will be deemed representative of vent gas composition for all flares served by the header.

6.6.7 The operator shall provide the APCO with access to the monitoring system to collect vent gas samples to verify the analysis required by Section 5.14.

6.7 Pilot and Purge Gas Monitoring

Effective on and after July 1, 2011, the operator of a petroleum refinery flare or any flare at a major source, except landfill operations, that has a flaring capacity equal to or greater than 50 MMBtu per hour shall monitor the volumetric flows of purge and pilot gases with flow measuring devices or other parameters as specified on the Permit to Operate so that volumetric flows of pilot and purge gas may be calculated based on pilot design and the parameters monitored.

Effective on and after January 1, 2024, the operator of any flare that has a flaring capacity equal to or greater than 50 MMBtu per hour shall monitor the volumetric flows of purge and pilot gases with flow measuring devices or other parameters as specified on the Permit to Operate so that volumetric flows of pilot and purge gas may be calculated based on pilot design and the parameters monitored.

6.8 Water Seal Monitoring

Effective on and after July 1, 2011, the operator of a petroleum refinery flare or any flare at a major source, except landfill operations, that has a flaring capacity equal to or greater than 50 MMBtu per hour with a water seal shall monitor and record the water level and pressure of the water seal that services each flare daily or as specified on the Permit to Operate.

Effective on and after January 1, 2024, the operator of any flare that has a flaring capacity equal to or greater than 50 MMBtu per hour with a water seal shall monitor and record the water level and pressure of the water seal that services each flare daily or as specified on the Permit to Operate.

6.9 General Monitoring

Effective on and after July 1, 2011, the operator of a petroleum refinery flare or any flare at a major source, except landfill operations, that has a flaring capacity equal to or greater than 50 MMBtu per hour shall comply with the below sections, as applicable.

Effective on and after January 1, 2024, the operator of any flare with a flaring capacity equal to or greater than 50 MMBtu per hour shall also comply with the below sections, as applicable.

6.9.1 Periods of flare monitoring system inoperation greater than 24 continuous hours shall be reported by the following working day, followed by notification of resumption of monitoring. Periods of inoperation of monitoring equipment shall not exceed 14 days per any 18-consecutive-month period. Periods of flare monitoring system inoperation do not include the periods when the system feeding the flare is not operating.

6.9.2 During periods of inoperation of continuous analyzers or auto-samplers installed pursuant to Section 6.6, operators responsible for monitoring shall take one sample within 30 minutes of the commencement of flaring, from the flare header or from an alternate location at which samples are representative of vent gas composition and have samples analyzed pursuant to Section 6.3.4. During periods of inoperation of flow monitors required by Section 5.13, flow shall be calculated using good engineering practices.

6.9.3 Maintain and calibrate all required monitors and recording devices in accordance with the applicable manufacturer's specifications. In order to claim that a manufacturer's specification is not applicable, the person responsible for emissions must have, and follow, a written maintenance policy that was developed for the device in question. The written policy must explain and justify the difference between the written procedure and the manufacturer's procedure.

6.9.4 All in-line continuous analyzer and flow monitoring data must be continuously recorded by an electronic data acquisition system capable of one-minute averages. Flow monitoring data shall be recorded as one-minute averages.

6.10 Video Monitoring

The operator of a petroleum refinery flare shall install and maintain equipment that records a real-time digital image of the flare and flame at a frame rate of no less than one frame per minute. The recorded image of the flare shall be of sufficient size, contrast, and resolution to be readily apparent in the overall image or frame. The image shall include an embedded date and time stamp. The equipment shall archive the images for each 24-hour period. In lieu of video monitoring the operator may use an alternative monitoring method that provides data to verify date, time, vent gas flow, and duration of flaring events.

7.0 Compliance Schedule

7.1 Operators of flares, that are exempt under Section 4.0 and that lose exemption status, shall not operate flares until in full compliance with all applicable requirements of this rule effective on the date the exemption status is lost.

7.2 Operators of flares opting to limit flaring annual throughput per Section 5.9.1 shall meet the compliance schedule in Table 5.

Table 5 – Flaring Throughput Permit to Operate Limit Timeline	
Requirement	Deadline
A. Submit ATC application to limit annual throughput to levels below those specified in Table 2	July 1, 2022
B. Compliance with flaring annual throughput limits	On and after January 1, 2024

7.3 Operators of flares opting to replace or modify a flare to meet the emission limits in Table 3 per Section 5.9.2 shall meet the compliance schedule in Table 6.

Table 6 – Flare Modification or Replacement Timeline	
Requirement	Deadline
A. Submit ATC application to modify or replace the flare to meet Table 3 emission limits	July 1, 2022
B. Demonstrate Compliance with Table 3 emission limits	December 31, 2023

7.4 Operators of flares subject to Section 5.10 shall meet the compliance schedule in Table 7.

Table 7 – Flare Modification or Replacement Timeline	
Requirement	Deadline
A. Submit ATC application to modify or replace the flare to meet Table 3 emission limits	By April 15 of the year after the end of the second consecutive calendar year in which an exceedance of the Annual Throughput Threshold occurred
B. Demonstrate Compliance with Table 3 emission limits	By December 31 of the year after the end of the second consecutive calendar year in which an exceedance of the Annual Throughput Threshold occurred

RULE 4313 LIME KILNS (Adopted March 27, 2003)

1.0 Purpose

The purpose of this rule is to limit emissions of nitrogen oxide (NOx) compounds from lime kilns.

2.0 Applicability

The requirements of this rule shall apply to the operation of lime kilns.

3.0 Definitions

3.1 Lime Kiln: a unit in which direct heat is used to calcine lime mud, which consists primarily of oxidizing calcium carbonate, into quicklime, which is calcium oxide.

3.2 NOx Emissions: the sum of oxides of nitrogen in the flue gas expressed as NO_2.

4.0 Requirements

4.1 In accordance with the requirement of Section 6.0 the lime kiln shall not discharge into the atmosphere any gases, which contain oxides of nitrogen, expressed as NO2, that exceed the limits in Sections 4.1.1 through 4.1.3. The operator shall demonstrate compliance with the applicable emission limits pursuant to Sections 4.2 and 5.3.

4.1.1 0.10 pound per million Btu when burning gaseous fuel;

4.1.2 0.12 pound per million Btu when burning distillate fuel oil;

4.1.3 0.20 pound per million Btu when burning residual fuel oil.

4.2 Emission Monitoring System

4.2.1 The operator shall install and operate an APCO approved Continuous Emissions Monitoring System (CEMS) to demonstrate compliance with the emission limits specified in Section 4.1. An approved CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B Performance Specifications 2 and 3, and Appendix F (Quality Assurance Procedures), and applicable sections of Rule 1080 (Stack Monitoring).

4.2.2 In lieu of complying with the requirements of Section 4.2.1, the operator shall monitor the operating parameters of the lime kiln in accordance with an APCO approved Alternate Emission Monitoring System to insure compliance with the emission limits specified in Section 4.1.

5.0 Administrative Requirements

5.1 Recordkeeping

5.1.1 The operator shall keep in the facility the records required by Sections 5.1.2 and 5.1.3 for at least five years. The records shall be made available to the APCO for inspection upon request.

5.1.2 The operator shall maintain records of operations in accordance with their Permit to Operate on a daily basis.

5.1.3 The operator shall maintain the following records on a monthly basis:

5.1.3.1 Total hours of operation;

5.1.3.2 Type and quantity of fuel used;

5.1.3.3 Records of NOx emissions/emissions rates.

5.2 Test Methods

5.2.1 Compliance with the requirements of Section 4.1 shall be determined in accordance with the following source test procedures or their equivalents as approved by the USEPA, ARB, and the APCO:

5.2.1.1 NOx emission rate (Heat input basis) – USEPA Method 19.

5.2.1.2 Oxides of Nitrogen – USEPA Method 7E, or ARB Method 100.

5.2.1.3 Stack gas oxygen, carbon dioxide, excess air, and dry molecular weight – USEPA Method 3A or ARB Method 100.

5.2.1.4 Higher heating valve (hhv) be certified by a third party fuel supplier or determined by ASTM D1826 or D1945 in conjunction with ASTM D3588 for gaseous fuels, ASTM D240 or D4809 for liquid hydrocarbon fuels.

5.3 Compliance Determination

5.3.1 To demonstrate compliance with the applicable emission limits specified in Section 4.1 the operator shall conduct source testing of the lime kiln at least once every 12 months. Lime kilns that demonstrate compliance with the applicable emission limits in Section 4.1 on two consecutive 12-month source tests may defer the following 12-month source testing requirement for up to 36 months from the date of the last source test. If the result of

the 36-month source testing demonstrates that the lime kiln does not meet the applicable emission limits specified in Section 4.1, the source testing frequency shall revert to at least once every 12 months. Failure to comply with the requirements of Section 5.3, or any source test results that exceed the applicable NOx emission limits in Sections 4.1 shall constitute a violation of this rule.

5.3.2 The operator of a lime kiln which does not operate a CEMS shall monitor the lime kiln's operational characteristics at least on a monthly basis in accordance with the requirements of the APCO approved Alternate Emission Monitoring System to ensure compliance with the applicable emission limits specified in Section 4.1.

5.3.3 All emissions measurements shall be averaged over a period of 15 consecutive minutes to demonstrate compliance with the applicable emission limits of this rule. If emissions are measured for more than 15 minutes, any 15-consecutive-minute block average exceeding the applicable emission limits of this rule shall constitute a violation of this rule. Any 15-consecutive-minute block average value recorded by a CEMS or an Alternate Monitoring System, exceeding an applicable emission limit shall constitute a violation of this rule.

6.0 Compliance Schedule

Each lime kiln subject to this rule shall comply with the requirements of Section 4.1 by no later than September 27, 2003.

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RULE 4320 ADVANCED EMISSION REDUCTION OPTIONS FOR BOILERS, STEAM GENERATORS, AND PROCESS HEATERS GREATER THAN 5.0 MMBTU/HR (Adopted October 16, 2008)

1.0 Purpose

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx), carbon monoxide (CO), oxides of sulfur (SO_2), and particulate matter 10 microns or less (PM10) from boilers, steam generators, and process heaters.

2.0 Applicability

This rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 million Btu per hour.

3.0 Definitions

3.1 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.2 Air Resources Board (ARB): as defined in Rule 1020 (Definitions).

3.3 Annual Capacity Factor: the ratio of the amount of fuel burned by the unit in a calendar year to the amount of fuel that the unit could have burned if it had operated at its maximum rated capacity for 8,760 hours during the calendar year.

3.4 Annual Heat Input: the actual, total heat input of fuels burned by a unit in a calendar year, as determined from the higher heating value and cumulative annual usage of each fuel.

3.5 Boiler or Steam Generator: any external combustion equipment, fired with any fuel used to produce hot water or steam.

3.6 British Thermal Unit (Btu): the amount of heat required to raise the temperature of one pound of water from 59°F to 60°F at one atmosphere.

3.7 California Public Utility Commission (PUC) Quality Natural Gas: any gaseous fuel, gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume.

3.8 California PUC Quality Natural Gas Curtailment: means a shortage in the supply of California Public Utility Commission (PUC) quality natural gas, due solely to supply limitations or restrictions in distribution pipelines by the utility supplying the gas, and not due to the cost of natural gas.

3.9 Dryer: any unit in which material is dried in direct contact with the products of combustion.

3.10 EPA: United States Environmental Protection Agency.

3.11 Gaseous Fuel: any fuel which is a gas at standard conditions.

3.12 Gas Liquids Processing Facility: a facility that is engaged in the catalytic processing of gas liquids to produce finished products.

3.13 Heat Input: the heat (hhv basis) released due to fuel combustion in a unit, not including the sensible heat of incoming combustion air and fuel.

3.14 Higher Heating Value (hhv): the total heat liberated per mass of fuel burned (expressed as Btu per pound), when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

3.15 Liquid Fuel: any fuel which is a liquid at standard conditions.

3.16 NOx Emissions: the sum of oxides of nitrogen expressed as NO_2 in the flue gas.

3.17 Oilfield Steam Generator: an external combustion equipment which converts water to dry steam or to a mixture of water vapor and steam, with an absolute pressure of more than 30 psia, and which is used exclusively in thermally enhanced crude oil production.

3.18 Parts Per Million by Volume (ppmv): the ratio of the number of gas molecules of a given species, or group of species, to the number of millions of total gas molecules.

3.19 Process Heater: any combustion equipment fired with liquid and/or gaseous fuel and which transfers heat from combustion gases to water or process streams. This definition excludes: kilns or ovens used for drying, baking, cooking, calcining, or vitrifying; and unfired waste heat recovery heaters used to recover sensible heat from the exhaust of combustion equipment.

3.20 Qualified Technician: a stationary source employee or any personnel contracted by a stationary source operator who has a documented training and a demonstrated experience performing tune-ups on a unit to the satisfaction of the APCO. The documentation of tune-up training and experience shall be made available to the APCO upon request.

3.21 Rated Heat Input (expressed as million Btu per hour): the heat input capacity specified on the nameplate of the unit.

3.22 Refinery Unit: a unit that is permanently installed and operated at a petroleum refinery or a gas liquids processing facility.

3.23 Re-ignition: the relighting of a unit after an unscheduled and unavoidable interruption or shut off of the fuel flow or electrical power, for a period of less than 30 minutes, due to reasons outside the control of the operator.

3.24 Seasonal Source: as defined in District Rule 2201 (New And Modified Stationary Source Review Rule)

3.25 Shutdown: the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off.

3.26 Solid Fuel: any fuel which is a solid at standard conditions.

3.27 Small Producer: as defined in District Rule 1020 (Definitions)

3.28 Standard Conditions: standard conditions as defined in Rule 1020 (Definitions).

3.29 Start-up: the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation.

3.30 Unit: any boiler, steam generator or process heater as defined in this rule.

4.0 Exemptions

4.1 This rule shall not apply to:

4.1.1 Solid fuel fired units.

4.1.2 Dryers and glass melting furnaces.

4.1.3 Kilns and smelters where the products of combustion come into direct contact with the material to be heated.

4.1.4 Unfired or fired waste heat recovery boilers that are used to recover or augment heat from the exhaust of combustion turbines or internal combustion engines.

4.2 The requirements of Sections 5.2 shall not apply to a unit when burning any fuel other than California PUC quality natural gas during California PUC quality natural gas curtailment provided all of the following conditions are met:

4.2.1 Fuels other than California PUC quality natural gas are burned no more than 168 cumulative hours in a calendar year plus 48 hours per calendar year for equipment testing, as limited by Permit to Operate.

4.2.2 NOx emission shall not exceed 150 ppmv or 0.215 lb/MMBtu. Demonstration of compliance with this limit shall be made by either source testing, continuous emission monitoring system (CEMS), an APCO approved Alternate Monitoring System, or an APCO approved portable NOx analyzer.

5.0 Requirements

5.1 An operator of a unit(s) subject to this rule shall comply with all applicable requirements of the rule and one of the following, on a unit-by-unit basis:

5.1.1 Operate the unit to comply with the emission limits specified in Sections 5.2 and 5.4; or

5.1.2 Pay an annual emissions fee to the District as specified in Section 5.3 and comply with the control requirements specified in Section 5.4; or

5.1.3 Comply with the applicable Low-use Unit requirements of Section 5.5.

5.2 NOx and CO Emission Limits

5.2.1 On and after the indicated Compliance Deadline, units shall not be operated in a manner which exceeds the applicable NOx emissions limit specified in Table 1. On and after October 1, 2008, units shall not be operated in a manner to which exceeds a carbon monoxide (CO) emissions limit of 400 ppmv.

5.2.2 No unit fired on liquid fuel shall be operated in a manner to exceed emissions of 40 ppmv NOx and 400 ppmv CO.

5.2.3 All ppmv emission limits specified in this section are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 3.00 percent oxygen in accordance with Section 8.1.

Table 1: NOx Emission Limits			
Category	NOx Limit	Authority to Construct	Compliance Deadline
A. Units with a total rated heat input > 5.0 MMBtu/hr to ≤ 20.0 MMBtu/hr, except for Categories C through G units	a) Standard Schedule 9 ppmv or 0.011 lb/MMBtu; or	July 1, 2011	July 1, 2012
	b) Enhanced Schedule 6 ppmv or 0.007 lb/MMBtu	January 1, 2013	January 1, 2014
B. Units with a total rated heat input > 20.0 MMBtu/hr, except for Categories C through G units	a) Standard Schedule 7 ppmv or 0.008 lb/MMBtu; or	July 1, 2009	July 1, 2010
	b) Enhanced Schedule 5 ppmv or 0.0062 lb/MMBtu	January 1, 2013	January 1, 2014
C. Oilfield Steam Generators			
1. Units with a total rated heat input > 5.0 MMBtu/hr to ≤20.0 MMBtu/hr	a) Standard Schedule 9 ppmv or 0.011 lb/MMBtu; or	July 1, 2011	July 1, 2012
	b) Enhanced Schedule 6 ppmv or 0.007 lb/MMBtu	January 1, 2013	January 1, 2014
2. Units with a total rated heat input >20.0 MMBtu/hr	a) Standard Schedule 7 ppmv or 0.008 lb/MMBtu; or	July 1, 2009	July 1, 2010
	b) Staged Enhanced Schedule Initial Limit 9 ppmv or 0.011 lb/MMBtu; and	July 1, 2011	July 1, 2012
	Final Limit 5 ppmv or 0.0062 lb/MMBtu	January 1, 2013	January 1, 2014
3. Units firing on less than 50%, by volume, PUC quality gas.	Staged Enhanced Schedule Initial Limit 12 ppmv or 0.014 lb/MMBtu; and	July 1, 2010	July 1, 2011
	Final Limit 9 ppmv or 0.011 lb/MMBtu	January 1, 2013	January 1, 2014

Table 1 NOx Emission Limits (continued)			
Category	NOx Limit	Authority to Construct	Compliance Deadline
D. Refinery units			
1. Units with a total rated heat input > 5.0 MMBtu/hr to ≤ 20.0 MMBtu/hr	a) Standard Schedule 9 ppmv or 0.011 lb/MMBtu; or	July 1, 2011	July 1, 2012
	b) Enhanced Schedule 6 ppmv or 0.007 lb/MMBtu	January 1, 2013	January 1, 2014
2. Units with a total rated heat input >20.0 MMBtu/hr to ≤ 110.0 MMBtu/hr	a) Standard Schedule 6 ppmv or 0.007 lb/MMBtu; or	July 1, 2010	July 1, 2011
	b) Staged Enhanced Schedule Initial Limit 9 ppmv or 0.011 lb/MMBtu; and	July 1, 2011	July 1, 2012
	Final Limit 5 ppmv or 0.0062 lb/MMBtu	January 1, 2013	January 1, 2014
3. Units with a total rated heat input > 110.0 MMBtu/hr	Standard Schedule 5 ppmv or 0.0062 lb/MMBtu	N/A	June 1, 2007
4. Units firing on less than 50%, by volume, PUC quality gas.	Staged Enhanced Schedule Initial Limit 12 ppmv or 0.014 lb/MMBtu; and	July 1, 2010	July 1, 2011
	Final Limit 9 ppmv or 0.011 lb/MMBtu	January 1, 2013	January 1, 2014
E. Units, from any Category, that were installed prior to January 1, 2009 and limited by a Permit to Operate to an annual heat input >1.8 billion Btu/year but ≤ 30 billion Btu/year.	Standard Schedule 9 ppmv or 0.011 lb/MMBtu	Twelve months before the next unit replacement but no later than January 1, 2013.	At the next unit replacement but no later than January 1, 2014

Table 1 NOx Emission Limits (continued)			
Category	NOx Limit	Authority to Construct	Compliance Deadline
F. Units at a wastewater treatment facility firing on less than 50%, by volume, PUC quality gas.	Staged Enhanced Schedule Initial Limit 12 ppmv or 0.014 lb/MMBtu; and	July 1, 2010	July 1, 2011
	Final Limit 9 ppmv or 0.011 lb/MMBtu	January 1, 2013	January 1, 2014
G. Units operated by a small producer in which the rated heat input of each burner is less than or equal to 5 MMBtu/hr but the total rated heat input of all the burners in a unit is rated between 5 MMBtu/hr and 20 MMBtu/hr, as specified in the Permit to Operate, and in which the products of combustion do not come in contact with the products of combustion of any other burner.	Standard Schedule 9 ppmv or 0.011 lb/MMBtu	Twelve months before the next unit replacement but no later than January 1, 2013.	At the next unit replacement but no later than January 1, 2014

5.2.4 When a unit is operated on combinations of gaseous fuel and liquid fuel, the NOx limit shall be the heat input weighted average of the applicable limits specified in Sections 5.1.1, as calculated by the following equation:

$$\text{Weighted Average Limit} = \frac{(\text{NOx limit for gaseous fuel x G}) + (\text{NOx limit for liquid fuel x L})}{G + L}$$

Where: G = annual heat input from gaseous fuel
L = annual heat input from liquid fuel

5.2.5 Prior to January 1, 2014, if a unit was designated to comply with a Staged Enhanced Schedule, an operator may redesignate the unit for compliance under Section 5.1.2, provided the unit meets the Initial NOx Limit; emission fees are paid, at time of the application for redesignation, for all past emissions from the unit since January 1, 2009 through the calendar year prior to the calculation date; and the total annual fee is paid from that date forward. The past emissions fee shall be calculated using the equations in Section 5.3 and the Fee Rate in place at the time of that

calculation. The future total annual fees shall be calculated and paid according to Section 5.3.

5.3 Annual Fee Calculation

5.3.1 On and after January 1, 2010, an operator, with units that will comply under Section 5.1.2, shall pay a total annual fee to the District based on the total NOx emissions from those units. That fee shall be calculated in the following manner.

5.3.1.1 The operator shall calculate the total emissions for all units operating at a stationary source that will comply with Section 5.1.2. The total NOx emissions shall be calculated in accordance with Section 5.3.1.3.

5.3.1.2 The total annual emissions fee shall be calculated in accordance with Section 5.3.1.4. These calculations include only the units that have been identified to comply under Section 5.1.2.

5.3.1.3 Total Emissions (TE) Calculation

$$\text{Total TE} = \sum \text{E(unit)}$$

Where: $\sum$E(unit) = Sum of all NOx emissions from each unit, in tons per year.

$$\text{E(unit)} = \frac{EF(Unit)\ x\ AFU(Unit)}{2{,}000\ lb\ per\ ton}$$

Where: E(unit) = Annual NOx emissions for each unit, in tons/year.

EF(Unit) = NOx Emission Limit for the Permit to Operate, in lb/MMBtu

AFU(Unit) = actual amount of fuel, in MMBTU, used by each unit during the previous calendar year.

5.3.1.4 Total Annual Fee Calculation

Total Annual Fee = (Total TE x FR) + Administrative Fee

Where: FR (Fee Rate) = The cost of NOx reductions, in dollars per ton, as established pursuant to Sections 7.2 and 7.6 of District Rule 9510, as adopted on December 15, 2005. Under no circumstances shall the cost of NOx reductions exceed the cost effectiveness

threshold for the Carl Moyer Cost Effectiveness as established by the applicable state law.

Administrative Fee = 4% x (Total TE x FR)

5.3.1.5 The operator shall pay the total annual fee to the District, no later than July 1 of each year, for the emissions of the previous calendar year. The first payment is due to the District no later than July 1, 2010. Should July 1 fall on a day when the District is closed, the payment shall be made by the next District working day after July 1.

5.3.2 Payments shall continue annually until the unit either is permanently removed from use in the San Joaquin Valley Air Basin and the Permit to Operate is surrendered or the operator demonstrates compliance with applicable NOx emissions limits shown in Table 2:

Table 2 Applicable NOx Emission Limits for Section 5.3.2

Category	Date of Compliance Demonstration	Applicable NOx Emissions Limit from Table 1
A. Units with only a Standard Schedule in Table 1.	Either prior to or after the Standard Compliance Deadline	Standard NOx Limit
B. Units with both Standard and Enhanced Schedules in Table 1.	Prior to the Enhanced Compliance Deadline	Standard NOx Limit
	After the Enhanced Compliance Deadline	Enhanced NOx Limit
C. Units with both Standard and Staged Enhanced Schedules in Table 1.	Prior to the Initial Limit Compliance Deadline	Standard NOx Limit
	After the Initial Limit Deadline but before the Final Limit Deadline	Initial NOx Limit then the Final NOx Limit by the applicable Compliance Deadline
	After the Final Limit Deadline	Final NOx Limit

5.3.2.1 The emissions fee for units that operate for less than the full calendar year before demonstrating compliance under Section 5.3.2, shall be based on the actual fuel used during the portion of the calendar year prior to demonstrating that compliance or

removing the unit from operation within the San Joaquin Valley Air Basin.

5.3.3 Operators of units for which an annual emissions fee is provided must also certify that the units meet federal RACT control requirements at the time the annual fee is provided.

5.4 Particulate Matter Control Requirements

5.4.1 To limit particulate matter emissions, an operator shall comply with one of the following requirements:

5.4.1.1 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;

5.4.1.2 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or

5.4.1.3 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall install and properly operate an emission control system that reduces SO_2 emissions by at least 95% by weight; or limit exhaust SO_2 to less than or equal to 9 ppmv corrected to 3.0% O2.

5.4.1.4 Notwithstanding the compliance deadlines indicated in Sections 5.4.1.1 through 5.4.1.3, refinery units, which require modification of refinery equipment to reduce sulfur emissions, shall be in compliance with the applicable requirement in Section 5.4.1 no later than July 1, 2013.

5.4.2 Liquid fuel shall be used only during PUC quality natural gas curtailment periods, provided the requirements of Sections 4.2 and 6.1.5 are met and the fuel contains no more than 15 ppm sulfur, as determined by the test method specified in Section 6.2.

5.5 Low-use Unit

For each unit that was installed prior to January 1, 2009 and is limited to less than or equal to 1.8 billion Btu per calendar year heat input pursuant to a District Permit to Operate, the operator shall comply with the requirement of Sections 5.7 and 7.3 and one of the following:

5.5.1 Tune the unit at least twice per calendar year, (from four to eight months apart) by a qualified technician in accordance with the procedure described in Rule 4304 (Equipment Tuning Procedure for Boilers, Steam Generators, and Process Heaters). If the unit does not operate throughout a continuous six-month period within a calendar year, only one tune-up is required for that calendar year. No tune-up is required for any unit that is not operated during that calendar year; 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; or

5.5.2 Operate the unit in a manner that maintains exhaust oxygen concentrations at less than or equal to 3.00 percent by volume on a dry basis.

5.6 Start-up and Shutdown Provision

On and after the Compliance Deadline specified in Section 5.0, the applicable emission limits of Sections 5.2 Table 1 and 5.5.2 shall not apply during start-up or shutdown, provided an operator complies with the requirements specified below.

5.6.1 The duration of each start-up or each shutdown shall not exceed two hours, except as provided in Section 5.6.3.

5.6.2 The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown.

5.6.3 Notwithstanding the requirement of Section 5.6.1, an operator may submit an application for a Permit to Operate condition to allow more than two hours for each start-up or each shutdown provided the operator meets all of the conditions specified in Sections 5.6.3.1 through 5.6.3.3.

5.6.3.1 The maximum allowable duration of start-up or shutdown will be determined by the APCO. The allowable duration of start-up shall not exceed twelve hours and the allowable duration of shutdown shall not exceed nine hours.

5.6.3.2 The APCO will only approve start-up or shutdown duration longer than two hours when the application meets the following conditions:

5.6.3.2.1 Clearly identifies the control technologies or strategies to be utilized; and

5.6.3.2.2 Describes what physical conditions prevail during start-up or shutdown periods that prevent the controls from being effective; and

5.6.3.2.3 Provides a reasonably precise estimate as to when the physical conditions will have reached a state that allows for the effective control of emissions.

5.6.3.3 The operator shall submit to the APCO any information deemed necessary by the APCO to determine the appropriate length of start-up or shutdown. The information shall include, but is not limited to the following:

5.6.3.3.1 A detailed list of activities to be performed during start-up or shutdown and a reasonable explanation for the length of time needed to complete each activity; and

5.6.3.3.2 A description of the material process flow rates and system operating parameters, etc., the operator plans to evaluate during the process optimization; and an explanation of how the activities and process flow affect the operation of the emissions control equipment; and

5.6.3.3.3 The basis for the requested additional duration of start-up or shutdown.

5.6.4 Permit to Operate (PTO) modifications solely to conditions to comply with the provisions of this rule may be exempt from Best Available Control Technology (BACT) and emission offset requirements if the PTO modifications meet the requirements of Rule 2201 (New and Modified Stationary Source Review Rule) Section 4.2 (BACT Exemptions) and Rule 2201 Section 4.6 (Emission Offset Exemptions).

5.6.5 For existing facilities, a replacement unit installed for the sole purpose of complying with the requirements of this rule shall be considered to be an emission control technique and may be exempt from the Best Available Control Technology (BACT) and Offsets requirements of District Rule 2201 (New and Modified Stationary Source Review Rule) provided that all other requirements of Rule 2201 are met.

5.7 Monitoring Provisions

5.7.1 The operator of any unit subject to the applicable emission limits in Sections 5.2 shall install and maintain an operational APCO approved Continuous Emissions Monitoring System (CEMS) for NOx, CO, and oxygen, or implement an APCO-approved Alternate Monitoring System. An APCO approved CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13 (except subsection h), 40 CFR Part 60 Appendix B (Performance Specifications) and 40 CFR Part 60 Appendix F (Quality Assurance Procedures), and applicable provisions of Rule 1080 (Stack Monitoring). An APCO-approved Alternate Monitoring System shall monitor one or more of the following:

5.7.1.1 Periodic NOx and CO exhaust emission concentrations,
5.7.1.2 Periodic exhaust oxygen concentration,
5.7.1.3 Flow rate of reducing agent added to exhaust,
5.7.1.4 Catalyst inlet and exhaust temperature,
5.7.1.5 Catalyst inlet and exhaust oxygen concentration,
5.7.1.6 Periodic flue gas recirculation rate, or
5.7.1.7 Other operational characteristics.

5.7.2 For units subject to the requirements of Sections 5.5.1 or 5.5.2, the operator shall monitor, at least on a monthly basis, the operational characteristic(s) recommended by the manufacturer and approved by the APCO.

5.7.3 The operator of any unit subject to Section 5.5 shall install and maintain an operational non-resettable, totalizing mass or volumetric flow meter in each fuel line to each unit. Volumetric flow measurements shall be periodically compensated for temperature and pressure. A master meter, which measures fuel to all units in a group of similar units, may satisfy these requirements if approved by the APCO in writing. The cumulative annual fuel usage may be verified from utility service meters, purchase or tank fill records, or other acceptable methods, as approved by the APCO.

5.7.4 Units operated at seasonal sources that are subject to the requirements of 40 CFR 60, Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units) may implement an APCO approved parametric monitoring system (PMS) in lieu of a CEMS for compliance with federal emission limits provided all of the following apply:

5.7.4.1 The boiler is fired solely on California PUC quality natural gas, and

5.7.4.2 The applicable District emission limit for NOx is more stringent than the limit specified in 40 CFR Part 60, Subpart Db.

5.7.5 The APCO shall not approve an alternative monitoring system or parametric monitoring system unless it is documented that continued

operation within ranges of specified emissions-related performance indicators or operational characteristics provides a reasonable assurance of compliance with applicable emission limits. The operator shall source test over the proposed range of surrogate operating parameters to demonstrate compliance with the applicable emission standards.

5.7.5.1 The predictive or parametric monitoring system shall continuously monitor the key parameters which affect the emissions and demonstrate the compliance within the established key parameters operating envelope.

5.7.5.2 Initial and annual real time modeling shall be performed to verify the key parameters operational range.

5.7.6 Monitoring SOx Emissions

5.7.6.1 Operators complying with Sections 5.4.1.1 or 5.4.1.2 shall provide an annual fuel analysis to the District unless a more frequent sampling and reporting period is included in the Permit To Operate. Sulfur analysis shall be performed in accordance with the test methods in Section 6.2.

5.7.6.2 Operators complying with Section 5.4.1.3 by installing and operating a control device with 95% SOx reduction shall propose the key system operating parameters and frequency of the monitoring and recording. The monitoring option proposed shall be submitted for approval by the APCO.

5.7.6.3 Operators complying with Section 5.4.1.3 shall perform an annual source test unless a more frequent sampling and reporting period is included in the Permit To Operate. Source tests shall be performed in accordance with the test methods in Section 6.2.

5.8 Compliance Determination

5.8.1 The operator of any unit shall have the option of complying with either the applicable heat input, in lb/MMBtu, emission limits or the concentration, in ppmv, emission limits specified in Section 5.2. The emission limits selected to demonstrate compliance shall be specified in the source test proposal pursuant to Rule 1081 (Source Sampling).

5.8.2 All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0.

5.8.3 Continuous Emissions Monitoring System (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes to demonstrate compliance with the applicable emission limits. Any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits shall constitute a violation.

5.8.4 For emissions monitoring pursuant to Sections 5.7.1, and 6.3.1 using a portable NOx analyzer as part of an APCO approved Alternate Emissions Monitoring System, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five readings evenly spaced out over the 15-consecutive-minute period.

5.8.5 For emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit.

6.0 Administrative Requirements

6.1 Recordkeeping

The records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO and EPA upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

6.1.1 The operator of any unit operated under the exemption of Section 4.2 shall monitor and record, for each unit, the cumulative annual hours of operation on each fuel other than natural gas during periods of natural gas curtailment

and equipment testing. The NOx emission concentration, expressed in ppmv or lb/MMBtu, for each unit that is operated during periods of natural gas curtailment shall be recorded. Failure to maintain records required by Section 6.1.1 or information contained in the records that demonstrates noncompliance with the conditions for exemption under Section 4.2 will result in loss of exemption status. On and after the applicable compliance schedule specified in Section 5.2 Table 1, any unit losing an exemption status shall be brought into full compliance with this rule as specified in Section 7.2.

6.1.2 The operator of any unit that is subject to the requirements of Section 5.5 shall record the amount of fuel use at least on a monthly basis for each unit. On and after the applicable compliance schedule specified in Section 7.0, in the event that such unit exceeds the applicable annual heat input limit specified in Section 5.5, the unit shall be brought into full compliance with this rule as specified in Section 5.2 Table 1.

6.1.3 The operator of any unit subject to Section 5.5.1 or Section 6.3.1 shall maintain records to verify that the required tune-up and the required monitoring of the operational characteristics of the unit have been performed.

6.1.4 The operator performing start-up or shutdown of a unit shall keep records of the duration of start-up or shutdown.

6.1.5 The operator of any unit firing on liquid fuel during a PUC-quality natural gas curtailment period pursuant to Section 5.4.2 shall record the sulfur content of the fuel, amount of fuel used, and duration of the natural gas curtailment period.

6.2 Test Methods

The following test methods shall be used unless otherwise approved by the APCO and EPA.

6.2.1 Fuel hhv shall be certified by third party fuel supplier or determined by:

6.2.1.1 ASTM D 240-87 or D 2382-88 for liquid hydrocarbon fuels;

6.2.1.2 ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels.

6.2.2 Oxides of nitrogen (ppmv) - EPA Method 7E, or ARB Method 100.
6.2.3 Carbon monoxide (ppmv) - EPA Method 10, or ARB Method 100.
6.2.4 Stack gas oxygen - EPA Method 3 or 3A, or ARB Method 100.
6.2.5 NOx Emission Rate (Heat Input Basis) - EPA Method 19.

6.2.6 Stack gas velocities - EPA Method 2.
6.2.7 Stack gas moisture content - EPA Method 4.

6.2.8 SOx Test Methods

6.2.8.1 Oxides of sulfur – EPA Method 6C, EPA Method 8, or ARB Method 100

6.2.8.2 The SOx emission control system efficiency shall be determined using the following:

$$\% \text{ Control Efficiency} = [(C_{SO2,\ inlet} - C_{SO2,\ outlet}) / C_{SO2,\ inlet}] \times 100$$

Where:

$C_{SO2,\ inlet}$ = concentration of SOx (expressed as SO_2) at the inlet side of the SOx emission control system, in lb/dscf

$C_{SO2,\ outlet}$ = concentration of SOx (expressed as SO_2) at the outlet side of the SOx emission control system, in lb/dscf

6.2.9 Determination of total sulfur as hydrogen sulfide (H_2S) content – EPA Method 11 or EPA Method 15, as appropriate.

6.2.10 Sulfur content of liquid fuel – American Society for Testing and Materials (ASTM) D 6920-03 or ASTM D 5453-99

6.3 Compliance Testing

6.3.1 Each unit subject to the requirements in Section 5.2 shall be source tested to determine compliance with the applicable emission limits at least once every 12 months, (no more than 30 days before or after the required annual source test date).

6.3.1.1 Units that demonstrate compliance on two consecutive 12-month source tests may defer the following 12-month source test for up to 36 months (no more than 30 days before or after the required 36-month source test date). During the 36-month source testing interval, the operator shall tune the unit in accordance with the provisions of Section 5.5.1, and shall monitor, on a monthly basis, the unit's operational characteristics recommended by the manufacturer to ensure compliance with the applicable emission limits specified in Section 5.2.

6.3.1.2 Tune-ups required by Sections 5.5.1 and 6.3.1 do not need to be performed for units that operate and maintain an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored.

6.3.1.3 If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits specified in Section 5.2, the source testing frequency shall revert to at least once every 12 months.

6.3.1.4 Failure to comply with the requirements of Section 6.3.1 or any source test results that exceed the applicable emission limits in Section 5.2 shall constitute a violation of this rule.

6.3.2 In lieu of compliance with Section 6.3.1, compliance with the applicable emission limits in Section 5.2 shall be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units, provided:

6.3.2.1 All units in the group are initially source tested. The emissions from all test runs from units within the group are less than 90% of the permitted value, and the emissions do not vary greater than 25% from the average of all test runs; and

6.3.2.2 All units in a group are similar in terms of rated heat input, make and series, operational conditions, fuel used, and control method. No unit with a rated heat input greater than 100 MMBtu shall be considered as part of the group; and

6.3.2.3 The group is owned by a single owner and is located at a single stationary source; and

6.3.2.4 Selection of the representative unit(s) is approved by the APCO prior to testing; and

6.3.2.5 The number of representative units source tested shall be at least 30% of the total number of units in the group. The representative tests shall rotate each year so that within three years all units in the group have been tested at least once.

6.3.2.6 All units in the group shall have received the similar maintenance and tune-up procedures as the representative unit(s) as listed in the Permit to Operate. The operator shall submit to the APCO the specific maintenance procedures to be performed on each unit that will be included in the group for representative testing. Such maintenance procedures shall be specified in the

Permit to Operate for units that are included in the group for representative testing. Any maintenance work on a unit which has no effect on emissions standards and which is not specified in the maintenance procedures shall be submitted to the APCO for approval before such unit can be included as part of the group for representative testing. Any unit that necessitates any maintenance work which has an effect on emission standards and is beyond the maintenance procedures identified in the Permit to Operate, shall not be included as part of the group for representative testing. The unit shall be source tested in accordance with the provisions of Section 6.3.1; and

6.3.2.7 Should any of the representative units exceed the required emission limits, each of the units in the group shall demonstrate compliance by emissions testing. Failure to complete emissions testing within 90 days of the failed test shall result in the untested units being in violation of this rule. After compliance with the requirements of Section 6.3.2.7 has been demonstrated, subsequent source testing shall be performed pursuant to Sections 6.3.1 or 6.3.2.

6.4 Emission Control Plan (ECP)

6.4.1 No later than January 1, 2010, the operator of any unit shall submit to the APCO for approval an Emissions Control Plan according to the compliance schedule in Section 7.0. For each unit, the plan shall contain the following:

6.4.1.1 Permit to Operate number,
6.4.1.2 Fuel type and hhv,
6.4.1.3 Annual fuel consumption (expressed as Btu/yr),
6.4.1.4 Current emission level, including method used to determine emission level,
6.4.1.5 NOx limit to be satisfied pursuant to Section 5.2 Table 1 or emission fee payment to be made pursuant to Section 5.3, and
6.4.1.6 Plan of actions, including a schedule of increments of progress, which will be taken to satisfy the requirements of Section 5.0 and the compliance schedule in Section 7.0.

7.0 Compliance Schedule

7.1 As shown in Section 5.2 Table 1, the column labeled:

7.1.1 "Authority to Construct" identifies the date by with the operator shall submit an Application for Authority to Construct for each unit subject to the rule.

7.1.2 "Compliance Deadline" identifies the date by which the owner shall demonstrate that each unit is in compliance with the applicable requirements of this rule.

7.2 Any unit that is exempted under Section 4.2 that becomes subject to the emission limits of this rule through the loss of exemption status shall be in full compliance with this rule on and after the date the exemption status is lost.

7.3 Any unit that becomes subject to the emission limits of this rule as a result of exceeding the applicable annual heat input limit specified in Section 5.5 shall be in compliance with the applicable emission limits in Section 5.2 Table 1 and Section 5.4 on and after the date the annual heat input limit is exceeded.

8.0 Calculations

8.1 All ppmv emission limits specified in Section 5.2 are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 3.00 percent oxygen as follows:

$$[\text{ppm NOx}]_{\text{corrected}} = \frac{17.95\%}{20.95\% - [\%O2]_{\text{measured}}} \text{ x } [\text{ppm NOx}]_{\text{measured}}$$

$$[\text{ppm CO}]_{\text{corrected}} = \frac{17.95\%}{20.95\% - [\%O2]_{\text{measured}}} \text{ x } [\text{ppm CO}]_{\text{measured}}$$

8.2 All pounds per million Btu NOx emission rates shall be calculated as pounds of nitrogen dioxide per million Btu of heat input (expressed as hhv).

RULE 4351 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS – PHASE 1 (Adopted October 20, 1994; Amended March 16, 1995; Amended October 19, 1995, Amended August 21, 2003)

1.0 Purpose

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx) from boilers, steam generators, and process heaters to levels consistent with reasonably available control technology (RACT).

2.0 Applicability

This rule applies to any boiler, steam generator or process heater, with a rated heat input greater than 5 million Btu per hour that is fired with gaseous and/or liquid fuels, and is included in a major NOx source. This rule does not apply to any unit located west of Interstate Highway 5 located in Fresno, Kern, or Kings county.

3.0 Definitions

3.1 Annual Heat Input: the total heat input (hhv basis) of fuel burned by a unit in a calendar year as determined from the higher heating value and cumulative annual usage of each fuel.

3.2 Boiler or Steam Generator: any external combustion equipment fired with any fuel used to produce hot water or steam.

3.3 British Thermal Unit (Btu): the amount of heat required to raise the temperature of one pound of water from 59^{o}F to 60^{o}F at one atmosphere.

3.4 Crude Oil: petroleum extracted from the earth which has not been processed in a refining operation.

3.5 Distillate Oil: a petroleum fraction produced by distillation and conforming to ASTM specification D396 for No. 1, 2, or ASTM specification D975 for No. 1-D and 2-D fuels.

3.6 Gaseous Fuel: any fuel that is a gas at standard conditions.

3.7 Heat Input: the heat (hhv basis) released due to fuel combustion in a unit, not including the sensible heat of incoming combustion air and fuel.

3.8 Higher Heating Value (hhv): the total heat liberated per mass of fuel burned (Btu per pound), when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

3.9 Induced Draft Unit: a unit similar to natural draft unit having a stack, which by itself is not of sufficient size to create the necessary draft for proper combustion, and

therefore utilizes a mechanically driven blower in the stack to supplement the draft requirements of the unit.

3.10 Liquid Fuel: any fuel, including distillate and crude oil, which is liquid at standard conditions.

3.11 Major NOx Source: any major source as defined in Rule 2201 (New and Modified Stationary Source Review Rule), with a potential to emit 50 tons or more per year of NOx.

3.12 Natural Draft Unit: a unit that uses no mechanical means to cause air to flow through a combustion chamber, flue, chimney, or space.

3.13 NOx Emissions: the sum of oxides of nitrogen expressed as NO_2 in the flue gas.

3.14 Process Heater: any combustion equipment fired with liquid and/or gaseous fuel which transfers heat from combustion gases to water or process streams. This definition excludes: kilns or ovens used for drying, baking, cooking, calcining, or vitrifying; and unfired waste heat recovery heaters used to recover sensible heat from the exhaust of combustion equipment.

3.15 Public Utilities Commission (PUC) Quality Natural Gas: any gaseous fuel, gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas (at least 80% methane by volume) as specified in PUC General order 58-A.

3.16 PUC Quality Natural Gas Curtailment: means a shortage in the supply of Public Utility Commission (PUC) quality natural gas, due solely to limitations or restrictions in distribution pipelines by the utility supplying the gas, and not due to the cost of natural gas.

3.17 Qualified Technician: a stationary source employee or any personnel contracted by a stationary source operator who has a documented training and a demonstrated experience performing tune-ups on a unit to the satisfaction of the APCO. The documentation of tune-up training and experience shall be made available to the APCO upon request.

3.18 Reasonably Available Control Technology (RACT): the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53762; September 17, 1979).

3.19 Rated Heat Input (million Btu per hour): the heat input capacity specified on the nameplate of the unit. If the unit has been physically modified such that the maximum heat input differs from what is specified on the nameplate, the modified

maximum heat input shall be considered as the rated heat input and made enforceable by Permit to Operate.

3.20 Residual Oil: The heavier oils that remain after the distillate oils and lighter hydrocarbons are distilled off in refinery operations, including No. 4-D, No. 5 and No. 6 fuel oils, Navy Special fuel oil, and Bunker C fuel oil.

3.21 Small Producer: a person who is engaged exclusively in the production of oil, and who produces an average of less than 6000 barrels of crude oil per day from all operations in any one county within the District, and who does not engage in refining, transporting or marketing of refined petroleum products.

3.22 Solid Fuel: any fuel which is a solid at standard conditions.

3.23 Standard Conditions: defined in Rule 1020 (Definitions).

3.24 Unit: a single burner, or group of burners with a common stack, associated with any boiler, steam generator, or process heater as defined in this rule.

4.0 Exemptions

4.1 This rule shall not apply to:

4.1.1 Unfired waste heat recovery boilers that are used to recover heat from the exhaust of combustion turbines or internal combustion engines.

4.1.2 Units fired with solid fuel.

4.2 The requirements of Section 5.0 shall not apply during PUC quality natural gas curtailment to units burning liquid fuel that are normally fired with PUC quality natural gas fuel. This exemption is limited to 336 cumulative hours of operation per calendar year excluding equipment testing not to exceed 48 hours per calendar year.

4.3 The provisions of Section 5.0 shall not apply to the use of a permitted emergency standby unit during equipment breakdowns and during routine maintenance of the primary unit. Operation of the permitted emergency standby unit during the primary equipment breakdowns and routine maintenance, shall not exceed either the total heat input of 9 billion Btus per year or a maximum of 720 hours of operation per year.

5.0 Requirements

NOx and carbon monoxide (CO) emission limits in ppmv are referenced at dry gas conditions, adjusted to 3.00 percent by volume stack gas oxygen in accordance with Section

8.0, and averaged over 60 minutes. A violation of the emission limits as measured by the test methods listed in Section 6.2 will constitute a violation of this rule.

5.1 NOx emissions for any unit with heat input equal to or greater than 9 billion Btu per year, shall not exceed the following levels:

	Gaseous Fuel	Distillate Oil	Residual Oil	Crude Oil
Units Except Natural & Induced Draft Units	95 ppmv or 0.10 lb/MMBtu	115 ppmv or 0.15 lb/MMBtu	165 ppmv or 0.22 lb/MMBtu	165 ppmv or 0.22 lb/MMBtu
Natural & Induced Draft Units	147 ppmv or 0.18 lb/MMBtu	155 ppmv or 0.20 lb/MMBtu	194 ppmv or 0.25 lb/MMBtu	194 ppmv or 0.25 lb/MMBtu

5.2 In lieu of complying with the NOx limits in sections 5.1, the owner/operator of any unit shall comply with the following:

5.2.1 Between May 31, 1995 and May 31, 1997:

5.2.1.1 tune each unit at least once per year in accordance with Rule 4304, (Equipment Tuning Procedure for Boilers, Steam Generators, and Process Heaters); or

5.2.1.2 operate each unit in a manner that maintains stack gas oxygen at less than or equal to 3.00 percent by volume on a dry basis, and averaged over 60 minutes; or

5.2.1.3 operate each unit with a stack gas oxygen trim system set at 3.00 percent or less by volume oxygen, and averaged over 60 minutes.

5.2.2 On or after May 31, 1997, except for units included in section 5.2.3 or 5.2.4 NOx emissions shall not exceed the following:

5.2.2.1 30 ppmv or 0.036 lb/MMBtu when fired on gaseous fuels,
5.2.2.2 40 ppmv or 0.052 lb/MMBtu when fired on liquid fuels.

5.2.3 By May 31, 1999, NOx emissions from natural and induced draft units with rated heat input equal to or less than 40 million Btu per hour, shall not exceed the following limits:

5.2.3.1 74 ppmv or 0.085 lb/MMBtu when fired on gaseous fuels,

5.2.3.2 78 ppmv or 0.102 lb/MMBtu when fired on distillate oil,

5.2.3.3 97 ppmv or 0.127 lb/MMBtu when fired on residual or crude oil.

5.2.4 The compliance date in Section 5.2.2, shall be extended to May 31, 1999, for any unit meeting one or more of the following conditions:

5.2.4.1 by May 31, 1997, the unit is controlled to limit NOx emissions equal to 0.061 pound per million Btu of heat input or 52 ppmv when fired with gaseous fuels and 0.077 pound per million Btu of heat input or 59 ppmv when fired with liquid fuels, or

5.2.4.2 by October 20, 1994, the unit has a rated heat input of less than or equal to 40 million Btu per hour, or

5.2.4.3 the unit will be shutdown or replaced to comply with this rule and identified in the emission control plan, or

5.2.4.4 the method of achieving compliance with this rule includes change of fuel type or quality and identified in the emission control plan, or

5.2.4.5 the unit is fired exclusively on liquid fuel and is owned and operated by a small producer; or

5.2.4.6 the unit is a part of petroleum refining operation engaged in the production of state required reformulated fuels.

Failure to comply with the provisions of this section by May 31, 1999, shall constitute a violation of this rule.

5.2.5 Between May 31, 1995 and May 31, 1999, any unit subject to the requirements of Sections 5.2.3 or 5.2.4, shall comply with the provisions of Sections 5.2.1.1, 5.2.1.2, or 5.2.1.3.

5.3 Any unit with a heat input of less than 9 billion Btu per calendar year, shall comply with the following:

5.3.1 tune each unit at least once per year by a qualified technician in accordance with Rule 4304; or

5.3.2 operate each unit in a manner that maintains stack gas oxygen at less than or equal to 3.00 percent by volume on a dry basis; or

5.3.3 operate each unit with a stack gas oxygen trim system set at 3.00 percent or less by volume oxygen.

5.4 NOx emissions from each unit fired simultaneously on gaseous and liquid fuels shall not exceed the applicable liquid fuel limit specified in sections 5.1, or 5.2. provided the gaseous fuel consumption does not exceed 55 percent of the total fuel consumption.

5.5 Except for units operated in compliance with section 5.2.1, 5.2.5, or 5.3, carbon monoxide (CO) emissions shall not exceed 400 ppmv.

5.6 Monitoring Provisions

5.6.1 The owner of any unit that simultaneously fires combinations of different fuels shall install and maintain totalizing mass or volumetric flow rate meters in each fuel line.

5.6.2 The owner of any unit equipped with NOx reduction control technology subject to the requirements of this rule, shall install and maintain appropriate provisions to monitor the operational characteristics of the NOx control system.

5.7 Compliance Determination

5.7.1 The owner of any unit shall have the option of complying with either the heat input basis (lb/MMBtu) emission limits or the concentration (ppmv) emission limits specified in Section 5.0. Compliance determination shall be done using the applicable test methods in Section 6.2. The basis selected to demonstrate compliance shall be specified in the emission control plan required by section 6.4.

5.7.2 All emission measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Compliance determination shall be conducted with the unit operating at conditions representative of normal operations.

6.0 Administrative Requirements

6.1 Recordkeeping

The records required by Sections 6.1.1 through 6.1.3 shall be maintained for a period of five calendar years and shall be made available to the APCO upon request. Failure to maintain records or information contained in the records that demonstrates noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

6.1.1 The owner of each unit shall monitor and record for each unit the hhv and cumulative annual use of each fuel.

6.1.2 The owner of any unit operated under the exemption of Section 4.2 shall monitor and record for each unit the cumulative annual hours of operation on each nongaseous fuel during curtailment and during testing. Failure to maintain records required by Section 6.1.2 or information contained in the records that demonstrates noncompliance with the conditions for exemption under Section 4.2 will result in loss of exemption status. On and after August 21, 2003, any unit losing an exemption status shall be brought into full compliance with this rule as specified in Section 7.3.

6.1.3 The owner of any unit operated under the exemption of Section 4.3 shall monitor and record for each unit the cumulative annual hours of operation and the cumulative annual fuel heat input in Btus. Failure to maintain records required by Section 6.1.3 or information contained in the records that demonstrates noncompliance with the conditions for exemption under Section 4.3 will result in loss of exemption status. Any unit losing an exemption status shall be brought into full compliance with this rule as specified in Section 7.3.

6.2 Test Methods

6.2.1 Fuel hhv shall be certified by third party fuel supplier or determined by:

6.2.1.1 ASTM D 240-87 or D 2382-88 for liquid hydrocarbon fuels;

6.2.1.2 ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels.

6.2.2 Oxides of nitrogen (ppmv) - EPA Method 7E, or ARB Method 100.

6.2.3 Carbon monoxide (ppmv) - EPA Method 10, or ARB Method 100.
6.2.4 Stack gas oxygen - EPA Method 3 or 3A, or ARB Method 100.
6.2.5 NOx Emission Rate (Heat Input Basis) - EPA Method 19.

6.2.6 Stack gas velocities - EPA Method 2.

6.2.7 Stack gas moisture content - EPA Method 4.

6.3 Compliance Testing

6.3.1 Units subject to the requirements of this rule except units subject to section 5.3, and 5.2.1, shall be tested to determine compliance with the applicable requirements of Sections 5.0 at least once every 12 months in which fuel consumption exceeds 9 billion Btus. Gaseous fuel fired units demonstrating compliance on two consecutive 12-month source tests shall be tested not less than once every 36 months. On and after August 21, 2003, during the 36-month source testing interval, the operator shall tune the unit in

accordance with the provisions of Section 5.2.1, and shall monitor, on a monthly basis, the unit's operational characteristics recommended by the manufacturer to ensure compliance with the applicable emission limits of this rule. Tune-ups required by Section 5.3.1 and Section 6.3.1 do not need to be performed for units that operate and maintain an APCO approved Continuous Emissions Monitoring System (CEMS) or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored. If the result of the 36-month source testing demonstrates that the unit does not meet the applicable emission limits of this rule, the source testing frequency shall revert to at least once every 12 months. Failure to comply with the requirements Section 6.3.1, or any source test results that exceed the applicable emission limits of this rule shall constitute a violation of this rule.

6.3.2 On and after August 21, 2003, in lieu of compliance with Section 6.3.1, compliance with the applicable limits shall be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units, provided:

6.3.2.1 All units in the group are initially source tested. The emissions from all test runs from units within the group are less than 90% of the permitted value, and the emissions do not vary greater than 25% from the average of all test runs; and

6.3.2.2 All units in a group are similar in terms of rated heat input, make and series, operational conditions, fuel used, and control method. No unit with a rated heat input greater than 100 MMBtu shall be considered as part of the group; and

6.3.2.3 The group is owned by a single owner and is located at a single stationary source; and

6.3.2.4 Selection of the representative unit(s) is approved by the APCO prior to testing; and

6.3.2.5 The number of representative units source tested shall be at least 30% of the total number of units in the group. The representative tests shall rotate each year so that within three years all units in the group have been tested at least once.

6.3.2.6 All units in the group shall have received similar maintenance and tune-up procedures as the representative unit(s) as listed in the Permit to Operate. By December 30, 2003, the operator shall submit to the APCO the specific maintenance procedures to be performed on each unit that will be included in the group for representative testing. Such maintenance procedures shall be

specified in the Permit to Operate for units that are included in the group for representative testing. Any maintenance work on a unit which has no effect on emissions standards and which is not specified in the maintenance procedures shall be submitted to the APCO for approval before such unit can be included as part of the group for representative testing. Any unit that necessitates any maintenance work which has an effect on emission standards and is beyond the maintenance procedures identified in the Permit to Operate, shall not be included as part of the group for representative testing. The unit shall be source tested in accordance with the provisions of Section 6.3.1; and

6.3.2.7 Should any of the representative units exceed the required emission limits, each of the units in the group shall demonstrate compliance by emissions testing. Failure to complete emissions testing within 90 days of the failed test shall result in the untested units being in violation of this rule. After compliance with the requirements of Section 6.3.2.7 has been demonstrated, subsequent source testing shall be performed pursuant to Sections 6.3.1 or 6.3.2.

6.4 Emission Control Plan

The owner/operator of any unit subject to this rule shall submit to the APCO an emissions control plan of actions to be taken to satisfy the requirements of section 5.0. Such plan shall identify the type of control to be applied to each unit and a construction schedule, or shall include source test results to demonstrate that the unit is already in compliance with applicable requirements. Any modification to the emission control plan shall be subject to APCO's review and approval prior to implementation. Failure to implement the provisions of the approved emission control plan, shall constitute a violation of this rule.

7.0 Compliance Schedule

7.1 The owner/operator of any unit required to comply with section 5.1 or section 5.3, shall comply with the following schedule:

7.1.1 By April 20, 1995, submit to the APCO an emission control plan pursuant to section 6.4, and a complete application for Authority to Construct if necessary.

7.1.2 By May 31, 1995, demonstrate full compliance with all applicable provisions of this rule.

7.2 The owner/operator of any unit complying with section 5.2, shall comply with the following schedule:

7.2.1 By April 20, 1995, submit to the APCO an emission control plan pursuant to section 6.4.

7.2.2 By May 31, 1995, comply with the provisions of section 5.2.1 or 5.2.5.

7.2.3 By May 31, 1995, submit a complete application for Authority to Construct for all modifications necessary to comply with the requirements of section 5.2.2.

7.2.4 By May 31, 1997, demonstrate full compliance with all applicable provisions of this rule, including the requirements of section 5.2.2.

7.2.5 By May 31, 1997, any unit subject to the provisions of section 5.2.3 or 5.2.4, shall submit a complete application for Authority to Construct for all modifications necessary to comply with the requirements of these sections.

7.2.6 By May 31, 1999, demonstrate full compliance with all applicable provisions of this rule, including the requirements of section 5.2.2 and 5.2.3.

7.3 A unit that exceeds the fuel heat input or hours of operation exemption limit as specified in Sections 4.2, 4.3, or 5.3 shall comply with the applicable requirements of section 5.1 on and after the date the limit is exceeded.

8.0 Calculations

8.1 All ppmv emission limits specified in Section 5.0 are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 3.00 percent oxygen as follows:

$$[\text{ppm NOx}]_{\text{corrected}} = \frac{17.95\%}{20.95\% - [\%O2]_{\text{measured}}} \text{ x } [\text{ppm NOx}]_{\text{measured}}$$

$$[\text{ppm CO}]_{\text{corrected}} = \frac{17.95\%}{20.95\% - [O2]_{\text{measured}}} \text{ x } [\text{ppm CO}]_{\text{measured}}$$

8.2 All lb/MMBtu NOx emission rates shall be calculated as pounds of nitrogen dioxide per million Btu of heat input (hhv).

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RULE 4352 SOLID FUEL FIRED BOILERS, STEAM GENERATORS AND PROCESS HEATERS (Adopted September 14, 1994; Amended October 19, 1995; Amended May 18, 2006; Amended December 15, 2011)

1.0 Purpose

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx) and carbon monoxide (CO) from solid fuel fired boilers, steam generators and process heaters.

2.0 Applicability

This rule applies to any boiler, steam generator or process heater fired on solid fuel. Heat may be supplied by liquid or gaseous fuels for start-ups, shutdowns, and during other flame stabilization periods, as deemed necessary by the owner/operator.

3.0 Definitions

3.1 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.2 ARB: California Air Resources Board.

3.3 Block 24-hour Average: the arithmetic average of the hourly emission rates of a unit as measured over 24 one-hour periods, daily, from 12:00 AM to 11:59 PM, excluding periods of system calibration.

3.4 Boiler or Steam Generator: any combustion equipment fired directly or indirectly with any solid fuel used to produce hot water or steam.

3.5 British Thermal Unit (Btu): the amount of heat required to raise the temperature of one pound of water from 59°F to 60°F at one atmosphere.

3.6 EPA: United States Environmental Protection Agency.

3.7 Flame Stabilization: any period in which supplemental use of a liquid or gaseous fuel is required in instances including control of one or more pollutants, or to alleviate or prevent unanticipated equipment outages or emergencies, directly affecting the public health, safety, or welfare, which would result from electric power outages.

3.8 Gaseous Fuel: any fuel which is a gas at standard conditions.

3.9 Heat Input: the heat of combustion released due to burning a fuel in a unit, based on the higher heating value of the fuel, not including the sensible heat of incoming combustion air and fuel.

3.10 Higher Heating Value (hhv): the total heat liberated per mass of fuel burned (Btu per pound), when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

3.11 Hot Standby Condition: a condition in which all fuel feed has been curtailed and the boiler is secured at a temperature greater than the current ambient temperature.

3.12 Liquid Fuel: any fuel which is a liquid at standard conditions.

3.13 NOx Emissions: the sum of oxides of nitrogen (NO) in the flue gas, collectively expressed as nitrogen dioxide.

3.14 Potential to Emit: as defined in Rule 2201 (New and Modified Stationary Source Rule).

3.15 Process Heater: any combustion equipment fired on solid fuel, which transfers heat from combustion gases to water or process streams. Process heaters exclude kilns or ovens used for drying, baking, cooking, calcining, heat treating or vitrifying.

3.16 Rated Heat Input (million Btu per hour): the heat input capacity specified on the nameplate of the unit. If the unit has been physically modified such that its maximum heat input differs from what is specified on the nameplate, the modified maximum heat input shall be considered as the rated heat input and made enforceable by Permit to Operate.

3.17 Shutdown: the period of time during which a unit is taken from operational to non-operational status by allowing it to cool down from its operating temperature and pressure to an ambient temperature, or to a hot standby condition. Duration of shutdown shall not exceed 12 hours unless a longer time has been authorized under Section 5.3.4.

3.18 Solid Fuel: any fuel which is a solid at standard conditions.

3.19 Standard Conditions: defined in Rule 1020 (Definitions).

3.20 Start-up: the period of time during which a unit is heated to the operating temperature and pressure from a shutdown status or hot standby condition.

3.21 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.22 Unit: any boiler, steam generator or process heater as defined in this rule. For the purpose of this rule, two boilers, two steam generators, or two process heaters may be considered as one unit, if, they are operated as one single unit sharing a single common stack and have been issued only one District Permit to Operate (PTO).

4.0 Exemptions

Except for complying with the recordkeeping requirements of Section 6.1, this rule shall not apply to units operated at a Stationary Source that has a potential to emit less than 10 tons per year of oxides of nitrogen (NOx) or volatile organic compounds (VOC).

5.0 Requirements

5.1 The owner/operator of a boiler, steam generator or process heater shall not operate such a unit in a manner that results in NOx and CO emissions exceeding the limits specified in Table 1. The emission limits measured in parts per million by volume (ppmv) are referenced at dry stack gas conditions and shall be corrected to the applicable percent O_2 or CO_2 specified in Table 1 in accordance with EPA Method 19.

Table 1 - NOx and CO Emission Limits

Fuel Type	Emission Limits effective until December 31, 2012		Emission Limits effective on and after January 1, 2013	
	NOx Limit	CO Limit	NOx Limit	CO Limit
Municipal Solid Waste	200 ppmv corrected to 12% CO_2	400 ppmv corrected to 3% O_2	165 ppmv corrected to 12% CO_2	400 ppmv corrected to 3% O_2
Biomass	115 ppmv corrected to 3% O_2		90 ppmv corrected to 3% O_2	
All Others	115 ppmv corrected to 3% O_2		65 ppmv corrected to 3% O_2	

5.2 All NOx and CO emission limits shall be based on a block 24-hour average. A violation of the emission limits as measured by the test methods listed in Section 6.3 shall constitute a violation of this rule.

5.3 Start-up and Shutdown Provisions

The applicable emission limits of Section 5.1 shall not apply during start-up or shutdown provided an operator complies with the requirements specified below.

5.3.1 The duration of each shut down shall not exceed 12 hours, except as provided in Section 5.3.4.

5.3.2 Except as provided in Section 5.3.4, the duration of each start-up shall not exceed 96 hours. If curing of the refractory is required after a modification to the unit is made, the duration of start-up shall not exceed 192 hours, except as provided in Section 5.3.4.

5.3.3 The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown.

5.3.4 Notwithstanding the requirements of Section 5.3.1 or Section 5.3.2, the APCO, ARB, and EPA may approve a longer start-up or shutdown duration, if an operator submits an application for a Permit to Operate which provides a justification for the requested additional duration.

5.3.4.1 The maximum allowable duration of start-up or shutdown will be determined by the APCO, ARB, and EPA.

5.3.4.2 At a minimum, a justification for increased start-up or shutdown duration shall include the following:

5.3.4.2.1 A clear identification of the control technologies or strategies to be utilized; and

5.3.4.2.2 A description of what physical conditions prevail during start-up or shutdown periods that prevent the controls from being effective; and

5.3.4.2.3 A reasonably precise estimate as to when the physical conditions will have reached a state that allows for the effective control of emissions; and

5.3.4.2.4 A detailed list of activities to be performed during start-up or shutdown and a reasonable explanation for the length of time needed to complete each activity; and

5.3.4.2.5 A description of the material process flow rates and system operating parameters, etc., the owner/operator plans to evaluate during the process optimization; and an explanation of how the activities and process flow affect the operation of the emissions control equipment; and

5.3.4.2.6 Basis for the requested additional duration of start-up or shutdown.

5.4 Monitoring Provisions

The owner/operator of any unit using ammonia injection as a NOx control technique, shall operate a Continuous Emissions Monitoring system (CEM) to monitor and record NOx concentrations, CO_2 or O_2 concentrations, as well as the NOx emission rate. Continuous Emission Monitoring systems shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7 (c) and 60.13. CEMs must also satisfy the Performance Specifications of 40 CFR 60 Appendix B and the Relative Accuracy Test Audit of Appendix F.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 Except for municipal solid waste (MSW) fired units; the owner/operator of any unit subject to the requirements of this rule shall maintain, on a monthly basis, an operating log for each unit that includes the following information:

6.1.1.1 Type and quantity of fuel used.

6.1.1.2 The higher heating value (hhv) of each fuel as determined by Section 6.3, or as certified by a third party fuel supplier.

6.1.2 The records required by Section 6.1.1 shall be retained on site for a period of five years, and shall be made available to the APCO, ARB, and EPA upon request.

6.2 Compliance Source Testing

6.2.1 Each unit subject to the requirements of this rule shall be tested at least once every 12 months, to determine compliance with the applicable requirements of Section 5.0.

6.2.2 All emission measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate.

6.2.3 No compliance determination shall be established within two hours after a period in which fuel flow to the unit is zero, or is shut off for 30 minutes or longer.

6.3 Test Methods

6.3.1 Compliance with the requirements of Section 5.0 shall be determined in accordance with the following source test procedures unless otherwise approved by the APCO, ARB, and EPA:

6.3.1.1 Oxides of nitrogen (ppmv) – EPA Method 7E, or ARB Method 100.

6.3.1.2 Carbon monoxide (ppmv) - EPA Method 10, or ARB Method 100.

6.3.1.3 Stack gas oxygen - EPA Method 3 or 3A, or ARB Method 100.

6.3.1.4 NOx emission rate (Heat input basis) - EPA Method 19.

6.3.1.5 Stack gas velocities - EPA Method 2.

6.3.1.6 Stack gas moisture content - EPA Method 4.

6.3.1.7 Solid fuel higher heating value (hhv) - ASTM Method D 5865-10, or

6.3.1.8 Solid fuel higher heating value (hhv) - ASTM Method E 711-87.

6.3.1.9 ASTM D 1826-94 or D 1945-96 in conjunction with ASTM D 3588-98 for gaseous fuels.

RULE 4354 GLASS MELTING FURNACES (Adopted September 14, 1994; Amended April 16, 1998; Amended February 21, 2002, Amended August 17, 2006, Amended October 16, 2008, Amended September 16, 2010; Amended May 19, 2011)

1.0 Purpose

The purpose of this rule is to limit emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), oxides of sulfur (SOx), and particulate matter (PM10) from glass melting furnaces.

2.0 Applicability

The provisions of this rule shall apply to any glass melting furnace.

3.0 Definitions

3.1 Air-fuel Firing: operation of a glass melting furnace where greater than 50% of the oxidant for the fuel comes from ambient air. 100% air-fuel fired means operation of a glass melting furnace where the oxidant is exclusively ambient air.

3.2 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.3 Block 24-hour Average: the arithmetic average of the hourly emission rates of a furnace as measured over 24 one-hour periods, daily, from 12:00 AM to 11:59 PM, excluding periods of system calibration.

3.4 California Air Resources Board (ARB): as defined in Rule 1020 (Definitions).

3.5 Carbon Monoxide (CO): emissions of carbon monoxide, a colorless and odorless gas resulting from incomplete combustion of fuel.

3.6 Commercial Propane: a gaseous fuel composed primarily of propane.

3.7 Condensable PM10: PM10 that is vapor phase at stack conditions, but which condenses or reacts upon cooling and dilution in the ambient air to form solid or liquid PM immediately after discharge from the stack.

3.8 Container Glass: any glass manufactured by pressing, blowing in molds, drawing, rolling, or casting which is used as a container.

3.9 Continuous Emissions Monitoring System (CEMS): continuous emissions monitoring system.

3.10 Dry Standard Cubic Foot or Feet (Dscf): dry gas volume corrected to standard conditions.

3.11 Environmental Protection Agency (EPA): United States Environmental Protection Agency, or any person designated to act on its behalf.

3.12 Fiberglass: material consisting of fine filaments of glass that are combined in yarn and woven or spun into fabrics, or that are used as reinforcement in other materials or in masses as thermal or as acoustical insulating products for the construction industry.

3.13 Filterable PM10: PM10 that is directly emitted by a source as a solid or liquid at stack or release conditions and captured on the filter of a stack test train.

3.14 Flat glass: any glass produced by the float, sheet, rolled, or plate glass process which is used in windows, windshields, tabletops, or similar products.

3.15 Furnace Battery: two or more glass melting furnaces that exhaust to a common stack.

3.16 Furnace Rebuild: a cold tank repair which is commenced after the end of a furnace campaign period or expected life cycle of a furnace.

3.17 Idling: the operation of a furnace at less than 25 percent of the permitted glass production capacity or fuel use capacity as stated on the Permit to Operate (PTO).

3.18 Key System Operating Parameter: a parameter used to ensure compliance with an emission limit. A key system operating parameter may be any operating parameter that would affect the emissions performance of the particular equipment unit to which the emission limit applies. Examples include, but are not limited to, temperature, pressure drop, airflow rate, or electrostatic precipitator voltage.

3.19 Liquefied Petroleum Gas (LPG): LPG is a general term for the following gases: commercial propane, commercial butane, propane-butane (PB) mixtures, and special duty propane, although some people consider commercial propane separate from LPG.

3.20 Multiple Furnaces: two or more glass melting furnaces at a single facility that do not exhaust to a common stack.

3.21 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.22 Oxidant: a substance that oxidizes another substance or an oxidizing agent.

3.23 Oxides of Nitrogen (NOx): the sum of oxides of nitrogen in the flue gas, collectively expressed as nitrogen dioxide (NO_2).

3.24 Oxides of Sulfur (SOx): the sum of compounds containing sulfur and oxygen, such as sulfur dioxide (SO2) and sulfur trioxide (SO3).

3.25 Oxygen-Assisted Combustion: operation of a glass melting furnace where the oxidant is greater than the oxygen content in ambient air or greater than 20.9 percent oxygen.

3.26 Oxy-fuel Fired: operation of a glass melting furnace where greater than 50% of the oxidant for the fuel is provided from enriched oxygen streams.

3.27 Parts Per Million by Volume (ppmv): the ratio of the number of gas molecules of a given species or group of species, to the number of millions of a total gas molecules.

3.28 Parts Per Million by Weight (ppm): the ratio of the weight of the given species or group of species, to the weight of total mixture and the ratio multiplied by one million.

3.29 Permitted Glass Production Capacity: the maximum pull rate as stated in the Permit to Operate (PTO).

3.30 PM10: as defined in Rule 1020 (Definitions).

3.31 Potential to Emit: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.32 Primary Furnace Combustion System: the burners in a furnace that are used during production of glass.

3.33 Permit-to Operate (PTO): a Permit To Operate issued by the District.

3.34 PUC-quality Natural Gas: a gaseous fuel that meets the requirements specified in California Public Utilities Commission (PUC) General Order 58-A. PUC-quality natural gas also means that the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet.

3.35 Pull Rate: the amount of glass coming out of a glass melting furnace, expressed in short tons per day.

3.36 Rolling Average: the arithmetic average of the emission rates of a furnace over a contiguous period, excluding periods of system calibration.

3.36.1 For rolling 30-day averages, the averaged emissions are daily emissions and the contiguous period is 30 days.

3.36.2 For rolling 24-hour averages, the averaged emissions are hourly emissions and the contiguous period is 24 hours.

3.36.3 For rolling three hour averages, the averaged emissions are hourly emissions and the contiguous period is three hours.

3.37 Shutdown: the period of time during which a glass-melting furnace is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to a cold or ambient temperature as the fuel supply is turned off.

3.38 Standard Conditions: as defined in Rule 1020 (Definitions).

3.39 Start-up: the period of time, after initial construction or a furnace rebuild, during which a glass melting furnace is heated to operating temperature by the primary furnace combustion system, and systems and instrumentation are brought to stabilization.

3.40 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.41 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

4.0 Exemptions

4.1 Except for Section 6.8, the provisions of this rule shall not apply to electric glass melting furnaces where all the heat is supplied by an electric current from electrodes submerged in the molten glass, except that heat may be supplied by other fuels for start-up when the furnace contains no molten glass.

4.2 Except for Section 6.8, the provisions of this rule shall not apply to any glass melting furnace that is part of a stationary source with a total potential to emit, for all processes, less than ten (10.0) tons per year of NOx and less than ten (10.0) tons per year of VOC.

4.3 Except for Section 6.8, the emission limits of Sections 5.3 and 5.4 and the monitoring requirements of Sections 5.9.3 and 5.9.4 shall not apply to a glass melting furnace that meets all of the following conditions:

4.3.1 The furnace has permitted glass production capacity less than five (5) tons per day;

4.3.2 The actual total NOx emissions for the facility are less than eight (8) tons per year; and

4.3.3 The actual total VOC emissions for the facility are less than eight (8) tons per year.

4.4 The emission limits in Tables 1 through 4 shall not apply during periods of start-up, shutdown, or idling, provided the operator complies with the applicable requirements of Sections 5.5, 5.6, 5.7 and 6.7.

5.0 Requirements

5.1 NOx Emission Limits

5.1.1 Except as specified in Section 4.4, the operator of any glass melting furnace shall not operate a furnace in such a manner that results in NOx-emissions exceeding the limits in Table 1. The deadlines to comply with the emission limits are specified in Section 7.0.

Table 1 – NOx Emission Limits in pounds NOx per ton glass produced

Type of Glass Produced	Tier 2 NOx limit	Tier 3 NOx limit	Tier 4 NOx limit
Container Glass	4.0 [A]	1.5 [B]	not available
Fiberglass	4.0 [A]	1.3 [A, C] 3.0 [A, D]	not available
Flat Glass Standard Option	9.2 [A] 7.0 [B]	5.5 [A] 5.0 [B]	3.7 [A] 3.2 [B]
Flat Glass Enhanced Option	9.2 [A] 7.0 [B]	5.5 [A] 5.0 [B]	3.4 [A] 2.9 [B]
Flat Glass Early Enhanced Option	9.2 [A] 7.0 [B]	not available	3.4 [A] 2.9 [B]

[A] Block 24-hour average
[B] Rolling 30-day average
[C] Not subject to California Public Resources Code Section 19511
[D] Subject to California Public Resources Code Section 19511

5.1.2 Instead of each furnace individually meeting the applicable Table 1 Tier 2 NOx limit, an operator may choose to meet the Tier 2 NOx limit for multiple furnaces or furnace batteries by considering the multiple furnaces or furnace battery as a single unit. An operator choosing this option shall conform to the provisions of Sections 9.1 through 9.6.2 for Tier 2 NOx.

5.1.3 Instead of each furnace individually meeting the applicable Table 1 Tier 3 NOx limit, an operator of multiple furnaces or a furnace battery may choose to meet the applicable emission limit by considering the multiple furnaces or furnace battery as a single unit. An operator choosing this option shall conform to the provisions of Sections 9.6 through 9.7.8.5 for Tier 3 NOx.

5.1.4 A flat glass operator who commits to meet the Table 1 Tier 4 early enhanced option NOx limits shall comply with the limits according to the deadlines specified in Section 7.2.2. After January 1, 2011, an operator who commits

to meet the early enhanced NOx limits schedule is not eligible to choose a different compliance option and applicable deadlines.

5.2 CO and VOC Emission Limits

5.2.1 Except as specified in Section 4.4, the operator of any glass melting furnace shall not operate a furnace in such a manner that results in CO or VOC emissions exceeding the limits in Table 2.

Table 2 - CO and VOC Emission Limits – rolling three hour average
(ppmv limits are referenced at 8% O_2 and dry stack conditions)

Type of Glass Produced	Firing Technology	CO Limit	VOC Limit
Container Glass or Fiberglass	100% air fired furnace	300 ppmv	20 ppmv
	Oxygen-assisted or Oxy-fuel furnace	1.0 lb/ton glass produced	0.25 lb/ton glass produced
Flat Glass	100% air fired furnace	300 ppmv	20 ppmv
	Oxygen-assisted or Oxy-fuel furnace	0.9 lb/ton glass produced	0.10 lb/ton glass produced

5.2.2 On and after January 1, 2009, instead of each furnace individually meeting the applicable CO or VOC or both emission limit in Table 2, an operator may choose to meet the CO or VOC or both emission limit for multiple furnaces or furnace batteries by considering the multiple furnaces or furnace battery as a single unit. An operator choosing this option shall conform to the provisions of Sections 9.6 through 9.7.8.5 for CO emissions or VOC emissions or both.

5.3 SOx Emission Limits

5.3.1 Effective through December 31, 2010, in order to limit SOx emissions, all glass melting furnaces subject to Table 1 emission limits shall fire on PUC-quality natural gas, commercial propane, or LPG on and after March 31, 2008. Liquid fuel may be used as backup fuel or standby fuel provided the liquid fuel contains no more than 15 ppm of sulfur and the furnace exhaust is controlled by a SOx emission control system with control system efficiency of 50% or greater. If a furnace meets the applicable Table 3 SOx limit while firing on backup fuel or standby fuel, the 50% SOx emission control system efficiency requirement shall not apply.

5.3.2 Effective on and after January 1, 2011, except as specified in Section 4.4 and Section 5.3.3, each furnace shall meet the applicable SOx emission limit from Table 3.

Table 3 - SOx Emission Limits in pounds SOx per ton glass produced		
Type of Glass Produced	Firing Technology	SOx Limit
Container Glass	Oxy-fuel furnaces and ≥ 25.0% of total cullet is mixed color cullet	1.1 [B]
	All other container glass furnaces	0.90 [B]
Fiberglass	All technologies	0.90 [C]
Flat Glass	All technologies	1.7 [A] 1.2 [B]

[A] Block 24-hour average
[B] Rolling 30-day average
[C] Rolling 24-hour average

5.3.3 Effective January 1, 2011 and ending on the compliance date detailed in Section 7.2.2, a flat glass furnace operator electing the Tier 4 early enhanced option shall fire on PUC-quality natural gas, commercial propane, or LPG. Liquid fuel may be used as backup fuel or standby fuel provided the liquid fuel contains no more than 15 ppm of sulfur and the furnace exhaust is controlled by a SOx emission control system with control system efficiency of 50% or greater. If a furnace meets the applicable Table 3 SOx limit while firing on backup fuel or standby fuel, the 50% SOx emission control system efficiency requirement shall not apply. On and after the compliance date in Section 7.2.2, a flat glass furnace operator electing the Tier 4 early enhanced option shall be subject to the flat glass SOx emission limit in Table 3.

5.3.4 The amount of mixed color cullet used shall be determined as a rolling 30-day average.

5.3.5 Instead of each furnace individually meeting the applicable SOx limit in Table 3, an operator may choose to meet the SOx limit for multiple furnaces or furnace batteries by considering the multiple furnaces or furnace battery as a single unit. An operator choosing this option shall conform to the provisions of Sections 9.6 through 9.7.8.5 for SOx emissions.

5.4 PM10 Emission Limits

5.4.1 Except as specified in Section 4.4, the operator of any glass melting furnace shall not operate a furnace in such a manner that results in PM10 emissions exceeding the applicable limits in Table 4, where total PM10 includes both filterable PM10 and condensable PM10. The deadlines to comply with the PM10 emission limits are specified in Section 7.0.

Table 4 - PM10 Emission Limits in pounds total PM10 per ton glass produced Block 24-hour average		
Type of Glass Produced	Firing Technology	PM10 Limit
Container Glass	All technologies	0.50
Fiberglass	All technologies	0.50
Flat Glass	All technologies	0.70

5.4.2 Instead of each furnace individually meeting the applicable PM10 limit in Table 4, an operator may choose to meet the PM10 limit for multiple furnaces or furnace batteries by considering the multiple furnaces or furnace battery as a single unit. An operator choosing this option shall conform to the provisions of Sections 9.6 through 9.7.8.5 for PM10 emissions.

5.5 Start-up Requirements

5.5.1 The operator shall submit a request for a start-up exemption to the APCO, ARB, and EPA in conjunction with or in advance of an application for Authority to Construct (ATC) associated with a furnace rebuild.

5.5.2 The operator shall submit to the APCO, ARB, and EPA any information deemed necessary by the APCO, ARB, or EPA to determine the appropriate length of start-up exemption. This information shall include, but is not limited to:

5.5.2.1 A detailed list of activities to be performed during start-up, and a reasonable explanation for the length of time needed to complete each activity;

5.5.2.2 A description of the material process flow rates, system operating parameters, etc., that the operator plans to evaluate during the process optimization;

5.5.2.3 Clearly identified control technologies or strategies to be utilized;

5.5.2.4 Explicit description of what physical conditions prevail during start-up periods that prevent the controls from being effective; and

5.5.2.5 Reasonably precise estimate as to when physical conditions will have reached a state that allows for the effective control of emissions.

5.5.3 Start up exemptions shall begin upon activation of the primary combustion system.

5.5.4 The approved length of the start-up exemption shall be determined by the APCO, ARB, and EPA at the time of the ATC issuance, but in any case, it shall not exceed the amount of time specified in Table 5. The approval for the startup exemption shall be in writing from each agency.

Table 5 – Maximum Start-up Time		
Type of Furnace	Maximum Start-up NOx control system that does not meet Section 5.5.4.2 provisions	Maximum Start-up NOx control system that meets Section 5.5.4.2 provisions
Container glass	70 days	100 days
Fiber-glass	40 days	105 days
Flat glass	104 days	208 days

5.5.4.1 Maximum start-up time for furnaces with NOx controls that do not meet any of the conditions of Section 5.5.4.2 is listed in the center column of Table 5.

5.5.4.2 Maximum start-up time column as shown in the rightmost column of Table 5 shall be the maximum startup time if the NOx control system meets one or more of the following conditions:

5.5.4.2.1 Is innovative,

5.5.4.2.2 Is not in common use,

5.5.4.2.3 Is not readily available from a commercial supplier,

5.5.4.2.4 Is funded as original research by a public agency.

5.5.5 During start-up period, the stoichiometric ratio of the primary furnace combustion system shall not exceed 5% excess oxygen, as calculated from the actual fuel and oxidant stream flow measurements for combustion in the glass melting furnace, except during the time when the oxidant stream for an oxy-fuel fired furnace contains at least 50% oxygen.

5.5.6 The emission control system shall be in operation as soon as technologically feasible during start-up to minimize emissions.

5.5.7 Notifications shall be performed and records kept in accordance with Section 6.7.

5.6 Shutdown Requirements

5.6.1 The duration of shutdown, as measured from the time the furnace operations drop below the idle threshold specified in Section 3.17 to when all emissions from the furnace cease, shall not exceed 20 days.

5.6.2 The emission control system shall be in operation whenever technologically feasible during shutdown to minimize emissions.

5.6.3 Notifications shall be performed and records kept in accordance with Section 6.7.

5.7 Idling Requirements

5.7.1 The emission control system shall be in operation whenever technologically feasible during idling to minimize emissions.

5.7.2 Emissions of NOx, CO, VOC, SOx, and PM10 during idling shall not exceed the amount as calculated using the following equation:

$$E_{i,\,max} = E_i * Capacity$$

Where

$E_{i,max}$ = maximum daily emission of pollutant *i* during idling, in pounds pollutant per day;

E_i = Applicable emission limit from Table 1, Table 2, Table 3, or Table 4 for pollutant *i,* in pounds pollutant per ton glass produced;

Capacity = Furnace's permitted glass production capacity in tons glass produced per day.

5.7.3 Notifications shall be performed and records kept in accordance with Section 6.7.

5.8 Compliance Determination: Any source testing result, CEMS, or alternate emission monitoring method averaged value exceeding the applicable emission limits in Section 5.1, Section 5.2, Section 5.3, or Section 5.4 shall constitute a violation of the rule.

5.9 Monitoring Requirements

5.9.1 NOx Emission Monitoring Requirements

The operator of any glass melting furnace shall implement a NOx CEMS that is approved, in writing, by the APCO and EPA, and that meets the requirements of Sections 6.6. For a furnace battery, a single CEMS may be used to determine the total NOx emissions from all the furnaces provided the emission measurements are made at the common stack.

5.9.2 CO and VOC Emission Monitoring Requirements

Section 5.9.2 shall be in effect on and after January 1, 2009.

5.9.2.1 For each furnace subject to Table 2 CO limits, the operator shall implement a CO CEMS that meets the requirements of Section 6.6.1, and that is approved, in writing, by the APCO.

5.9.2.2 For each furnace subject to Table 2 VOC limits, the operator shall implement a VOC CEMS that meets the requirements of Section 6.6.1, and that is approved, in writing, by the APCO.

5.9.2.3 In lieu of installing and operating a CEMS for CO or CEMS for VOC or both, an operator may propose key system operating parameter(s) and frequency of monitoring and recording.

5.9.2.3.1 The alternate monitoring shall meet the requirements of Section 6.6.2.

5.9.2.3.2 The operator shall obtain approval of the APCO and EPA for the specific key system operating parameter(s), monitoring frequency, and recording frequency used by the operator to monitor CO/VOC emissions.

5.9.2.3.3 The operator shall monitor approved key system operating parameter(s) at the approved monitoring frequency to ensure compliance with the emission limit(s) during periods of emission-producing activities.

5.9.2.3.4 Acceptable range(s) for key system operating parameter(s) shall be demonstrated through source test.

5.9.2.4 For the operator of multiple furnaces or a furnace battery utilizing Section 5.2.2 to comply with CO emission limits or VOC emission limits or both, a single parametric monitoring arrangement or a single CEMS may be used to determine the CO emissions or VOC emissions or both from all the furnaces provided that the multiple furnaces/furnace battery is subject to the provisions of Sections 9.6 through 9.7.8.5 and:

5.9.2.4.1 For units using a CEMS - the emission measurements are made at the common stack.

5.9.2.4.2 For units using a parametric monitoring arrangement – the key system operating parameters are representative of the combined exhaust stream.

5.9.3 SOx Emission Monitoring Requirements

Section 5.9.3 shall be in effect on and after January 1, 2011. Flat glass furnace operators electing the Tier 4 early enhanced option shall be subject to the requirements of this section by the compliance date in Section 7.2.2.

5.9.3.1 For each furnace subject to Section 5.3, the operator shall implement a SOx CEMS that meets the requirements of Section 6.6.1 and that is approved, in writing, by the APCO and EPA.

5.9.3.2 In lieu of installing and operating a CEMS for SOx, an operator may propose key system operating parameter(s) and frequency of monitoring and recording.

5.9.3.2.1 The alternate monitoring shall meet the requirements of Section 6.6.2.

5.9.3.2.2 The operator shall obtain approval of the APCO and EPA for the specific key system operating parameter(s), monitoring frequency, and recording frequency used by the operator to monitor SOx emissions.

5.9.3.2.3 The operator shall monitor approved key system operating parameter(s) at the approved monitoring frequency to ensure compliance with the emission limit(s) during periods of emission-producing activities.

5.9.3.2.4 Acceptable range(s) for key system operating parameter(s) shall be demonstrated through source test.

5.9.3.3 For the operator of multiple furnaces or a furnace battery utilizing Section 5.3.4 to comply with SOx emission limits, a single parametric monitoring arrangement or a single CEMS may be used to determine the SOx emissions from all the furnaces provided that the multiple furnaces/furnace battery is subject to the provisions of Sections 9.6 through 9.7.8.5 and one of the following:

5.9.3.3.1 For units using a CEMS - the emission measurements are made at the common stack.

5.9.3.3.2 For units using a parametric monitoring arrangement – the key system operating parameters are representative of the combined exhaust stream.

5.9.4 PM10 Emission Monitoring Requirements

Section 5.9.4 shall be in effect on and after January 1, 2011. Flat glass furnace operators electing the Tier 4 early enhanced option shall be subject to the requirements of this section by the compliance date in Section 7.2.2.

5.9.4.1 The operator shall propose key system operating parameter(s) and frequency of monitoring and recording.

5.9.4.1.1 The parametric monitoring shall meet the requirements of Section 6.6.2.

5.9.4.1.2 The operator shall obtain approval of the APCO and EPA for the specific key system operating parameter(s), monitoring frequency, and recording frequency used by the operator to monitor PM10 emissions.

5.9.4.1.3 The operator shall monitor approved key system operating parameter(s) at the approved monitoring frequency to ensure compliance with the emission limit(s) during periods of emission-producing activities.

5.9.4.1.4 Acceptable range(s) for key system operating parameter(s) shall be demonstrated through source test.

5.9.4.2 In lieu of parametric monitoring, the operator may elect to implement a PM10 CEMS that meets the requirements of Section 6.6.1, and that is approved, in writing, by the APCO and EPA.

5.9.4.3 For the operator of multiple furnaces or a furnace battery utilizing Section 5.4.2 to comply with PM10 emission limits, a single parametric monitoring arrangement or a single CEMS may be used to determine the total PM10 emissions from all the furnaces provided that the multiple furnaces/furnace battery is subject to the provisions of Sections 9.6 through 9.7.8.5 and one of the following:

5.9.4.3.1 For units using a CEMS - the emission measurements are made at the common stack.

5.9.4.3.2 For units using a parametric monitoring arrangement – the key system operating parameters are representative of the combined exhaust stream.

5.10 Routine Maintenance of Add-On Emission Control Systems

During routine maintenance of an add-on emission control system, an operator of a glass melting furnace subject to the provisions of Sections 5.1 through 5.4 is exempt from these limits if:

5.10.1 Routine maintenance in each calendar year does not exceed 144 hours total for all add-on controls; and

5.10.2 Routine maintenance is conducted in a manner consistent with good air pollution control practices for minimizing emissions.

6.0 Administrative Requirements

6.1 Permitted Glass Production Capacity

Each glass melting furnace's PTO shall include the furnace's permitted glass production capacity in units of tons of glass pulled per day as a permit condition.

6.2 Operations Records

Section 6.2 shall be in effect through December 31, 2010.

6.2.1 Operators subject to the Table 1 Tier 2 NOx emission limits shall maintain the records specified in Sections 6.2.1.1 through 6.2.1.3 for a period of five years, make them available on site during normal business hours, and submit them to the APCO, ARB, or EPA upon request.

6.2.1.1 Daily records of the total hours of operation, type and quantity of fuel used in each furnace, and/or the quantity of glass pulled from each furnace whichever matches the permit condition in the furnace's PTO.

6.2.1.2 Daily records of NOx emission rate in lb/ton of glass pulled.

6.2.1.3 Records of source tests and operating parameters established during initial source test, maintenance and repair, malfunction, and idling, start-up and shutdown.

6.2.2 The following requirements shall apply from January 1, 2009 through December 31, 2010. Operators shall maintain daily records of:

6.2.2.1 CO emission rate in units matching Table 2 if CEMS is used for CO monitoring;

6.2.2.2 VOC emission rate in units matching Table 2, if CEMS is used for VOC monitoring;

6.2.2.3 For CO or VOC or both monitored using an approved parametric monitoring arrangement, operating values of the key system operating parameters.

6.2.3 The operator shall retain the records specified in Sections 6.2.1 and 6.2.2 for a period of five years, make them available on site during normal business hours to the APCO, ARB, or EPA, and submit them to the APCO, ARB, or EPA upon request.

6.3 Operations Records

Section 6.3 shall be in effect on and after January 1, 2011.

6.3.1 Operators shall maintain daily records of the following items:

6.3.1.1 Total hours of operation;

6.3.1.2 The quantity of glass pulled from each furnace;

6.3.1.3 NOx emission rate in lb/ton glass pulled;

6.3.1.4 CO emission rate in units matching Table 2, if a CEMS is used;

6.3.1.5 VOC emission rate in units matching Table 2, if a CEMS is used;

6.3.1.6 SOx emission rate in lb/ton glass pulled, if a CEMS is used;

6.3.1.7 PM10 emission rate in lb/ton glass pulled, if a CEMS is used;

6.3.1.8 For container glass furnaces that are oxy-fuel fired:

6.3.1.8.1 The weight of mixed color mix cullet used;

6.3.1.8.2 The total amount of cullet used by weight; and

6.3.1.8.3 The ratio, expressed in percent, of mixed color mix weight to total cullet weight.

6.3.2 For pollutants monitored using an approved parametric monitoring arrangement, operators shall record the operating values of the key system operating parameters at the approved recording frequency.

6.3.3 Operators shall maintain records of the following items:

6.3.3.1 Source tests and source test results;

6.3.3.2 The acceptable range for each approved key system operating parameter, as established during source test;

6.3.3.3 Maintenance and repair; and

6.3.3.4 Malfunction.

6.3.4 The operator shall retain records specified in Sections 6.3.1 through 6.3.3 for a period of five years; make the records available on site during normal business hours to the APCO, ARB, or EPA; and submit the records to the APCO, ARB, or EPA upon request.

6.4 Compliance Source Testing

6.4.1 Each glass melting furnace or a furnace battery shall be source tested at least once every calendar year, but not more than every 18 months and not sooner than every 6 months to demonstrate compliance with the applicable requirements of Section 5.0. Sources exempt under Section 4.3 are not required to source test for the exempted pollutants.

6.4.2 Source test conditions shall be representative of normal operations, but not less than 60 percent of the permitted glass production capacity.

6.4.3 For operators using alternative monitoring systems, during the source test, 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.

6.4.4 During source testing in accordance with Section 6.4.1, the arithmetic average of three (3) 30-consecutive-minute test runs shall be used to determine compliance with NOx, CO, VOC, and SOx emission limits.

6.4.5 During source testing in accordance with Section 6.4.1, the arithmetic average of three (3) 60-consecutive-minute test runs shall be used to determine compliance with PM10 emission limits.

6.4.6 For a given pollutant, if two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit.

6.5 Test Methods

Compliance with the requirements of Section 5.0 shall be determined in accordance with the following source test procedures or their equivalents as approved by the EPA, ARB, and the APCO:

6.5.1 Oxides of nitrogen – EPA Method 7E, EPA Method 19, or ARB Method 100.

6.5.2 Carbon monoxide (ppmv) – EPA Method 10, or ARB Method 100.

6.5.3 Volatile Organic Compound (ppmv) – EPA Method 25A expressed in terms of carbon or ARB Method 100. EPA Method 18 or ARB Method 422 shall be used to determine emissions of exempt compounds.

6.5.4 Stack gas oxygen, carbon dioxide, excess air, and dry molecular weight – EPA Method 3 or 3A, or ARB Method 100.

6.5.5 Stack gas velocity and volumetric flow rate – EPA Method 2.

6.5.6 Oxides of sulfur – EPA Method 6C, EPA Method 8, or ARB Method 100.

6.5.7 The SOx emission control system efficiency shall be determined using the following:

6.5.7.1 EPA Method 2 for measuring flow rates; and

6.5.7.2 EPA Method 6C or EPA Method 8 for measuring total SOx (expressed as SO_2) concentrations at the inlet and outlet of the control device.

6.5.7.3 The SOx emission control system efficiency shall be calculated using the following equation:

$$\% \text{ Control Efficiency} = [\ (C_{SO2,\ inlet} - C_{SO2,\ outlet}) / C_{SO2,\ inlet}\ ] \text{ X } 100$$

Where:

$C_{SO2,\ inlet}$ = concentration of SOx (expressed as SO_2) at the inlet side of the SOx emission control system, in lb/dscf

$C_{SO2, outlet}$ = concentration of SOx (expressed as SO_2) at the outlet side of the SOx emission control system, in lb/dscf

6.5.8 Sulfur content of liquid fuel – American Society for Testing and Materials (ASTM) D 6428-99 or ASTM D 5453-99.

6.5.9 PM10 Test Methods

6.5.9.1 Filterable PM10 emissions - EPA Method 5; EPA Method 201; or EPA Method 201A. An operator choosing EPA Method 5 shall count all PM collected as PM10.

6.5.9.2 Condensable PM 10 emissions - EPA Method 202 with the following procedures:

6.5.9.2.1 Purge the impinger with dry nitrogen for one hour. The one-hour purge with dry nitrogen shall be performed as soon possible after the final leak check of the system.

6.5.9.2.2 Neutralize the inorganic portion to a pH of 7.0. Use the procedure, "Determination of NH4 Retained in Sample by Titration" described in Method 202 to neutralize the sulfuric acid. Neutralizing the inorganic portion to a pH of 7.0 determines the un-neutralized sulfuric acid content of the sample without over-correcting the amount of neutralized sulfate in the inorganic portion.

6.5.9.2.3 Evaporate the last 1 ml of the inorganic fraction by air drying following evaporation of the bulk of the impinger water in a 105 degrees C oven as described in the first sentence of the Method 202 section titled "Inorganic Fraction Weight Determination."

6.6 Emissions Monitoring Systems

6.6.1 An approved CEMS shall comply with all of the following requirements:

6.6.1.1 Code of Federal Regulations Title 40 (40 CFR) Part 51;

6.6.1.2 40 CFR Part 60.7 (Notification and Record Keeping);

6.6.1.3 40 CFR Part 60.13 (Monitoring Requirements);

6.6.1.4 40 CFR Part 60 Appendix B (Performance Specifications);

6.6.1.5 40 CFR Part 60 Appendix F (Quality Assurance Procedures); and

6.6.1.6 Applicable sections of Rule 1080 (Stack Monitoring).

6.6.2 An approved alternate emission monitoring method shall be capable of determining the furnace emissions on an hourly basis and shall comply with the following requirements:

6.6.2.1 40 CFR 64 (Compliance Assurance Monitoring); and

6.6.2.2 40 CFR 60.13 (Monitoring Requirements).

6.7 Notifications and Records for Start-up, Shutdown, and Idling

6.7.1 The operator of any glass melting furnace claiming an exemption under Section 4.4 shall notify the APCO by telephone at least 24 hours before initiating idling, shutdown, or start-up. The notification shall include: date and time of the start of the exempt operation, reason for performing the operation, and an estimated completion date.

6.7.2 The operator shall notify the APCO by telephone within 24 hours after completion of the start-up, shutdown, or idling.

6.7.3 The operator claiming exemption under Section 4.4 shall maintain all operating records/support documentation necessary to support claim of exemption.

6.7.4 Records/support documentation required by Section 6.7.3 shall meet the following requirements:

6.7.4.1 The records/support documentation shall be retained on-site for five years.

6.7.4.2 The records/support documentation shall be made available to the APCO, ARB, or EPA during normal business hours.

6.7.4.3 The records/support documentation shall be submitted to the APCO, ARB, or EPA upon request.

6.8 Records for Exempt Furnaces

6.8.1 An operator claiming exemption under Section 4.1, Section 4.2, or Section 4.3 shall maintain records/documentation necessary to support claim of exemption.

6.8.2 Records/support documentation specified in Section 6.8.1 shall meet the following requirements:

6.8.2.1 The records/documentation shall be retained on site for five years.

6.8.2.2 The records/documentation shall be made available to the APCO, ARB, or EPA during normal business hours.

6.8.2.3 The records/documentation shall be submitted to the APCO, ARB, or EPA upon request.

7.0 Compliance Schedule

7.1 Container Glass and Fiberglass Furnaces

7.1.1 For container glass/fiberglass furnaces, the operator must submit a completed Authority to Construct (ATC) application, if needed, by June 1, 2012; and be in full compliance with the Section 5.1 Table 1 Tier 3 NOx limits by January 1, 2014.

7.1.2 For a container glass/fiberglass furnace that is not meeting the applicable SOx limit in Section 5.3 Table 3 on January 1, 2009, the operator must submit a completed ATC application, if needed, by June 1, 2009 and be in full compliance with the applicable SOx emission limit by January 1, 2011.

7.1.3 For a container glass/fiberglass furnace that is not meeting the applicable PM10 emission limit in Section 5.4 Table 4 on January 1, 2009, the operator must submit a completed ATC application, if needed, by June 1, 2009; and be in full compliance with the applicable PM10 limit by January 1, 2011.

7.2 Flat Glass Furnaces

7.2.1 A flat glass operator, who does not commit to the Tier 4 early enhanced option in Section 5.1 Table 1, shall comply with the applicable deadlines specified in Sections 7.2.1.1 through 7.2.1.6.

7.2.1.1 The operator must submit a completed ATC application, if needed, by June 1, 2009; and be in full compliance with the Section 5.1 Table 1 Tier 3 NOx limits by January 1, 2011.

7.2.1.2 By January 1, 2011, operators of flat glass furnaces shall submit, in writing, a letter signed by a responsible official. The letter shall include the following information:

7.2.1.2.1 Name and address of the facility;

7.2.1.2.2 A statement declaring whether the furnace will meet the Section 5.1 Table 1 Tier 4 standard option or the Tier 4 enhanced option;

7.2.1.2.3 The technology expected to be utilized to meet the stated Section 5.1 Table 1 Tier 4 option; and

7.2.1.2.4 Signature of responsible official with the person's printed name and title.

7.2.1.3 Operators utilizing the Section 5.1 Table 1 Tier 4 standard option shall submit a completed ATC application, if needed, by June 1, 2012; and be in full compliance with the Section 5.1 Table 1 Tier 4 standard option NOx limits by January 1, 2014.

7.2.1.4 Operators utilizing the Section 5.1 Table 1 Tier 4 enhanced option shall submit a completed ATC application, if needed, by June 1, 2016; and be in full compliance with the Section 5.1 Table 1 Tier 4 enhanced option NOx limits by January 1, 2018.

7.2.1.5 For a furnace that is not meeting the applicable SOx emission limit in Section 5.3 Table 3 on January 1, 2009, the operator must submit a completed ATC application, if needed, by June 1, 2009 and be in full compliance with the applicable SOx emission limit by January 1, 2011.

7.2.1.6 For a furnace that is not meeting the applicable PM10 emission limit in Section 5.4 Table 4 on January 1, 2009, the operator must submit a completed ATC application, if needed, by June 1, 2009; and be in full compliance with the applicable PM10 limit by January 1, 2011.

7.2.2 A flat glass operator, who commits to the Tier 4 early enhanced option in Section 5.1 Table 1, shall comply with the applicable emission limits by the compliance deadlines specified in Sections 7.2.2.1 through 7.2.2.3.

7.2.2.1 By November 1, 2010, operators of flat glass furnaces shall submit, in writing, a letter signed by a responsible official. The letter shall include the following information:

7.2.2.1.1 Name and address of the facility;

7.2.2.1.2 A statement declaring the furnace will meet the Tier 4 early enhanced option, Section 5.1 Table 1 Tier 4 NOx limit; Section 5.3 Table 3 SOx limit; and Section 5.4 Table 4 PM10 limit by January 1, 2014

or by the next furnace rebuild schedule, whichever is earlier;

7.2.2.1.3 The technologies expected to be utilized to meet the stated Early Enhanced Option, Section 5.1 Table 1, Tier 4 NOx limit; Section 5.3 Table 3 SOx limit; and Section 5.4 Table 4 PM10 limit; and

7.2.2.1.4 Signature of responsible official with the person's printed name and title.

7.2.2.2 By June 1, 2012, the operator shall submit a completed ATC application, if needed, for any furnace modifications to comply with the applicable NOx, SOx and PM10 emission limits.

7.2.2.3 Full compliance with the Section 5.1 Table 1 Tier 4 early enhanced option NOx limits; Section 5.3 Table 3 SOx limit; and Section 5.4 Table 4 PM10 limit by January 1, 2014 or by the next furnace rebuild, whichever is earlier.

8.0 Calculations

8.1 The pollutant mass emission rate in lb/hr shall be converted to lb pollutant/ton of glass pulled according to the following equation:

$$lb\,emitted\,/\,ton\,of\;\;glass\;\;pulled\;=\;\frac{lb\,/\,hr\,emitted}{Pull\;rate\,in\,tons\,/\,hr}$$

8.2 100% air-fuel fired furnaces which have concentration limits in ppmv values shall be subject to the CO and VOC emission limits specified in Section 5.2. These limits are referenced at dry stack gas conditions and 8.0 percent by volume of stack oxygen. The CO and VOC emission concentrations shall be corrected to 8.0 percent oxygen by using the equation below, or an equivalent correction method that is approved, in writing, by each of the following: APCO, ARB, and EPA.

$$(\text{ppmv CO})_{\text{corrected}} = \frac{12.9\%}{20.9\% - (\%\,O_2)_{\text{measured}}}\ \text{x}\ (\text{ppmv CO})_{\text{measured}}$$

$$(\text{ppmv VOC})_{\text{corrected}} = \frac{12.9\%}{20.9\% - (\%O2)_{\text{measured}}}\ x\ (\text{ppmv VOC})_{\text{measured}}$$

8.3 The operator of a oxy-fuel fired furnace, oxygen-assisted combustion furnace, or a furnace utilizing any fuel oxidants other than 100% ambient air, shall submit to the APCO, ARB, and EPA for approval any methodologies and data that will be used to calculate emission rates for NOx, CO, and VOC if the methods are different than specified in Sections 8.1 or 8.2. Unless the operator received prior

written approval from APCO, ARB, and EPA of all the calculation methods to be used that are different than specified in Sections 8.1 or 8.2, compliance with the emissions limits cannot be fully demonstrated, and it shall be deemed to be a violation of the rule.

9.0 Furnace Battery or Multiple Furnaces Control

9.1 As an alternative to complying with Section 5.1 Tier 2 NOx emission limits, the operator of a furnace battery or multiple furnaces shall operate the furnace battery or multiple furnaces pursuant to Sections 9.2 through 9.6.2. Any violation of the requirements below shall be considered a violation of this rule, and a violation of the aggregated emission limits shall constitute a violation for each furnace for the entire averaging time.

9.2 Any operator who elects to comply with Section 9.0 in lieu of complying with the requirements of Section 5.1 Tier 2 NOx emission limits shall be subject to a 10% environmental air quality benefit pursuant to 40 CFR 51 Subpart U. NOx emissions shall be at least 10% lower than the limits specified in Section 5.1 Tier 2.

9.3 The daily aggregate NOx emissions, as determined in accordance with Section 9.6, shall be no greater than those obtained by controlling each furnace to comply individually with the limits in Section 5.1 Tier 2.

9.4 The operator shall conduct source testing of the furnace according to the requirements of Section 6.4.

9.5 Determination of Compliance

9.5.1 The operator shall calculate and record on a daily basis the aggregated emissions of furnaces which are subject to Section 9.2. Such records shall be kept for a period of five years. The operator shall notify the APCO of any violation of Section 9.3 within 24 hours. The notification shall include:

9.5.1.1 name and location of the facility;

9.5.1.2 identification of furnace(s) causing the exceedances;

9.5.1.3 the cause and the expected duration of exceedances;

9.5.1.4 calculation of actual NOx, CO and VOC emissions;

9.5.1.5 corrective actions and schedules to complete the work.

9.5.2 The operator shall demonstrate compliance with the requirements of Section 9.3 through CEMS data or approved alternate emission monitoring methods, and source test results.

9.6 Determination of Aggregated Emissions

9.6.1 The aggregated emissions for a given pollutant of a furnace battery are the emissions for the pollutant as measured at the common stack divided by the sum of the daily glass pulled from each furnace.

9.6.2 The aggregated emissions of multiple furnaces for a given pollutant are the sum of each furnace's daily emissions for the pollutant divided by the sum of the daily glass pulled from each furnace.

9.7 Multiple Furnaces/Furnace Battery Requirements for Tier 3 NOx, CO, VOC, SOx and PM10 Control

9.7.1 An operator of either furnace battery or multiple furnaces that elects to meet the emission limits for the furnaces through the requirements of this section shall be subject to a 10% air quality benefit in accordance with 40 CFR Part 51 Subpart U. The maximum emission rate shall be at least 10% lower than the applicable limit specified in Section 5.1 (Tier 3 NOx), Section 5.2 (CO and VOC), Section 5.3 (SOx), or Section 5.4 (PM10), for each pollutant subject to this option.

9.7.2 The operator of a furnace battery or multiple furnaces choosing the alternate emission limit shall operate the furnace battery or multiple furnaces according to Sections 9.7.3 through 9.7.8.5. Only those pollutants with emissions that are averaged across multiple furnaces/furnace battery are subject to all subparts of Section 9.7. Pollutant emissions that are not averaged across multiple furnaces/furnace battery are subject to the applicable emission limits of Sections 5.1 through 5.4.

9.7.3 The daily aggregate emissions, as determined in accordance with Section 9.6, shall be no greater than those obtained by controlling each furnace to comply individually with applicable emission limits, less the 10% air quality benefit.

9.7.4 The operator shall demonstrate compliance with Section 9.7.3 through source test results and monitoring by either CEMS or approved alternate emission monitoring methods.

9.7.5 The operator shall conduct source testing of the furnaces according to the requirements of Section 6.4.

9.7.6 Records shall be kept in accordance with the applicable provisions of Section 6.0.

9.7.7 Any violation of the aggregated emission limits shall constitute a violation of the rule for each furnace for the entire averaging period.

9.7.8 The operator shall notify the APCO of any violation of Section 9.7.3 within 24 hours. The notification shall include:

9.7.8.1 Name and location of the facility;

9.7.8.2 Identification of furnace(s) causing the violation;

9.7.8.3 The cause and the expected duration of violation;

9.7.8.4 Calculation of actual NOx, CO, VOC, SOx, and PM10 emissions during the violation;

9.7.8.5 Corrective actions and schedules to complete the work.

7/28/11

RULE 4401 STEAM-ENHANCED CRUDE OIL PRODUCTION WELLS (Adopted April 11, 1991; Amended September 19, 1991; Amended December 17, 1992; Amended January 15, 1998; Amended December 14, 2006, Amended June 16, 2011)

1.0 Purpose

The purpose of this rule is to limit the Volatile Organic Compound (VOC) emissions from steam-enhanced crude oil production wells.

2.0 Applicability

This rule is applicable to all steam-enhanced crude oil production wells and any associated VOC collection and control systems.

3.0 Definitions

3.1 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.2 Background: a reading on a portable hydrocarbon detection instrument which is determined at a distance no greater than two (2) meters upwind from any component to be inspected and which is not influenced by any specific emission point.

3.3 Component: includes, but is not limited to, any valve, fitting, threaded connection, pump, compressor, pressure relief device, pipe, flange, process drain, sealing mechanism, hatch, sight-glass, meter, or seal fluid system in VOC service.

3.4 Component Type: includes, but is not limited to, any one (1) of the following groups: valves, fittings, threaded connections, pumps, compressors, pressure relief devices, pipes, flanges, process drains, sealing mechanisms, hatches, sight-glasses, meters, or seal fluid systems in VOC service.

3.5 Compressor: a device used to compress gases or vapors or a combination of gases and vapors by the addition of energy, and includes all associated components used for connecting and sealing purposes. The phrase "all associated components used for connecting and sealing purposes" means the first VOC leak points (first components) connected on the body of the compressor. For example, a valve that is connected to a threaded hole on the body of the compressor, the first VOC leak point is the threaded connection on the body side of the compressor, but the valve itself is not a "first VOC leak point". Similarly, a compressor shaft seal is considered as a “first VOC leak point”.

3.6 Critical Component: a component that would require the shutdown of a critical process unit if that component was shut down or disabled.

3.7 Critical Process Unit: a process unit that must remain in service because of its importance to the overall process that requires it to continue to operate, and has no equivalent equipment to replace it or cannot be bypassed, and it is technically infeasible to repair leaks from that process unit without shutting it down and opening the process unit to the atmosphere.

3.8 Critical Process Unit Shutdown: the shutdown of a critical process unit or part of the critical process unit that causes the entire unit to cease operating.

3.9 Cyclic Well: for purposes of this rule, a crude oil production well, which is periodically (at least once in the preceding two (2) year period) injected with steam from any source for the purpose of enhancing oil production.

3.10 District: San Joaquin Valley Unified Air Pollution Control District, or any person designated to act on its behalf.

3.11 EPA: United States Environmental Protection Agency, or any person designated to act on its behalf.

3.12 Essential Component: a component that cannot be taken out of service without reducing, by more than 33 percent, the throughput of the process unit that it serves.

3.13 Facility: a stationary source as defined in Rule 2201 (New and Modified Stationary Source Rule).

3.14 Fitting: a component, excluding flanges and threaded connectors, used to attach or connect pipes or piping system. Examples of a "fitting" include, but are not limited to quick-disconnect fittings, push-in-fittings, and cam-locks.

3.15 Front Line Production Equipment: a tank or vessel in which any organic liquid is placed, held, or stored and that is the first vessel that receives crude oil/fluids directly from wells subject to this rule including, but is not limited to, wash tanks, free water knockouts, separators, etc., and that is operating under atmospheric or near atmospheric pressure. After production is routed through at least one of such tanks or vessels, downstream vessels are no longer considered front line production equipment. A gauge tank, as defined in Section 3.0 of this rule, shall not be considered as Front Line Production Equipment.

3.16 Fuel Burning Equipment: as defined in Rule 1020 (Definitions).

3.17 Gauge Tank: for the purposes of this rule only, a tank which is used exclusively for measuring the amount of produced fluid produced by an oil well(s) and meets all the following conditions:

3.17.1 Has a capacity of 100 barrels (4,200 gallons) or less,

3.17.2 Is in operation on or before December 14, 2006,

3.17.3 Receives or stores produced fluid (crude oil or mixture of crude oil and water),

3.17.4 Is connected to at least one steam-enhanced crude oil production well with a closed vent,

3.17.5 Is upstream of all front line production equipment,

3.17.6 Does not have its VOC emissions controlled to at least 99%, and

3.17.7 The true vapor pressure (TVP) of the produced fluid in the gauge tank, at all times, shall be less than 0.5 psia as determined pursuant to the provisions of Section 6.2.3.

3.18 Inaccessible Component: a component that is located more than 15 feet above ground when access is required from the ground; or a component that is located more than six (6) feet away from a platform when access is required from the platform, or a component in a location that would require the elevation of monitoring personnel higher than six (6) feet above permanent support surfaces.

3.19 Inspection: checking and/or testing in order to detect leaks.

3.19.1 District Inspection: inspection of components by District personnel or their representative to insure facilities and/or operators are in compliance with District requirements.

3.19.2 Operator Inspection: inspection of components conducted by the operator pursuant to the inspection and re-inspection schedules specified in this rule for the purpose of demonstrating compliance with this rule.

3.20 Leak: The dripping of VOC-containing liquid or the detection of a concentration of total organic compound, above background, determined according to the test method specified in Section 6.3.3 that exceeds any of the values specified in Table 1, Section 3.20.1 and Section 3.20.2 of this rule. Any liquid or gas coming from a component undergoing repair or replacement, or during sampling of process fluid from a component into a container is not considered a leak provided such

activities are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

Table 1 Gas Lean in ppmv as Methane		
Type of Component	Major Gas Leak	Minor Gas Leak
1. PRDs	Greater than 10,000	400 to 10,000
2. Components other than PRDs	Greater than 10,000	2,000 to 10,000

3.20.1 Major Liquid Leak: a visible mist or a continuous flow of liquid that is not seal lubricant.

3.20.2 Minor Liquid Leak: a liquid leak, except seal lubricant, that is not a major liquid leak and drips liquid at a rate of more than three drops per minute.

3.21 Leak Minimization: reducing a leak to the lowest achievable level without damaging the component using best modern practices which include, but are not limited to, adding sealing material to the component, tightening the component, or adjusting the component without shutdown of the process that the component serves and that can be safely accommodated.

3.22 Major Component: a pump five (5) brake horsepower or larger, any compressor, or any pressure relief valve four (4) inches in diameter or larger.

3.23 Open-ended Line or Valve: a line or valve, except PRD, having one side of the line or valve seat in contact with the process fluid and one side open to the atmosphere, either directly or through an open piping.

3.24 Operate: to perform any activity with, or on any steam-enhanced crude oil production well, including but not limited to producing, steam-enhancing, venting, maintaining or repairing.

3.25 Pilot Testing: testing of a new cyclic well for up to 180 days from each production zone for the purpose of determining the viability of developing a steam-enhanced production zone.

3.26 Portable Hydrocarbon Detection Instrument: a hand-held hydrocarbon analyzer that meets the criteria specified in EPA Method 21, 40 CFR Part 60. The instrument shall be calibrated on methane.

3.27 Pressure Relief Device (PRD): a pressure relief valve or a rupture disk.

3.28 Pressure Relief Valve (PRV): an automatic pressure-relieving device associated with a process vessel or piping system that is activated by pressure upstream of the device and relieves to the atmosphere (atmospheric PRV).

3.29 Process Drain: an open portion of a non-continuous piping system, including open origination portion(s) of such a system used for collection and transport of liquids discharged from process vessels, spills, or other sources. Drain origination points and drain termination points are not open-ended lines. Process drains are not open-ended lines.

3.30 Process System: an APCO-approved system that is not open to the atmosphere and is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gases or vapors from a piece of equipment to a process stream, fuel gas system, sales gas system or an injection well approved by the Department of Oil, Gas, and Geothermal Resources (DOGGR).

3.31 Process Unit: a manufacturing process which is independent of other processes and is continuous when supplied with a constant feed of raw material and sufficient storage facilities for the final product.

3.32 Production Zone: a subsurface geologic formation or group of formations of oil-bearing material through which steam could migrate from a steam injection well, or cyclic well being steamed to an oil production well.

3.33 Pump: a device used to transport fluids by the addition of energy, and includes all associated components used for connecting or sealing purposes. The phrase "all associated components used for connecting and sealing purposes" means the first VOC leak points (first components) on the body of the pump. For example, a valve that is connected to a threaded hole on the body of the pump, the first VOC leak point is the threaded connection on the body side of the pump, but the valve itself is not a "first VOC leak point". Similarly, a pump shaft seal is considered as a "first VOC leak point".

3.34 Release: a VOC emission to the atmosphere from a PRD caused by an increase in upstream pressure. A leak caused by improper reseating of the PRD is not a release.

3.35 Rupture Disk: a rigid diaphragm held between flanges for the purpose of isolating organic compounds from the atmosphere or from a downstream pressure relief valve. Rupture disks are designed to fail at a certain pressure point.

3.36 Service or Repair: a well shall be considered under service or repair during rig-up, operation, and rig-down of any rig or pulling unit used to repair or maintain surface or downhole well equipment.

3.37 Sight glass: a device located on a fluid line or a process vessel that allows an operator to view the product or material inside a fluid line or a process vessel.

3.38 Small Producer: a person who produces a monthly average of less than 6,000 barrels of crude oil per day from all operations in any one county within the District, and who does not engage in refining, transporting, or marketing of refined petroleum products. An operator shall qualify as a small producer only in the county where the operator's crude oil production does not exceed the threshold specified above.

3.39 Steam Drive Well: a crude oil production well which produces from the same production zone in which a steam injection well is completed and is within:

3.39.1 250 feet of a steam injection well, if the injection well is within a production well pattern of two and one-half (2 1/2) acres or smaller, or

3.39.2 350 feet of a steam injection well, if the injection well is within a production well pattern of greater than two and one-half (2 1/2) acres but less than or equal to five (5) acres, or

3.39.3 500 feet of a steam injection well, if the injection well is within a production well pattern larger than five (5) acres, or

3.39.4 1000 feet of a steam injection well, and responds to steam injected in an irregular production well pattern, and exhibits any visible emissions.

3.40 Steam-Enhanced Crude Oil Production Well: a steam drive well, cyclic well, or any other well in which the temperature of crude oil is raised, by the injection of steam, above the production zone temperature that existed prior to the injection of steam.

3.41 Steam Injection Well: a well into which steam is injected that enhances the production of oil from other wells in the same production zone. Cyclic wells which enhance production of oil from other wells in the production zone are considered injection wells.

3.42 Tag: a piece of paper, metal, plastic or other suitable material that is attached to a component for the purpose of identification or other information.

3.43 True Vapor Pressure (TVP): as defined in Rule 4623 (Storage of Organic Liquids).

3.44 Turnaround: a scheduled shutdown of a process unit for maintenance and repair work.

3.45 Unsafe-to-Monitor Component: a component installed at a location that would prevent the safe inspection or repair of a component as defined by OSHA standards or in provisions for worker safety stated in 29 CFR 1910.

3.46 Vacuum Service: operating under a negative gauge pressure or below atmospheric pressure.

3.47 Valve: a device that regulates the flow of fluid in a piping system by means of an external actuator acting to permit or block passage of fluid.

3.48 Visible Emissions: from well vents, visible emissions are any visible plume including water vapor. When the ambient air temperature is 60°F or less a well vent shall be considered to have visible emissions if there is any visible plume and there is a leak as defined above.

3.49 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.50 VOC Collection and Control System: an APCO-approved system that is not open to the atmosphere and that is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to an APCO-approved control device that has a VOC destruction or removal efficiency of at least 99%, or that transports gases or vapors back to a process system.

3.51 VOC Emissions: emissions resulting from the operation of a steam-enhanced crude oil production well. Such emissions include uncondensed casing vent emissions and any emissions resulting from the handling, transfer, storage, or disposal of condensed and uncondensed casing vapors.

3.52 Well Stimulation: cyclic steam injection of a well for up to 180 days prior to the well being placed in service as a continuous steam injection well.

3.53 Well Vent: an opening on a well head that facilitates or blocks the flow of well casing vapors to the atmosphere or to a VOC collection and control system.

4.0 Exemptions

4.1 Any steam-enhanced crude oil production well undergoing service or repair during the time the well is not producing.

4.2 The requirements of this rule for cyclic wells shall not apply to up to 40 wells owned by a company and undergoing pilot testing provided;

4.2.1 the production zone on that property has not been injected with steam during the preceding two (2) years,

4.2.2 the well is located more than 1000 feet from an existing well vent vapor collection and control system operated by the company, and

4.2.3 the operation is under District permit.

4.3 The requirements of this rule shall not apply to up to 40 cyclic wells owned by a company and undergoing well stimulation, provided;

4.3.1 the well is located more than 1000 feet from an existing well vent vapor collection and control system operated by the company, and

4.3.2 the operation is under District permit.

4.4 The requirements of this rule shall not apply to up to five (5) cyclic wells owned by a company that is not a small producer, in each stationary source as defined in Rule 2201 (New and Modified Stationary Source Review Rule), and up to 20 cyclic wells owned by a small producer, provided the requirements of Section 4.4.1 and Section 4.4.2 are met.

4.4.1 the well is located more than 1000 feet from an existing well vent vapor control system operated by the company, and

4.4.2 the operation is under District permit.

4.5 The requirements of this rule shall not apply to components serving the produced fluid line.

4.6 Except for complying with the applicable requirements of Section 6.1, Section 6.6.6 and Section 7.2, the requirements of this rule shall not apply to components described in Section 4.6.1 through Section 4.6.4. An operator claiming an exemption pursuant to Section 4.6 shall provide proof of the applicable criteria to the satisfaction of the APCO.

4.6.1 Pressure relief devices, pumps, and compressors that are enclosed and whose emissions are controlled with an operating VOC collection and control system as defined in Section 3.0.

4.6.2 Components buried below ground.

4.6.3 Components used exclusively in vacuum service.

4.6.4 One-half inch nominal or less stainless steel tube fittings which have been demonstrated to the APCO to be leak-free based on initial inspection using the test method specified in Section 6.3.3.

4.7 The requirements of Section 5.4.1 through Section 5.4.7 of this rule shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of ten percent by weight or less (≤10 wt.%), as determined by the test methods in Section 6.3.4.

5.0 Requirements

5.1 An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with the requirements of either Section 5.1.1 or Section 5.1.2.

5.1.1 The steam-enhanced crude oil production well vent is closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) is connected to a VOC collection and control system as defined in Section 3.0. The well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere.

5.1.2 The steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0.

5.2 Determination of Compliance with the Leak Standards

5.2.1 An operator shall be in violation of this rule if any District inspection demonstrates that one or more of the conditions in Section 5.2.2 exist at the facility or if any operator inspection conducted pursuant to Section 5.4 demonstrates that one or more of the conditions in Section 5.2.2 exist at the facility.

5.2.2 Leak Standards

The following conditions shall be used for determination of violation during an inspection pursuant to the provisions of Section 5.2.1.

5.2.2.1 Existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations requiring process fluid flow through the open-ended lines. Attended operations include draining or degassing operations, connection of temporary process equipment, sampling of process streams, emergency venting, and other normal operational needs, provided such operations

are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

5.2.2.2 Existence of a component with a major liquid leak as defined in Section 3.0.

5.2.2.3 Existence of a component with a gas leak greater than 50,000 ppmv.

5.2.2.4 Existence of a component leak described in Section 5.2.2.4.1 through Section 5.2.2.4.3 in excess of the allowable number of leaks specified in Table 2.

5.2.2.4.1 A minor liquid leak, or

5.2.2.4.2 A minor gas leak, or

5.2.2.4.3 A gas leak greater than 10,000 ppmv up to 50,000 ppmv.

Table 2 Number of Allowable Leaks

Number of Steam-Enhanced Crude Oil Production Wells Connected to a VOC Collection and Control System	Number of Allowable Leaks
1 to 25	3
26 to 50	6
51 to 100	8
101 to 250	10
251 to 500	15
More than 500	One (1) for each 20 wells tested with a minimum of 50 wells tested.

5.3 An operator shall comply with the following operating requirements:

5.3.1 An operator shall not use any component with a leak as defined in Section 3.0, or that is found to be in violation of the provisions of Section 5.2.2. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.5 of this rule.

5.3.2 Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere.

5.3.3 An operator shall comply with the requirements of Section 6.7 if there is any change in the description of major components or critical components.

5.4 Inspection and Re-inspection Requirements

Unless otherwise specified, an operator shall perform all component inspections and gas leak measurements pursuant to the requirements of Section 6.3.3.

5.4.1 Except for pipes and unsafe-to-monitor components, an operator shall inspect all other components pursuant to the requirements of Section 6.3.3 at least once every year.

5.4.2 An operator shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of this rule.

5.4.3 In addition to the inspections required by Section 5.4.1, an operator shall inspect for leaks all accessible operating pumps, compressors, and PRDs in service as follows:

5.4.3.1 An operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once each calendar week.

5.4.3.2 Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of this rule.

5.4.4 In addition to the inspections required by Section 5.4.1, Section 5.4.2 and Section 5.4.3, an operator shall perform the following inspections:

5.4.4.1 An operator shall initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release. An operator shall re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection.

5.4.4.2 An operator shall inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service.

5.4.4.3 Except for PRDs subject to the requirements of Section 5.4.4.1, an operator shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced.

5.4.7 An operator shall inspect all unsafe-to-monitor components during each turnaround.

5.4.8 A District inspection in no way fulfills any of the mandatory inspection requirements that are placed upon operators and cannot be used or counted as an inspection required of an operator.

5.5 Leak Repair Requirements

5.5.1 An operator shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak. An operator shall include the following information on the tag:

5.5.1.1 The date and time of leak detection.

5.5.1.2 The date and time of leak measurement.

5.5.1.3 For a gaseous leak, the leak concentration in ppmv.

5.5.1.4 For a liquid leak, whether it is a major liquid leak or a minor liquid leak.

5.5.1.5 Whether the component is an essential component, an unsafe-to-monitor component, or a critical component.

5.5.2 An operator shall keep the tag affixed to the component until an operator has met all of the following conditions:

5.5.2.1 Repaired or replaced the leaking component, and

5.5.2.2 Re-inspected the component using the test method in Section 6.3.3, and

5.5.2.3 The component is found to be in compliance with the requirements of this rule.

5.5.3 An operator shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak.

5.5.4 Except for leaking critical components or leaking essential components subject to the requirements of Section 5.5.7, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0, an operator shall comply with at least one of the requirements of Section 5.5.4.1, Section 5.5.4.2, or Section 5.5.4.3 as soon as practicable but not later than the time period specified in Table 3.

5.5.4.1 Repair or replace the leaking component; or

5.5.4.2 Vent the leaking component to a VOC collection and control system as defined in Section 3.0, or

5.5.4.3 Remove the leaking component from operation.

Table 3 Repair Period	
Type of Leak	Repair Period in Calendar Days
Gas Leaks	
Minor Gas Leak	14
Major Gas Leak less than or equal to 50,000 ppmv	5
Gas Leak greater than 50,000 ppmv	2
Liquid Leaks	
Minor Liquid Leak	3
Major Liquid Leak	2

5.5.5 The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 3.

5.5.6 The time of the initial leak detection shall be the start of the repair period specified in Table 3.

5.5.7 If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier.

6.0 Administrative Requirements

6.1 Recordkeeping and Submissions

An operator shall maintain the records required by Section 6.1 and Section 6.2 for a period of five (5) years. These records shall be made available to the APCO, California Air Resources Board (ARB), and EPA upon request.

6.1.1 The operator of any steam-enhanced crude oil production well shall maintain records of the date and well identification where steam injection or well stimulation occurs.

6.1.2 A small producer shall maintain monthly records of county-specific crude oil production. For the purpose of this rule, the monthly crude oil production records required by the California Division of Oil, Gas, and Geothermal Resources may be used to satisfy Section 6.1.2.

6.1.3 An operator of any steam-enhanced crude oil production well shall keep source test records which demonstrate compliance with the control efficiency requirements of the VOC collection and control system as defined in Section 3.0.

6.1.4 The inspection log maintained pursuant to Section 6.4.

6.1.5 Records of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components, including a copy of current calibration gas certification from the vendor of said calibration gas cylinder, the date of calibration, concentration of calibration gas, instrument reading of calibration gas before adjustment, instrument reading of calibration gas after adjustment, calibration gas expiration date, and calibration gas cylinder pressure at the time of calibration.

6.1.6 An operator shall maintain copies at the facility of the training records of the training program operated pursuant to Section 6.5.

6.1.7 An operator shall keep a copy of the APCO-approved Operator Management Plan at the facility.

6.1.8 An operator shall keep a list of all gauge tanks, as defined in Section 3.0. The list shall contain the size, identification number, the location of each gauge tank and specify whether the gauge tank is upstream of all front line production equipment.

6.1.9 The results of gauge tank TVP testing conducted pursuant to Section 6.2.3 shall be submitted to the APCO within 60 days after the completion of the testing.

6.1.10 An operator that discovers that a PRD has released shall record the date that the release was discovered, and the identity and location of the PRD that released. An operator shall submit such information recorded during the calendar year of the release to the APCO no later than 60 days after the end of the calendar year.

6.2 Compliance Source Testing

6.2.1 An operator shall source test annually all VOC collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. A process system is not subject to compliance source testing requirements.

6.2.2 If approved by the APCO, a VOC collection and control system is not subject to Section 6.2.1 if all uncondensed VOC emissions collected by the system are controlled by a device meeting one of the requirements in Sections 6.2.2.1 through 6.2.2.3.

6.2.2.1 An internal combustion engine subject to District Rule 4702 (Internal Combustion Engines - Phase 2); or

6.2.2.2 A combustion device subject to District Rule 4320 (Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr); District Rule 4307 (Boilers, Steam Generators, and Process Heaters - 2.0 MMBtu/hr to 5.0 MMBtu/hr); or District Rule 4308 (Boilers, Steam Generators, and Process Heaters - 0.075 MMBtu/hr to 2.0 MMBtu/hr); or

6.2.2.3 A unit subject to District Rule 4311 (Flares).

6.2.3 An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.0:

6.2.3.1 An operator shall conduct periodic TVP testing of each gauge tank at least once every 24 months during summer (July – September), and whenever there is a change in the source or type of produced fluid in the gauge tank.

6.2.3.2 The TVP testing shall be conducted at the actual storage temperature of the produced fluid in the gauge tank using the applicable TVP test method specified in Section 6.4 of Rule 4623 (Storage of Organic Liquids). The operator shall submit the TVP testing results to the APCO as specified in Section 6.1.9.

6.3 Test Methods

Test methods that are equivalent to those test methods specified in Section 6.3.1 through Section 6.3.4 may be used provided that such equivalent test methods have been previously approved, in writing, by the EPA, ARB, and the APCO.

6.3.1 The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported.

6.3.2 VOC content shall be analyzed by using the latest revision of ASTM Method E168, E169, or E260 as applicable. Analysis of halogenated exempt compounds shall be performed by using ARB Method 432.

6.3.3 Leak inspection, other than audio-visual, and measurements of gaseous leak concentrations shall be conducted according to EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument

probe inlet at a distance of one (1) centimeter or less from the surface of the component interface.

6.3.4 The VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids.

6.4 Inspection Log

An operator shall maintain an inspection log in which an operator records, at a minimum, all of the following information for each inspection performed:

6.4.1 The total number of components inspected, and the total number and percentage of leaking components found by component type.

6.4.2 The location, type, and name or description of each leaking component and description of any unit where the leaking component is found.

6.4.3 The date of leak detection and the method of leak detection.

6.4.4 For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak.

6.4.5 The date of repair, replacement, or removal from operation of leaking components.

6.4.6 The identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier.

6.4.7 The methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier.

6.4.8 The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced.

6.4.9 The inspector's name, business mailing address, and business telephone number.

6.4.10 The date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log.

6.5 Employee Training Program

An operator shall establish and implement an employee training program for inspecting and repairing components and recordkeeping procedures, as necessary.

6.6 Operator Management Plan

By June 30, 2008, an operator whose existing wells are subject to this rule or whose existing wells are exempt pursuant to Section 4.0 of this rule on or before December 14, 2006 shall prepare and submit an Operator Management Plan for approval by the APCO. An operator may use diagrams, charts, spreadsheets, or other methods approved by the APCO to describe the information required by Section 6.6.4 through Section 6.6.7 below. The Operator Management Plan shall include, at a minimum, all of the following information:

6.6.1 A description of all wells and all associated VOC collection and control systems subject to this rule, and all wells and all associated VOC collection and control systems that are exempt pursuant to Section 4.0 of this rule.

6.6.2 Identification and description of any known hazard that might affect the safety of an inspector.

6.6.3 Except for pipes, the number of components that are subject to this rule by component type.

6.6.4 Except for pipes, the number and types of major components, inaccessible components, unsafe-to-monitor components, critical components, and essential components that are subject to this rule and the reason(s) for such designation.

6.6.5 Except for pipes, the location of components subject to the rule (components may be grouped together functionally by process unit or facility description).

6.6.6 Except for pipes, components exempt pursuant to Section 4.6 (except for components buried below ground) may be described in the Operator Management Plan by grouping them functionally by process unit or facility description. The results of any laboratory testing or other pertinent information to demonstrate compliance with the applicable exemption criteria for components for which an exemption is being claimed pursuant to Section 4.6 shall be submitted with the Operator Management Plan.

6.6.7 A detailed schedule of an operator's inspections of components to be conducted as required by this rule and whether the operator inspections of

components required by this rule will be performed by a qualified contractor or by an in-house team.

6.6.8 A description of the training standards for personnel that inspect and repair components.

6.6.9 A description of the leak detection training for conducting the test method specified in Section 6.3.3 for new operators, and for experienced operators, as necessary.

6.7 By January 30 of each year, an operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to an existing Operator Management Plan.

6.8 The APCO shall provide written notice to the operator of the approval or incompleteness of a new or revised Operator Management Plan within 60 days of receiving such Operator Management Plan. If the APCO fails to respond in writing within 60 days after the date of receiving the Operator Management Plan, it shall be deemed approved. No provision of the Operator Management Plan, approved or not, shall conflict with or take precedence over any provision of this rule.

7.0 Compliance Schedule

7.1 The operator of any new steam-enhanced crude oil production well, or any non-steam-enhanced crude oil production well converted to a steam-enhanced crude oil production well shall comply with the requirements of this rule and the applicable permit requirements of Rule 2201 (New and Modified Stationary Source Review Rule) before steam injection and no later than the first detectable flow at the casing vent.

7.2 Steam-enhanced crude oil production wells and components that are exempt pursuant to Section 4.2, 4.3, 4.4, 4.6, or 4.7 that become subject to this rule through loss of exemption status shall not be operated until such time that they are in full compliance with the requirements of this rule.

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RULE 4402 CRUDE OIL PRODUCTION SUMPS (Adopted April 11, 1991; Amended September 19, 1991; Amended December 17, 1992; Amended December 15, 2011)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from sumps.

2.0 Applicability

This rule applies to all first, second, and third stage sumps at facilities producing, gathering, separating, processing, and/or storing crude oil in an oil field.

3.0 Definitions

3.1 APCO: the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District.

3.2 API: American Petroleum Institute.

3.3 ARB: California Air Resources Board.

3.4 Clean Produced Water: produced water containing less than 35 milligrams per liter of VOCs as determined by EPA Test Method 413.2, 418.1 or 1664A and/or, if necessary, EPA Test Method 8240 or 8260. Ethane provided the ethane fraction of the hydrocarbon vapors is less than 20 percent by volume, and hydrocarbons heavier than C14 may be excluded from the total concentration. Water samples collected for analysis shall be collected within a five foot radius of the sump inlet. One sample shall be collected near each inlet and the results averaged.

3.5 EPA: United States Environmental Protection Agency.

3.6 First Stage Production Sump: a sump which receives a stream of crude oil and produced water directly from an oil production well(s) or a field gathering system(s).

3.7 Fixed Roof Cover: a cover which does not contact a liquid surface, but is placed over and completely covers the liquid surface.

3.8 Floating Cover: a flexible, or rigid cover which rests on a liquid surface and completely covers the liquid surface except for the area under a hatch(es), and for a rigid cover the area between the cover edge and the vessel wall.

3.9 Gap-free: means there shall be no visible gaps, that is gaps which exceed 0.060 inches.

3.10 Heavy Oil: produced crude oil that has an API gravity of less than 30 degrees by ASTM Method D-1298-85.

3.11 Operator: includes but is not limited to any person who owns, leases, supervises, or operates a facility and/or equipment.

3.12 Pit: any excavation for which the intended use under normal conditions is the intermittent or emergency collection of crude oil and water and is not used for the separation of oil and water.

3.13 Pond: any very large excavation that is used for the storage and or disposal of clean produced water, is not used for the separation of oil and water, and has no more than five percent visible oil-covered surface area.

3.14 Produced Water: water, including oily water associated with the production, gathering, separating, and processing of crude oil.

3.15 Second Stage Sump: a sump which receives produced water from one or more upstream first stage separation processes, including sumps, free water knockout vessels, wash tanks, etc.

3.16 Small Producer: an operator who:

3.16.1 Produces an average over the preceding two calendar years of less than 6,000 barrels per day of crude oil from all operations within the County at the time of a request for an exemption pursuant to Section 6.1, and

3.16.2 Does not engage in petroleum refining, transportation, or marketing of refined petroleum products.

3.17 Sump: a lined or unlined surface impoundment or excavated depression in the ground which, during normal operation, is in continuous use for separating crude oil, produced water, and solids in oil producing fields.

3.18 Third Stage Sump: a sump which receives produced water from one or more upstream second stage sumps, or subsequent separation processes.

3.19 Very Small Producer: an operator producing an average over the preceding two calendar years of less than 50 barrels of crude oil per day per lease and an average over the preceding two calendar years of less than 300 barrels of crude oil per day from all operations within the county at the time of a request for an exemption pursuant to Section 6.1.

3.20 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

4.0 Exemptions

4.1 The provisions of Section 5.0 of this rule shall not apply to:

4.1.1 Second or third stage small producer sumps that have a liquid surface area of less than 1,000 square feet and that are used exclusively in the production of heavy oil.

4.1.2 Second and third stage sumps containing clean produced water.

4.1.3 Any very small producer sump that is used as a second or third stage sump that has a liquid surface area of less than 5,000 square feet, and that serves heavy oil production operations exclusively.

4.1.4 Any sump that has estimated emissions of 0.007 lb/sq. ft. per day or less established by the ARB flux-box test method. The flux-box test shall be performed as described in the ARB Evaluation Report No. C-86-105. Inclusion of the flux-box test method to demonstrate qualification for this exemption does not mean the method is approved by ARB for any other testing.

4.1.5 Any sump used as a second stage, or third stage sump for not more than seven days in any one calendar month and not more than 21 days in any one calendar year. Any such sump shall be pumped out when not in use.

4.1.6 Any sumps located at petroleum refineries.

4.1.7 Ponds.

4.1.8 Pits. On and after January 1, 2013, pits used for emergencies shall begin clean-up procedures within 24 hours after each emergency occurrence and shall be completed within 15 calendar days.

4.2 The requirements of Section 5.0 shall not apply during maintenance operations on sumps if the District is verbally notified at least 24 hours prior to the maintenance work and if maintenance will take no more than 24 hours to complete.

5.0 Requirements

5.1 On and after January 1, 2013, first stage sumps are prohibited.

5.2 No operator shall use any second or third stage sump unless it is designed and equipped with one of the following control devices properly installed, maintained, and operated:

5.2.1 A flexible floating cover;

5.2.2 A rigid floating cover equipped with a closure device between the sump wall and the cover edge which maintains the gap between the wall and cover at every point around the perimeter at no more than one inch; or

5.2.3 A fixed roof cover.

5.3 A floating, fixed, or other cover used to achieve compliance with Section 5.2 shall be constructed and maintained to meet the following criteria:

5.3.1 The cover material is impermeable to VOCs;

5.3.2 There are no holes, tears, or other such openings, except pressure vacuum valves, in the cover material which allow the emission of VOCs;

5.3.3 All hatches are kept closed and gap-free, except during maintenance, inspection, or repair;

5.3.4 The edge of any cover, except for a rigid floating cover as provided for in Section 5.2.2, forms a gap-free seal with the top edge of the sump; and

5.3.5 All pressure/vacuum vents are set to within ten percent of the maximum safe working pressure of the cover.

5.4 If a sump is replaced by an above ground tank in lieu of complying with Section 5.2, such tank shall comply with all of the applicable requirements of Rule 4623 (Storage of Organic Liquids), or at a minimum, the tank roof appurtenances shall be maintained leak-free and the tank shall be fitted with a pressure/vacuum vent set to within ten percent of the maximum allowable working pressure of the tank. If replacement tank exclusively serves identical function of sump replaced, permitting of such tank may not be considered an emission change for the purposes of Rule 2201 (New and Modified Stationary Source Review Rule).

6.0 Administrative Requirements

6.1 Recordkeeping

On and after January 1, 2013, records kept pursuant to Section 6.1 shall be maintained for a minimum of five years, and made available to the APCO, ARB, and EPA upon request.

6.1.1 Any operator claiming exemption pursuant to Section 4.1.1 shall maintain records specified in Section 6.1.1.1. On and after January 1, 2013, any operator claiming exemption pursuant to Section 4.1.1 shall maintain records specified in Section 6.1.1.1, 6.1.1.2, and 6.1.1.3.

6.1.1.1 API gravity of crude oil for each exempt sump,

6.1.1.2 Sump surface area, and

6.1.1.3 Annual production rates.

6.1.2 Any operator claiming an exemption pursuant to Section 4.1.2 shall maintain records to justify the exemption; those records shall include of the results of an independent laboratory analysis.

6.1.3 Any operator claiming exemption pursuant to Section 4.1.3 shall maintain records to justify the exemption; those records shall include the results of an independent laboratory analysis. On and after January 1, 2013, any operator claiming exemption pursuant to Section 4.1.3 shall maintain the records specified in Section 6.1.3.1, 6.1.3.2, and 6.1.3.3:

6.1.3.1 API gravity of crude oil for each exempt sump,

6.1.3.2 Sump surface area, and

6.1.3.3 Annual production rates.

6.1.4 Any operator claiming an exemption pursuant to Section 4.1.4 shall maintain records to justify the exemption; those records shall include the results of an independent laboratory analysis.

6.1.5 Any operator claiming an exemption pursuant to Section 4.1.5 shall maintain monthly records of sump use showing days of operation.

6.1.6 On and after January 1, 2013, any operator claiming an exemption pursuant to Section 4.1.7 shall maintain records to justify the exemption; those records shall include the results of an independent laboratory analysis.

6.1.7 On and after January 1, 2013, any operator claiming an exemption for emergency pits pursuant to Section 4.1.8 shall be required to maintain records documenting the date and time of each of the following:

6.1.7.1 When the use of the emergency pit started,

6.1.7.2 When clean-up of the emergency pit began, and

6.1.7.3 When clean-up of the emergency pit finished.

6.2 Test Methods

Compliance with the requirements of Section 5.0 shall be determined in accordance with the following test methods or their equivalents as approved by the EPA and the APCO:

6.2.1 Analysis of halogenated exempt compounds shall be analyzed by ARB Method 422.

6.2.2 The efficiency of any VOC destruction device shall be measured by EPA Method 25, 25a, or 25b, as applicable.

RULE 4404 HEAVY OIL TEST STATION - KERN COUNTY (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from the operation of heavy oil test stations.

2.0 Applicability

The provisions of this rule shall apply to the operation of heavy oil test stations.

3.0 Definitions

3.1 Complete Application: an application for an Authority to Construct a steam-enhanced crude oil production well vapor collection and control system which includes all design data and specifications necessary for the APCO to make the findings set forth in Rule 2070 (Standards for Granting Applications).

3.2 Cyclic Well: any crude oil production well, which is periodically (at least once in the preceding two (2) year period) injected with steam from any source for the purpose of enhancing oil production.

3.3 Heavy Oil Test Station (HOTS): a tank setting which is comprised of both a family tank and one (1) or more test tanks.

3.3.1 Family Tank: a tank which directly receives crude oil production from more than one (1) steam drive well through individual production lines which discharge into the tank.

3.3.2 Test Tank: a tank which tests the production rate from a single steam drive well.

3.4 Leak: a reading of methane on a portable hydrocarbon detection instrument (calibrated with methane) in excess of 10,000 ppm when measured at a distance of one (1) centimeter from the potential source.

3.5 Operate: to perform any activity with, or on any steam-enhanced crude oil production well, including but not limited to producing, steam-enhancing, venting, maintaining or repairing.

3.6 Pilot Testing: testing of a new cyclic well for up to 180 days from each production zone for the purpose of determining the viability of developing a steam-enhanced production zone.

3.7 Portable Hydrocarbon Detection Instrument: a hand-held hydrocarbon analyzer using flame ionization or thermal conductivity as the detection method and satisfying Method 21, 40 CFR Part 60. The instrument shall be calibrated on methane and sample at one (1) liter per minute.

3.8 Production Zone: a subsurface geologic formation or group of formations of oil bearing material beneath the surface of the ground through which steam could migrate from a steam injection well, or cyclic well being steamed to an oil production well.

3.9 Service or Repair: means a well shall be considered under service or repair during rig-up, operation, and rig-down of any rig or pulling unit used to repair or maintain surface or downhole well equipment.

3.10 Small Producer: a person who:

3.10.1 Produces an average of less than 6,000 barrels per day of crude oil from all operations within the District, and

3.10.2 Does not engage in refining, transporting, or marketing of refined petroleum products.

3.11 Steam Drive Well: means any crude oil production well which produces from the same production zone in which a steam injection well is completed and is within:

3.11.1 250 feet of a steam injection well, if the injection well is within a production well pattern of two and one-half (2-1/2) acres or smaller; or

3.11.2 350 feet of a steam injection well, if the injection well is within a production well pattern of greater than two and one-half (2-1/2) acres but less than or equal to five (5) acres; or

3.11.3 500 feet of a steam injection well, if the injection well is within a production well pattern larger than five (5) acres, or

3.11.4 1000 feet of a steam injection well, and responds to steam injected in an irregular production well pattern, and exhibits any visible emissions.

3.12 Steam-Enhanced Crude Oil Production Well: any steam drive well, cyclic well, or any other well in a production zone that has had the temperature raised by the injection of steam.

3.13 Steam Injection Well: a well into which steam is injected that enhances the production of oil from other wells in the same production zone. Cyclic wells which enhance production of oil from other wells in the production zone are considered injection wells.

3.14 Visible Emissions: from well vents are any visible plume including water vapor. When the ambient air temperature is 60°F or less a well vent shall be considered to have visible emissions if there is any visible plume and there is a reading of methane on a portable hydrocarbon detection instrument (calibrated with methane) in excess of 10,000 ppm when measured a distance of one (1) centimeter from the vent.

3.15 Well Stimulation: cyclic steam injection of a well for up to 180 days prior to the well being placed in service as a continuous steam injection well.

4.0 Emission Control Requirements

4.1 No person shall operate a HOTS unless the uncontrolled VOC emissions are reduced by at least 99 percent by weight.

4.2 When the opening in the tank roof is in use for sampling or gauging, except for pressure-vacuum valves which shall be set within ten (10) percent of the maximum allowable working pressure of the roof, it shall be equipped with a cover, seal or lid. The cover, seal or lid shall at all times be in a closed position with no visible gaps and maintained in a gas-tight condition except when the device or appurtenance is in use.

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RULE 4407 IN-SITU COMBUSTION WELL VENTS (Adopted May 19, 1994)

1.0 Purpose

The purpose of this rule is to implement federally enforceable emission limitations for in-situ combustion well vents.

2.0 Applicability

This rule is applicable to all crude oil production wells where production has been enhanced by in-situ combustion.

3.0 Definitions

3.1 Air Injection Well: a well into which air is injected, enhancing the production of oil from other wells in the same production zone.

3.2 Components of a collection and control system: all piping, valves, fittings, pumps, compressors, tanks, etc. used to collect, control, store, or dispose of VOC condensate or uncondensed VOCs from in-situ combustion well vents prior to blending of VOC condensate with crude oil or blending of non-condensible VOCs with gases to be used as fuel.

3.3 Fuel Burning Equipment: any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer.

3.4 In-Situ Combustion: a thermal crude oil recovery process in which air is injected into an oil reservoir and in-place petroleum oxidizes at an accelerated rate. The heat of combustion and combustion products enhance oil production by decreasing viscosity and pressurizing the reservoir.

3.5 In-Situ Combustion Well: any crude oil production well which produces from the same production zone in which a air injection well is completed and lies within 1000 feet of an air injection well.

3.6 Leak: a reading as methane on a portable hydrocarbon detection instrument (calibrated with methane) in excess of 10,000 ppm, when measured at the surface of the component interface where leakage could occur, with a portable hydrocarbon detection instrument calibrated with methane, or a dripping of liquid organic compounds at a rate of three (3) drops or more per minute.

3.7 Operate: to perform any activity with, or on, any in-situ combustion well, including but not limited to producing, in-situ combustion thermally enhancing, venting, maintaining or repairing.

3.8 Portable Hydrocarbon Detection Instrument: a hand held hydrocarbon analyzer using flame ionization or thermal conductivity as the detection method and satisfying Method 21, 40 CFR Part 60. The instrument shall be calibrated on methane and sampling shall occur at one liter per minute.

3.9 Production Zone: a subsurface geologic formation or group of formations of oil bearing material beneath the surface of the ground through which air could migrate from an air injection well to an oil production well.

3.10 Service or Repair: a well shall be considered under service or repair during rig-up, operation, and rig-down of any rig or pulling unit used to repair or maintain surface or downhole well equipment.

3.11 Volatile Organic Compound (VOC): defined in Rule 1020 (Definitions).

3.12 VOC Emissions: emissions resulting from the operation of an in-situ combustion well. Such emissions include uncondensed casing vent emissions and any emissions from components of a collection and control system.

4.0 Exemptions

The provisions of this rule shall not apply to any in-situ combustion well that is not producing or is undergoing service or repair.

5.0 Requirements

5.1 No person shall operate an in-situ combustion well unless the well vent is connected to:

5.1.1 an emissions control device which abates 85 percent by weight of entering VOC gases and vapors, or

5.1.2 fuel burning equipment or a smokeless flare.

5.2 All components of a collection and control system shall be maintained in good repair. The total number of leaks in a collection and control system shall not exceed two (2) percent of the components in the collection and control system.

5.3 Operator Inspection and Maintenance

5.3.1 All components of a collection and control system shall be inspected by the facility operator on a quarterly basis to ensure compliance with the provisions of this rule. If no more than two (2) percent of all components of the collection system are found to be leaking during each of three (3) consecutive quarterly inspections, the inspection frequency may be changed from quarterly to annual.

5.3.2 An operator, upon detection of a leak, shall affix a readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired. An operator shall repair each leak within 15 days of detection. The APCO may grant a ten (10) day extension to repair a leak, provided the operator demonstrates that necessary and sufficient actions have been and are being taken to correct the leak. Failure to repair a leak after a ten (10) day extension constitutes a violation of this rule.

5.4 VOC Control Efficiency Testing

Compliance testing for VOC control efficiency shall be performed annually on all collection and control systems used to comply with this rule. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. The APCO may waive the test requirements for VOC control efficiency if all uncondensed VOC emissions collected by a collection and control system are burned in fuel burning equipment or in a smokeless flare.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 The operator of any in-situ combustion well shall maintain records of operations of each well undergoing stimulation including well number and location, well stimulation start-up and shut down dates, and list of equipment operated, on a monthly basis.

6.1.2 The operator of any in-situ combustion well shall maintain an inspection and maintenance log which contains the date of each inspection, the date of discovery of leaking components, and the date of repair.

6.1.3 Records shall be maintained for a period of two years and be submitted to the APCO upon request.

6.2 Test Methods

6.2.1 VOC control efficiency shall be determined by EPA Method 25, 25a, or 25b as applicable. Noncompliance as measured by any of these methods shall be considered a violation of this rule.

6.2.2 VOC content of organic liquids shall be determined by ASTM Method E168-67, E169-63, or E260-73 as applicable.

6.2.3 Leak detection shall be performed with a portable hydrocarbon detection instrument in accordance with EPA Method 21, calibrated with methane.

7.0 Compliance Schedule

The operator of any existing in-situ well shall comply with the following compliance schedule:

7.1 By November 19, 1994, submit to the APCO a control plan which includes all steps and construction schedules to be taken to achieve compliance with this rule, and a complete application for Authority to Construct.

7.2 By May 19, 1996, demonstrate full compliance with the provisions of this rule.

RULE 4408 GLYCOL DEHYDRATION SYSTEMS (Adopted December 19, 2002)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from glycol dehydration systems. This rule also specifies the administrative and recordkeeping requirements, and the test methods.

2.0 Applicability

This rule applies to any glycol dehydration system with a glycol dehydration vent that is subject to permitting requirements pursuant to Regulation II (Permits).

3.0 Definitions

3.1 Flare: a direct combustion device in which air and all combustible gases react at the burner with the objective of complete and instantaneous oxidation of the combustible gases.

3.2 Flash Tank: a tank used to remove gases from the warm rich glycol used during the dehydration process and to reduce VOC emissions from the glycol dehydration vent(s). Flash tanks are also known as Phase Separators, Flash Separators, or Flash Tank Separators.

3.3 Glycol: a liquid desiccant commonly used to remove water vapor from natural gas streams. The most common forms of glycol used for natural gas dehydration include, but are not limited to: triethylene glycol (TEG), diethylene glycol (DEG) and ethylene glycol (EG).

3.4 Glycol Dehydration Still: the part of the glycol dehydration system in which rich moisture and hydrocarbons are removed from the glycol by simple distillation with heat from the reboiler. The still is also known as the stack or stripper.

3.5 Glycol Dehydration System: a multi-component system in which water is absorbed from a natural gas stream by coming in direct contact with glycol, the moisture is removed from the glycol, and the glycol is reused.

3.6 Glycol Dehydration Vent: any vent on the glycol dehydration system through which hydrocarbon and steam are emitted to the atmosphere or to a VOC control device. This can include the still vent and the flash tank vent.

3.7 Incinerator: an enclosed combustion device that is used for destroying organic compounds.

3.8 Leak:

3.8.1 At a Crude Oil and/or Gas Production facility, a leak is the following:

3.8.1.1 The dripping at a rate of more than three (3) drops per minute of liquid containing VOCs; or

3.8.1.2 A reading as methane in excess of 20,000 ppm above background when measured at a distance of one (1) centimeter from the potential source in accordance with the test method in Section 6.3.2.

3.8.2 At a Natural Gas Processing facility, a leak is the following:

3.8.2.1 The dripping at a rate of more than three (3) drops per minute of liquid containing VOCs; or

3.8.2.2 A reading as methane in excess of 10,000 ppm above background when measured at a distance of one (1) centimeter from the potential source in accordance with the test method in Section 6.3.2.

3.9 Reboiler: a burner that supplies heat to remove the water vapor and hydrocarbons from the rich glycol in the still by simple distillation. Reboilers are also known as regenerators.

3.10 Smokeless: any emission that meets the requirements of Rule 4101 (Visible Emissions).

3.11 Vapor Recovery System: A vapor gathering system, which may include a condenser, separator, or tank, capable of collecting the hydrocarbon vapors and gases discharged and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission into the atmosphere.

3.12 VOC: as defined in Rule 1020 (Definitions).

4.0 Exemptions

Except for complying with Section 6.1.3, the requirements of this rule shall not apply to any glycol dehydration system that:

4.1 is permitted to operate less than 200 hours per year, as verified and recorded by a continuous measurement of an operating parameter of the unit or by the cumulative measurement of the operating hours of the unit, or

4.2 is permitted to dehydrate less than 5 million standard cubic feet (MMSCF) of gas per year as verified and recorded by the cumulative measurement of gas dehydrated annually.

5.0 Requirements

5.1 No person shall operate a glycol dehydration system unless the VOC emissions from the glycol dehydration vents are controlled using one of the following:

5.1.1 A system that directs all vapors to a vapor recovery system, a fuel gas system or a sales gas system, or

5.1.2 A system in which VOC emissions are combusted by a flare, incinerator, reboiler, or thermal oxidizer. This system shall have all of the following features, as a minimum:

5.1.2.1 Operate continually in a smokeless mode,

5.1.2.2 Electronically controlled ignition system with a malfunction alarm system if the pilot flame fails,

5.1.2.3 Liquid knock-out system to condense any condensable vapors, and

5.1.2.4 Sight glass ports, if the flame is not visible.

5.1.3 Any other emission control system that controls glycol dehydration vent VOC emissions by at least 95 percent, averaged over 1 hour, or that controls glycol dehydration vent VOC emissions to a level no higher than 1.7 pounds of VOC per million dry standard cubic feet of gas dehydrated, averaged over 24 hours.

5.1.3.1 The control efficiency shall be determined by comparing the measurements of VOC emissions from the uncontrolled glycol dehydration vent with measurements of VOC emissions from the emission control system. For both measurements, the glycol dehydration system shall operate under similar conditions for the following parameters: glycol flowrate, reboiler temperature, gas flowrate, and gas moisture removal efficiency.

5.1.3.2 Systems subject to this requirement shall test, according to the methods listed in 6.2, 6.3.1, and 6.4, for compliance upon installation and not less than once every 24 months thereafter.

5.2 The condensed hydrocarbon liquid stream from the glycol dehydration vent shall be stored and handled in a manner that will not cause or allow evaporation of VOC to the atmosphere.

5.3 All control systems shall be maintained in a leak-free condition. A leak-free condition shall be determined by utilizing the test method in Section 6.3.2.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 The operator of any glycol dehydration system subject to this rule shall maintain monthly records of the amount of gas dehydrated (MMSCF).

6.1.2 The operator of any glycol dehydration system subject to this rule shall retain the following information to assist with rule compliance:

6.1.2.1 Facility name, APCD permit number,

6.1.2.2 Location, size of glycol dehydrator reboiler (MMBTU/hr), and type of glycol used,

6.1.2.3 Description of any installed VOC control system,

6.1.2.4 Flow diagram of dehydrator and any VOC controls,

6.1.2.5 Maintenance records of the VOC control system,

6.1.2.6 Reports of source tests as required by Sections 5.1.3, and

6.1.2.7 All records necessary to document the inputs to and outputs of GRI-GLYCalc^{TM} software, if used.

6.1.3 Owners and operators of glycol dehydration systems operating under an exemption in Section 4.0, shall maintain:

6.1.3.1 hours of operation per month for the glycol dehydration system operating under the exemption in Section 4.1, or

6.1.3.2 records of total gas dehydrated annually (MMSCF) operating under the exemption in Section 4.2.

6.1.4 The records listed in Sections 6.1.1, 6.1.2, and 6.1.3 shall be retained on the premises for a period of not less than five years and made available to any District representative upon request.

6.2 Glycol Dehydration Vent Testing

VOC emissions from glycol dehydration vents shall be determined using the Glycol Material Balance Method described in Section 6.2.1, or tested according to the methods listed in Section 6.2.2.

6.2.1 Glycol Material Balance Method

6.2.1.1 This method may be used only if a flash tank is operating upstream of the glycol dehydration vent.

6.2.1.2 This method is based on a material balance calculation, and glycol shall not be considered to be a VOC. The glycol

circulation rate shall be based on the rated pump output and/or flow rate measurements.

6.2.1.3 Samples shall be collected at process pressures using evacuated stainless steel cylinders connected to bypass loops on the rich and lean glycol lines. The glycol shall be circulated through the cylinders for a minimum of 5 minutes. The liquid and gas phases of the glycol samples shall be analyzed separately, and the volumes of the liquid and gas present in the cylinders shall be measured using the following air displacement apparatus:

6.2.1.3.1 Place sample cylinder in a vertical configuration with bottom connected to the glycol drain.

6.2.1.3.2 The top of the cylinder is connected to a three-way valve with one exit leading to a tedlar bag for gas collection and the other leading to a 1 liter graduated burette (initially filled with distilled water) followed by a 2 liter separatory funnel.

6.2.1.4 Gas-phase samples shall be analyzed for VOC using gas chromatography (GC) according to ASTM E260. Gas samples shall be injected directly in the gas chromatograph followed by a photo-ionization detector (PID) or flame ionization detector (FID) analyzer.

6.2.1.5 For the liquid samples, EPA Test Methods SW-846 shall be followed for sample preparation. Analysis of the sample for VOC content (Total Petroleum Hydrocarbons) shall be determined by EPA Method 8260. All C6 through C9 compounds shall be quantified and should include: alkylpentanes, cyclopentanes, alkyl hexanes, cyclohexane, toluene, alkyl benzenes, and xylene.

6.2.2 Vent Emission Testing

6.2.2.1 VOC emissions from glycol dehydration vents shall be determined according to a test protocol, which shall be submitted to the District and approved in writing by the APCO prior to testing. Such protocols shall be suitable to the specific unit to be tested and shall provide for:

6.2.2.1.1 The difficulties of determining VOC in the presence of high steam concentrations,

6.2.2.1.2 Either total capture of condensible and noncondensible exhaust or isokinetic sampling of a representative portion thereof, if the glycol

dehydration unit processes 15 MMSCFD or more natural gas, on a dry basis,

6.2.2.1.3 Condensation of steam and retention of condensate and a representative portion of non-condensible gas analysis,

6.2.2.1.4 Determination of VOC concentration in non-condensible gas by EPA Method 25, 25A, 25B, or 18,

6.2.2.1.5 Determination of VOC in condensate by EPA Method 8260 (Total Petroleum Hydrocarbons),

6.2.2.1.6 Isokinetic sampling and separation of condensible gases which conforms to EPA Method 5, and

6.2.2.1.7 Exhaust flow rate measurements which conform to EPA Method 2 or 2A.

6.3 Emission Control System Testing

6.3.1 The VOC emissions from the emissions control system in Section 5.1.3 shall be determined as follows:

6.3.1.1 Measurement of VOC vapor concentration shall be determined by EPA Method 25, 25A, 25B, or 18, and

6.3.1.2 Measurement of vapor flow through pipes shall be determined by EPA Methods 2 or 2A.

6.3.2 A leak-free condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21.

6.4 Utilization of the Gas Research Institute's GLYCalc™ software

6.4.1 The GRI-GLYCalc™ software, version 3.0 or higher, may be used to determine flow rates in lieu of methods listed in Section 6.2.2.1.6, 6.2.2.1.7, and 6.3.2.

6.4.2 APCO and EPA approval must be gained prior to the use of the GRI-GLYCalc™ software.

6.5 All ASTM test methods referenced in this Section are the most recently EPA-approved version that appears in the Code of Federal Regulations as Materials Approved for Incorporation by Reference.

7.0 Compliance Schedule

All owner/operators shall comply with the applicable provisions of this rule by December 31, 2003.

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RULE 4409 COMPONENTS AT LIGHT CRUDE OIL PRODUCTION FACILITIES, NATURAL GAS PRODUCTION FACILITIES, AND NATURAL GAS PROCESSING FACILITIES (Adopted April 20, 2005)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from leaking components at light crude oil production facilities, natural gas production facilities, and natural gas processing facilities.

2.0 Applicability

This rule shall apply to components containing or contacting VOC streams at light crude oil production facilities, natural gas production facilities, and natural gas processing facilities.

3.0 Definitions

3.1 APCO: The Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District, or any person authorized to act on behalf of the APCO.

3.2 ARB: California Air Resources Board as established by the California Health and Safety Code Section 39510, or any person authorized to act on its behalf

3.3 Background: a reading on a portable hydrocarbon detection instrument which is determined at a distance no greater than two (2) meters upwind from any component to be inspected and which is uninfluenced by any specific emission point.

3.4 Closed-vent System: a APCO-approved system that is not open to the atmosphere and that is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to an APCO-approved control device that has a overall VOC collection and destruction or removal efficiency of at least 95%, or that transports gases or vapors back to a process system.

3.5 Commercial Quality Natural Gas: a mixture of gaseous hydrocarbons with at least 80 percent methane by volume (≥ 80 vol%) and less than ten percent by weight (<10 wt%) VOC, as determined according to test methods specified in Section 6.3.2, and meets the criteria specified in Public Utilities Commission (PUC) General Order 58-A.

3.6 Component: includes, but is not limited to, any valve, fitting, threaded connection, pump, compressor, pressure relief device, pipe, polished rod stuffing box, flange, process drain, sealing mechanism, hatch, sight-glass, meter or seal fluid system in VOC service.

3.6.1 Major Component: any pump 5 brake horsepower or larger, any compressor, and any pressure relief valve 4 inches in diameter or larger.

3.6.2 Minor Component: any component that is not a major component.

3.7 Component Type: includes, but is not limited to, any one (1) of the following groups: valves, fittings, threaded connections, pumps, compressors, pressure relief devices, pipes, polished rod stuffing boxes, flanges, process drains, sealing mechanisms, hatches, sight-glasses, meters, or seal fluid systems in VOC service.

3.8 Compressor: a device used to compress gases or vapors or a combination of gases and vapors by the addition of energy, and includes all associated components used for connecting and sealing purposes. The phrase "all associated components used for connecting and sealing purposes" means the first VOC leak points (first components) connected on the body of the compressor. For example, a valve that is connected to a threaded hole on body of the compressor, the first VOC leak point is the threaded connection on the body side of the compressor, but the valve itself is not a "first VOC leak point". Similarly, a compressor shaft seal is considered as a first “VOC leak point”.

3.9 Compressor Part: for the purpose of Section 5.3.7, a compressor part refers to the “first VOC leak point” as explained in Section 3.8.

3.10 Critical Component: any component that would require the shutdown of a critical process unit if that component was shut down or disabled.

3.11 Critical Process Unit: a process unit that must remain in service because of its importance to the overall process that requires it to continue to operate, and has no equivalent equipment to replace it or cannot be bypassed, and it is technically infeasible to repair leaks from that process unit without shutting it down and opening the process unit to the atmosphere.

3.12 Critical Process Unit Shutdown: the shutdown of a critical process unit or part of the critical process unit that causes the entire unit to cease operating.

3.13. District: San Joaquin Valley Unified Air Pollution Control District.

3.14 Essential Component: a component that cannot be taken out of service without reducing, by more than 33 percent, the throughput of the process unit that it serves.

3.15 Facility: a stationary source as defined in Rule 2201 (New and Modified Stationary Source Rule).

3.16 Fitting: a component, excluding flanges and threaded connectors, used to attach or connect pipes or piping system. Examples of a "fitting" include, but are not limited to quick-disconnect fitting, push-in-fittings, and cam-locks.

3.17 Gas/Vapor Service: a component is considered to be in gas/vapor service when the fluid in contact with the component contains VOCs and the fluid is primarily in gaseous state at operating conditions.

3.18 Inaccessible Component: a component that is located over 15 feet above ground when access is required from the ground; or a component that is located over six (6) feet away from a platform when access is required from the platform, or a component in a location that would require the elevation of monitoring personnel higher than six (6) feet above permanent support surfaces.

3.19 Inspection: checking and/or testing in order to detect leaks.

3.19.1 Operator Inspection: inspection of components conducted by the operator pursuant to the inspection and re-inspection schedules specified in this rule for the purpose of demonstrating compliance with this rule.

3.19.2 District Inspection: inspection of components by District personnel or their representative to insure facilities and/or operators are in compliance with District requirements.

3.20 Leak: the dripping of VOC-containing liquid or the detection of a concentration of total organic compound, above background, determined according to the test method specified in Section 6.3.1 that exceeds the values specified in Table 1, Sections 3.20.1, and Section 3.20.2 of this rule. Any liquid or gas coming from a component undergoing repair or replacement, or during sampling of process fluid from a component into a container is not considered a leak provided such activities are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

Table 1 Gas Leak Standards in ppmv as Methane

Type of Component	Major Gas Leak	Minor Gas Leak	
		Components in Liquid Service	Components in Gas/Vapor Service
1. Valves	Greater than 10,000	1,000 to 10,000	2,000 to 10,000
2. Threaded Connections	Greater than 10,000	1,000 to 10,000	2,000 to 10,000
3. Flanges	Greater than 10,000	1,000 to 10,000	2,000 to 10,000
4. Pipes	Greater than 10,000	1,000 to 10,000	2,000 to 10,000
5. Pumps	Greater than 10,000	1,000 to 10,000	2,000 to 10,000
6. Compressors	Greater than 10,000	1,000 to 10,000	2,000 to 10,000
7. PRDs	Greater than 10,000	200 to 10,000	400 to 10,000
8. Polished Rod Stuffing Boxes	Greater than 10,000	1,000 to 10,000	1,000 to 10,000
9. Other Components not listed in items 1, 2, 3,4, 5, 6,7, and 8 above	Greater than 10,000	1,000 to 10,000	2,000 to 10,000

3.20.1 Major Liquid Leak: a visible mist or a continuous flow of liquid that is not seal lubricant.

3.20.2 Minor Liquid Leak: a liquid leak, except seal lubricant, that is not a major liquid leak and drips liquid at a rate of more than three drops per minute.

3.21 Leak Minimization: reducing a leak to the lowest achievable level without damaging the component using best modern practices which include, but are not limited to, adding sealing material to the component, tightening the component, or adjusting the component without shutdown of the process that the component serves and that can be safely accommodated.

3.22 Light Crude Oil: crude oil with API gravity equal to or greater than 30 degrees and a true vapor pressure (TVP) greater than 1.5 psia as determined by the test methods specified in Section 6.3.4.

3.23 Light Crude Oil Production Facility: that portion of a crude oil production facility at which light crude oil production and handling are conducted, as defined in the North American Industry Classification System 211111 (Crude Petroleum and Natural Gas Extraction).

3.24 Liquid Service: a component is considered to be in liquid service when the fluid in contact with the component contains VOCs and the fluid is primarily liquid at operating conditions.

3.25 Natural Gas Processing Facility: a facility engaged in the separation of natural gas liquids from field gas and/or fractionating of natural gas liquids to 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 facility. For the purpose of this rule, a gas liquids processing facility as defined in Rule 4455 (Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants) is not considered a natural gas processing facility.

3.26 Natural Gas Production Facility: that portion of a gas production facility at which natural gas production and handling are conducted, as defined North American Industry Classification System (NAICS) as Industry No. 211111 (Crude Petroleum and Natural Gas Extraction).

3.27 Open-ended Line or Valve: any line or valve, except PRV, having one side of the line or valve seat in contact with the process fluid and one side open to the atmosphere, either directly or through an open piping.

3.28 Portable Hydrocarbon Detection Instrument: a hand-held hydrocarbon analyzer that meets the criteria specified in US EPA Method 21, 40 CFR Part 60. The instrument shall be calibrated with methane.

3.29 Pressure Relief Device (PRD): a pressure relief valve or a rupture disc.

3.30 Pressure Relief Valve (PRV): an automatic pressure-relieving device associated with a process vessel or piping system that is activated by pressure upstream of the device and relieves to the atmosphere (atmospheric PRV).

3.31 Process Drain: any open portion of a non-continuous piping system, including open origination portion(s) of such a system used for collection and transport of liquids discharged from process vessels, spills, or other sources. Drain origination points and drain termination points are not open-ended lines. Process drains are not open-ended lines.

3.32 Process System: an APCO-approved system that is not open to the atmosphere and is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gases or vapors from a piece of equipment to a process stream, fuel gas system, or sales gas system.

3.33 Pump: a device used to transport fluids by the addition of energy, and includes all associated components used for connecting or sealing purposes. The phrase "all associated components used for connecting and sealing purposes" means the first VOC leak points (first components) on the body of the pump. For example, a valve that is connected to a threaded hole on body of the pump, the first VOC leak point is the threaded connection on the body side of the pump, but the valve itself is not a "first VOC leak point". Similarly, a pump shaft seal is considered as a first “VOC leak point”.

3.34 Pump Part: for the purpose of Section 5.3.7, a pump part refers to the "first VOC leak point" as explained in Section 3.33.

3.35 Release: a VOC emission to the atmosphere from PRD caused by an increase in upstream pressure. A leak caused by improper reseating of the PRD is not a release.

3.36 Rupture Disk: a rigid diaphragm held between flanges for the purpose of isolating organic compounds from the atmosphere or from a downstream pressure relief valve. Most rupture disks are designed to fail at a certain pressure point.

3.37 Sight glass: a device located on a fluid line or a process vessel that allows an operator to view the product or material inside a fluid line or a process vessel.

3.38 Tag: a piece of paper, metal, plastic or other suitable material that is attached to a component for the purpose of identification or other information.

3.39 True Vapor Pressure (TVP): the equilibrium partial vapor pressure exerted by an organic liquid at actual storage temperature as determined by the applicable test methods specified in Section 6.3.

3.40 Turnaround: scheduled shutdown of a process unit for maintenance and repair work.

3.41 Unmanned Facility: a facility which has no permanent-sited operators. Permanent-sited operators means personnel responsible for the operation of the equipment subject to this rule is ~~not~~ in attendance at the facility 24 hours per day.

3.42 Unsafe-to-Monitor Component: a component installed at a location that would prevent the safe inspection or repair of a component as defined by OSHA standards or in provisions for worker safety stated in 29 CFR 1910.

3.43 US EPA: United States Environmental Protection Agency

3.44 Vacuum Service: operating under a negative gauge pressure or below atmospheric pressure.

3.45 Valve: a device that regulates the flow of fluid in a piping system by means of an external actuator acting to permit or block passage of fluid.

3.46 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

4.0 Exemptions

4.1 The requirements of this rule shall not apply to components subject to Rule 4623 (Storage of Organic Liquids); to components included in the inspection and maintenance (I&M) program implemented pursuant to Section 5.7 of Rule 4623; or

to components subject to Rule 4401 (Steam Enhanced Crude Oil Production Well Vents).

4.2 Except for complying with the applicable requirements of Sections 6.1 and 7.3, the requirements of this rule shall not apply to components described in Sections 4.2.1 through 4.2.10. An operator claiming an exemption pursuant to Section 4.2 shall provide proof of the applicable criteria to the satisfaction of the APCO.

4.2.1 Pressure relief devices, pumps, and compressors equipped with a closed-vent system as defined in Section 3.0.

4.2.3 Components buried below ground.

4.2.4 Components exclusively handling liquid streams which have less than 10 percent by weight (<10 wt%) evaporation at 150^0 C as determined by the test method specified in Section 6.3.3.

4.2.5 Components handling liquids with 90 percent by volume or greater (≥90 vol%) water concentration if the components are located after initial oil/water separation.

4.2.6 Components at oil production facilities and gas production facilities exclusively handling gas/vapor or liquid with a VOC content of ten percent by weight or less (≤10 wt%), as determined by the test methods in Section 6.3.2.

4.2.7 Components at natural gas processing facilities exclusively handing gas/vapor or liquid with a VOC content less than one percent by weight (<1 wt%) as determined by the test method specified in Section 6.3.2.

4.2.8 Components exclusively in vacuum service.

4.2.9 Components handling commercial quality natural gas exclusively.

4.2.10 One-half inch nominal or less stainless steel tube fittings which have been demonstrated to the APCO to be leak-free based on initial inspection using the test method specified in Section 6.3.1.

5.0 Requirements

5.1 Operating Requirements:

5.1.1 An operator shall not use any component that leaks in excess of the applicable leak standards of this rule, or that is found to be in violation of the provisions specified in Section 5.1.3. Components that have been found

leaking in excess of the applicable leak standards of this rule may be used provided such leaking components have been identified with a tag for repair, are repaired, or are awaiting re-inspection after being repaired, within the applicable time period specified in this rule.

5.1.2 Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

5.1.3 Determination of Compliance with the Leak Standards

5.1.3.1 District Inspection

5.1.3.1.1 The operator shall be in violation of this rule if any District inspection demonstrates that one or more of the conditions in Section 5.1.4 exist at the facility.

5.1.3.1.2 Notwithstanding the provision of Section 5.1.3.1.1, minor gas leaks from polished rod stuffing boxes (PRSB) found during any District inspection shall not be counted toward determination of compliance with this rule provided the operator repairs, replaces, or removes leaking PRSB from VOC service as soon as practicable but not later than the time frame specified in this rule.

5.1.3.2 Operator Inspection

5.1.3.2.1 Except for annual operator inspection described in Section 5.1.3.2.3, any operator inspection that demonstrates one or more of the conditions in Section 5.1.4 exist at the facility shall not constitute a violation of this rule if the leaking components are repaired as soon as practicable but not later than the time frame specified in this rule. Such components shall not be counted towards determination of compliance with the provisions of Section 5.1.4.

5.1.3.2.2 Leaking components detected during operator inspection pursuant Section 5.1.3.2.1 that are not repaired, replaced, or removed from operation as soon as practicable but not later than the time frame specified in this rule shall be counted toward determination of compliance with the provisions of Section 5.1.4.

5.1.3.2.3 Any operator inspection conducted annually for a component type (including operator annual inspections pursuant to Section 5.2.6, 5.2.7, 5.2.8, or 5.2.9) that demonstrates one or more of the conditions in Section 5.1.4 exist at the facility shall constitute a violation of this rule regardless of whether or not the leaking components are repaired, replaced, or removed from operation within the allowable repair time frame specified in this rule.

5.1.4 Leak Standards

For the purpose of this rule, a component shall be considered leaking if one or more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 exist at the facility.

5.1.4.1 An open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations requiring process fluid flow through the open-ended lines. Attended operations include draining or degassing operations, connection of temporary process equipment, sampling of process streams, emergency venting, and other normal operational needs, provided such operations are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

5.1.4.2 A component with a major liquid leak.

5.1.4.3 A component with a gas leak greater than 50,000 ppmv.

5.1.4.4 A component leak described in Sections 5.1.4.4.1 through 5.1.4.4.3 and numbering in excess of the maximum allowable number or percent specified in Table 2.

5.1.4.4.1 A minor liquid leak; or

5.1.4.4.2 A minor gas leak; or

5.1.4.4.3 A gas leak greater than 10,000 ppmv up to 50,000 ppmv.

Table 2– Maximum Allowable Number or Percent of Leaking Components Per Inspection Period

Component	Maximum Number of Leaks for 200 or fewer Components Inspected*	Maximum Percent or Number of Leaks for more than 200 Components Inspected*
1. Valves	1	0.5% of number inspected
2. Threaded Connections	1	0.5% of number inspected
3. Flanges	1	0.5% of number inspected
4. Pumps	2	1.0% of number inspected
5. Compressors	1	1 leak
6. PRDs	1	1 leak
7. Polished Rod Stuffing Boxes	4	2.0% of number inspected
8. Other Components not listed in items 1, 2, 3, 4, 5, 6, 7, 9, and 10	1	1 leak
9. Pipes at Light Crude Oil Production Facilities or Gas Production Facilities	Maximum Number of Leaks for 200 or fewer production wells inspected	Maximum Number of Leaks for more than 200 production wells inspected
	2	1% of number inspected
10 Pipes at Natural Gas Processing Facilities	Maximum Number of Leaks	
	2	

*The maximum number of leaks in Table 2 shall be rounded upwards to the nearest integer, where required. The maximum allowable percent of leaks is calculated from the total number of components of a given type inspected during the specified inspection period.

5.2 Inspection and Re-inspection Requirements

5.2.1 For manned light oil production facilities, gas production facilities, and gas processing facilities, an operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, pressure relief valves in service at least once every 24 hours except when operators do not report to the facility for that given 24 hours.

5.2.2 For unmanned light oil production facilities, gas production facilities, or gas processing facilities, the operator shall audio-visually inspect for leaks all accessible operating pumps, compressors, PRDs in service at least once per calendar week.

5.2.3 Any audio-visual inspection of all accessible operating pumps, compressors, and PRDs performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected using the test method specified in Section 6.3.1 not later than

24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of this rule.

5.2.4 Notwithstanding the requirements of Sections 5.2.1, 5.2.2, and 5.2.3, the operator shall inspect all components using the test method specified in Section 6.3.1 at least once every calendar quarter, except for inaccessible components, unsafe-to-monitor components, or pipes. Inaccessible components and unsafe-to-monitor components shall be inspected in accordance with the provisions of Sections 5.2.6 and 5.2.7, respectively. Pipes shall be inspected in accordance with the provisions of Section 5.2 8.

5.2.5 The operator shall inspect, immediately after placing into service, all new, replaced, or repaired fittings, flanges, and threaded connections using the test method specified in Section 6.3.1.

5.2.6 The operator shall inspect all inaccessible components at least once every 12 months using the test method specified in Section 6.3.1.

5.2.7 The operator shall inspect all unsafe-to-monitor components during each turnaround using the test method specified in Section 6.3.1.

5.2.8 The operator shall visually inspect all pipes for leaks at least once every 12 months.

5.2.8.1 Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected using the test method specified in Section 6.3.1 within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of this rule.

5.2.8.2 The operator may conduct the annual pipe inspection required by Section 5.2.8 in conjunction with the annual pipe inspection required by the Department of Oil, Gas, and Geothermal Resources (DOGGR) pursuant to California Code of Regulation Title 14, Division 2, Subchapter 2, Section 1774 (Oilfield Facilities and Equipment Maintenance), or by the Spill Prevention Control and Countermeasure Plan (SPCC) pursuant to 40 Code of Federal Regulation Part 112 (Oil Prevention and Response: Non-Transportation-Related Onshore and Offshore Facilities). Records of annual pipe inspection required by DOGGR or SPCC may be used to document the inspection required by Section 5.2.8. The operator shall maintain the records of such inspections at the facilities. The records shall be made available to the APCO, ARB, and US EPA upon request.

5.2.9 Notwithstanding the requirement of Section 5.2.4, the operator may apply for a written approval from the APCO to change the inspection frequency from quarterly to annually for a component type, or an operator who is already on an annual inspection frequency on or before (rule adoption date) may apply for a written approval from the APCO to continue conducting annual inspections for a component type, provided the operator meets all the criteria specified in Sections 5.2.9.1 through 5.2.9.3. This approval shall apply to ~~all~~ accessible component~~s~~ types specifically designated by the APCO, except pumps, compressors, and PRDs which shall continue to be inspected on a quarterly basis.

5.2.9.1 The operator was not in violation of any provision of Sections 5.1 during five consecutive quarterly inspections for that component type.

5.2.9.2 The operator did not receive a Notice of Violation from the APCO during the previous 12 months violating any provisions of this rule for that component type.

5.2.9.3 The written request shall include pertinent documentation to demonstrate that the operator has successfully met the requirements of Sections 5.2.9.1 and 5.2.9.2.

5.2.10 The annual inspection frequency approved by the APCO pursuant to Section 5.2.9 shall revert to quarterly inspection frequency for a component type if either one of the following occurs:

5.2.10.1 The operator inspection or District inspection demonstrates that a violation of the provisions of Sections 5.1, 5.2, or 5.3 exists for that component type; or

5.2.10.2 The APCO issued a Notice of Violation for violating any of the provisions of this rule during the annual inspection period for that component type.

5.2.11 When the inspection frequency changes from annual to quarterly inspections pursuant to Section 5.2.10, the operator shall notify the APCO in writing within five (5) calendar days after changing the inspection frequency. The written notification shall include the reason(s) and date of change to quarterly inspection frequency.

5.2.12 The operator shall initially inspect a PRD that releases to the atmosphere using the test method specified in Section 6.3.1 as soon as practicable but not later than 24 hours after the time of the release. The operator shall re-inspect the PRD using the test method specified in Section 6.3.1 not earlier than 24

hours after the initial inspection but not later than 15 calendar days after the date of the release and is leak-free. If the PRD is found to be leaking at either inspection, the PRD leak shall be treated as if the leak was found during quarterly operator inspections.

5.2.13 Except for PRD subject to the requirements of Section 5.2.12, a component shall be inspected not later than 15 calendar days after repairing the leak or replacing the component using the test method specified in Section 6.3.1.

5.2.14 A District inspection in no way fulfills any of the mandatory inspection requirements that are placed upon operators and cannot be used or counted as an inspection required of an operator. Any attempt by an operator to count such District inspections as part of the mandatory operator's inspections is considered a willful circumvention of the rule and is a violation of this rule.

5.3 Maintenance Requirements

5.3.1 Upon detection of a leaking component, the operator shall affix to that component a weatherproof readily visible tag.

5.3.2 The tag shall remain affixed to the component until all the conditions specified in Sections 5.3.2.1 through 5.3.2.3 have been met.

5.3.2.1 The leaking component has been repaired or replaced; and

5.3.2.2 The component has been re-inspected using the test method in Section 6.3.1; and

5.3.2.3 The component is found to be in compliance with the requirements of this rule.

5.3.3 The tag shall include the following information:

5.3.3.1 Date and time of leak detection.

5.3.3.2 Date and time of leak measurement.

5.3.3.3 For gaseous leaks, indicate the leak concentration in ppmv.

5.3.3.4 For liquid leaks, indicate whether it is a major liquid leak or a minor liquid leak.

5.3.3.5 For essential components, unsafe-to-monitor components, or critical components, so indicate on the tag.

5.3.4 An operator shall minimize all component leaks immediately to the extent possible, but not later than one (1) hour after detection of leaks in order to stop or reduce leakage to the atmosphere.

5.3.5 If the leak has been minimized but the leak still exceeds the applicable leak standards of this rule, an operator shall comply with at least one of the requirement of Sections 5.3.5.3, 5.3.5.4 or 5.3.5.5 as soon as practicable but not later than the time period specified in Table 3. For each calendar quarter, the operator may be allowed to extend the repair period as specified in Table 3, for a total number of leaking components, not to exceed 0.05 percent of the number of components inspected, by type, rounded upward to the nearest integer where required.

5.3.5.1 The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the repair period specified in Table 3.

5.3.5.2 The start of the repair period shall be the time of the initial leak detection.

5.3.5.3 Repair or replace the leaking component; or

5.3.5.4 Vent the leaking component to a closed vent system as defined in Section 3.0.

5.3.5.5 Remove the leaking component from operation.

Table 3. Repair Period

Type of Leak	Repair Period in Calendar Days	Extended Repair Period in Calendar Days
Gas Leaks		
Minor Gas Leak (See Table 1)	7	7
Major Gas Leak greater than 10,000 ppmv but equal to or less than 50,000 ppmv	3	2
Major Gas Leak greater than 50,000 ppmv	2	0
Liquid Leaks		
Minor Liquid Leak (See Section 3.20.2)	3	0
Major Liquid Leak (See Section 3.20.1)	2	0

5.3.6 If the leaking component is an essential component or a critical component and which cannot be immediately shut down for repairs, the operator shall:

5.3.6.1 Minimize the leak within one hour after detection of leaks; and

5.3.6.2 If the leak has been minimized, but the leak still exceeds the applicable leak standards of this rule, the essential component or critical component shall be repaired or replaced to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever ~~is~~ comes earlier.

5.3.7 For any component that has incurred five repair actions for major gas leaks or major liquid leaks, or combination of major gas leaks and major liquid leaks within a continuous 12-month period, the operator shall comply with at least one of the requirements specified in Sections 5.3.7.1, 5.3.7.2, 5.3.7.3, or 5.3.7.4 by the applicable deadlines specified in Sections 5.3.7.5 and 5.3.7.6. If the original leaking component is replaced with a new like-in-kind component before incurring five repair actions for major leaks within 12-consecutive months, the repair count shall start over for the new component. An entire compressor or pump need not be replaced provided the compressor part(s) or pump part(s) that have incurred five repair actions as described in Section 5.3.7 are brought into compliance with at least one of the requirements of Sections 5.3.7.1 through 5.3.7.6.

5.3.7.1 Replace or retrofit the component with the control technology specified in Table 4. Notify the APCO in writing prior to replacing or retrofitting the component; or

Table 4 - Component Control Technology Replacement/Retrofit

Component Type	Control Technology
Compressors	Replace existing seal with dual mechanical seal, oil-film seal, gas seal, or face-type seal
Pumps	Replace with seal-less pump or replace with dual mechanical seal
PRD	Replace PRD and install a rupture disc in the line which precedes the PRD such that the PRD is in series with and follows the rupture disc.
Valves	Replace with sealed bellows valve, or graphite or teflon chevron seal rings in a live-loaded packing gland
Threaded Connections	Weld connections or replace threaded connections with flanges
Sampling Connections	Replace with closed-loop sampling system

5.3.7.2 Replace the component with Achieved-in-Practice Best Available Control Technology (BACT) equipment, as determined in accordance with Rule 2201 (New and Modified Stationary Source Review Rule), and as approved by the APCO in writing; or

5.3.7.3 Vent the component to an APCO-approved closed-vent system as defined in Section 3.0; or

5.3.7.4 Remove the component from operation.

5.3.7.5 For any component that is accessible, is not unsafe-to-monitor, is not an essential component, is not a critical component, the operator shall comply with the requirement of Section 5.3.7.1, Section 5.3.7.2, Section 5.3.7.3, or Section 5.3.7.4 as soon as practicable but not later than twelve (12) months after the date of detection of the fifth major leak within a continuous 12-month period as indicated in Section 5.3.7.

5.3.7.6 For any inaccessible component, unsafe-to-monitor component, essential component, or critical component the operator shall comply with the requirement of Section 5.3.7.1, Section 5.3.7.2, Section 5.3.7.3 or Section 5.3.7.4 as soon as practicable but not later than the next turnaround or not later than two (2) years after the date of detection of the fifth major leak within a continuous 12-month period as indicated in Section 5.3.7, whichever comes earlier.

5.4 Component Identification Requirements

5.4.1 All major components and critical components shall be physically identified clearly and visibly for inspection, repair, and recordkeeping purposes. The physical identification shall consist of labels, tags, manufacturer's nameplate identifier, serial number, or model number, or other system approved by the APCO that enables an operator or the APCO to locate each individual component. The operator shall replace tags or labels that become missing or unreadable as soon as practicable but not later than 24 hours after discovery.

5.4.2 The operator shall comply with the requirements of Section 6.1.4 if there is any change in the description of major components or critical components.

6.0 Administrative and Recordkeeping Requirements

6.1 Operator Management Plan

6.1.1 By October 20, 2005, an operator whose existing components are either subject to this rule or whose existing components are exempt pursuant to Section 4.2 of this rule on or before April 20, 2005 shall submit an Operator Management Plan for approval by the APCO.

6.1.2 The operator shall keep a copy of the APCO-approved Operator Management Plan at the facility and make it available to the APCO, ARB, and US EPA upon request.

6.1.3 The operator shall describe in the Operator Management Plan all components subject to this rule and all components that are exempt pursuant

to Section 4.2 of this rule. The Plan shall contain a description of the procedures that the operator will use to comply with the requirements of this rule. The Plan shall include, at a minimum, all of the following information:

6.1.3.1 Identification and description of any known hazard that might affect the safety of an inspector.

6.1.3.2 Diagrams, charts, spreadsheets, or other methods approved by the APCO which describe the following information:

6.1.3.2.1 Except for pipes, the number of components that are subject to this rule by component type and type of service (i.e., liquid service or gas/vapor service).

6.1.3.2.2 Except for pipes, the number and types of major components, inaccessible components, unsafe-to-monitor components, critical components, and essential components that are subject to this rule–including the reason(s) for such designation.

6.1.3.2.3 Except for pipes, the location of components subject to the rule (components may be grouped together functionally by process unit or facility description).

6.1.3.2.4 Except for pipes, components exempt pursuant to Section 4.2 (except for components buried below ground) may be described in the Operator Management Plan by grouping them functionally by process unit or facility description. The results of any laboratory testing or other pertinent information to demonstrate compliance with the applicable exemption criteria for components for which an exemption is being claimed pursuant to Sections 4.2 shall be submitted with the Operator Management Plan.

6.1.3.3 Detailed schedule of inspection to be conducted as required by this rule, including identification of all unmanned or manned oil production facilities, gas production facilities, and gas processing facilities.

6.1.3.4 Specify whether a qualified contractor or in-house team will perform the inspections.

6.1.3.5 Establish an employee training program for inspecting, repairing, and recordkeeping procedures, as necessary.

6.1.3.5.1 Specify the training standards for personnel performing inspections and repairs.

6.1.3.5.2 Document the leak detection training in conducting the test method specified in Section 6.3.1 for new operators, and for experienced operators, as necessary.

6.1.3.5.3 The operator shall maintain copies of the training records at the facility. Copies of the training records shall be made available to the APCO, US EPA, and ARB upon request.

6.1.4 By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to an existing Operator Management Plan.

6.1.5 The APCO shall provide written notice to the operator of the approval or incompleteness of a new or revised Operator Management Plan within 60 days of receiving such Plan. If the APCO fails to respond in writing within 60 days after the date of receiving the Plan, it shall be deemed approved. No provision of the Plan, approved or not, shall conflict with or take precedence over any provision of this rule.

6.2 Inspection Log

6.2.1 The operator shall maintain an inspection log containing, at a minimum, all of the following information:

6.2.1.1 Total number of components inspected, and total number and percentage of leaking components found by component types.

6.2.1.2 Location, type, name or description of each leaking component and description of any unit where the leaking component is found.

6.2.1.3 Date of leak detection and method of leak detection.

6.2.1.4 For gaseous leaks, record the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak.

6.2.1.5 Date of repair, replacement, or removal from operation of leaking components.

6.2.1.6 Identification and location of essential components and critical components found leaking that cannot be repaired until the next

process unit turnaround or not later than one year after leak detection, whichever comes earlier.

6.2.1.7 Methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier.

6.2.1.8 After the component is repaired or is replaced, the date of re-inspection and the leak concentration in ppmv.

6.2.1.9 Inspector's name, business mailing address, and business telephone number.

6.2.1.10 The facility operator responsible for the inspection and repair program shall sign and date the inspection log certifying the accuracy of the information recorded in the log.

6.2.2 Records of leaks detected during quarterly or annual operator inspection, and each subsequent repair and re-inspection, shall be submitted to the APCO, ARB, and US EPA upon request.

6.2.3 Records of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components, including a copy of current calibration gas certification from the vendor of said calibration gas cylinder, the date of calibration, concentration of calibration gas, instrument reading of calibration gas before adjustment, instrument reading of calibration gas after adjustment, calibration gas expiration date, and calibration gas cylinder pressure at the time of calibration.

6.2.4 Copies of all records required by Section 6.2 of this rule shall be retained for a minimum of five (5) years after the date of an entry, and the records shall be made available to the APCO, ARB, and US EPA upon request.

6.3 Test Methods

Equivalent test methods other than specified in Sections 6.3.1 through 6.3.8 may be used provided such test methods have received prior approval from the US EPA, ARB, and APCO.

6.3.1 Measurements of gaseous leak concentrations shall be conducted according to US EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in US EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument.

6.3.2 The VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 for liquids.

6.3.3 The percent by volume liquid evaporated at 150°C shall be determined using ASTM Method D 86-82.

6.3.4 The TVP of any organic liquid shall be determined by measuring the Reid Vapor Pressure (RVP) using ASTM D 323-94 (Test Method for Vapor Pressure for Petroleum Products), and converting the RVP to TVP at the maximum organic liquid storage temperature. The conversion of RVP to TVP shall be done in accordance with the procedures in Appendix A. Appendix A is an excerpt from the oil and gas section of "California Air Resources Boards (ARB) Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588", dated August 1989.

6.3.5 The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287-92 (2000) e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method) or ASTM 1298-85 (Standard Practice for Density, Relative Density, or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057-95 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products".

6.3.6 The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by US EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case US EPA Method 25a may be used. US EPA Method 18 may be used in lieu of US EPA Method 25 or US EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported.

6.3.7 Halogenated exempt compounds shall be analyzed by US EPA Method 18 or ARB Method 422 "Determination of Volatile Organic Compounds in Emission from Stationary Sources".

7.0 Compliance Schedule

7.1 On and after April 20, 2006, the operator shall be in full compliance with the requirements of this rule, unless otherwise specified in the certain provisions of this rule.

7.2 Operators may continue performing their quarterly inspection schedules that exist on or before April 20, 2005. Operators who are already on an annual inspection frequency on or before April 20, 2005 may apply for a written approval from the APCO to continue conducting annual inspections provided the operators meet all the criteria specified in Sections 5.2.9.

7.3 Any component that is exempt pursuant to Section 4.2 that becomes subject to all the requirements of this rule through the loss of exemption status shall be in compliance with this rule on and after the date the exemption status is lost.

Appendix A

California Air Resources Board Technical Guidance
to the Criteria and Guidelines Regulation for AB 2588
(Partial Excerpt from pages 102, 103 and 104)

True Vapor Pressure (TVP)

RVP is the absolute pressure of volatile crude oil and nonviscous petroleum liquids. Numerically, the relationship between TVP, RVP and temperature can be expressed by the following equation:

$$TVP = (RVP)\, e^{[Co(IRTEMP - ITEMP)]}$$

Where: C_o = Constant dependent upon the value of RVP
ITEMP = $(1/559.69^oR)$
IRTEMP = $(1/(T_s + 459.69^oR))$
T_s = Temperature of the stored fluid in ^oF

The value of the constant term C_o depends upon the given value of RVP.

Values of C_o for different RVP numbers are tabulated in Table C-3. It should be noted, however, that an error was discovered in the API nomograph calculated values of TVP so that the RVP was not equal to TVP at 100^oF as was expected given the general definition of RVP. Using linear regression techniques, correction factors (C_F) were developed and should be added to the calculated values of TVP in order to obtain reasonable TVP numbers. The relationship between the three values is given as follows:

$$\text{Corrected TVP} = \text{Calculated TVP} + C_F$$

The correction factor was found to be dependent upon RVP according to the following equations:

If RVP < 3,

$$C_F = (0.04) \times (RVP) + 0.1$$

If RVP > 3,

$$C_F = e^{[(2.3452061 \log (RVP)) - 4.132622]}$$

Appendix A (Continued)

Table C-3 VALUES OF C_o FOR DIFFERENT RVP NUMBERS

RVP	C_o
0<RVP<2	-6622.5
2<RVP<3	-6439.2
RVP = 3	-6255.9
3<RVP<4	-6212.1
RVP = 4	-6169.2
4<RVP<5	-6177.9
RVP = 5	-6186.5
5<RVP<6	-6220.4
RVP = 6	-6254.3
6<RVP<7	-6182.1
RVP = 7	-6109.8
7<RVP<8	-6238.9
RVP = 8	-6367.9
8<RVP<9	-6477.5
RVP = 9	-6587.9
9<RVP<10	-6910.5
RVP = 10	-7234.0
10<RVP<15	-8178.0
RVP > 15	-9123.2

RULE 4453 REFINERY VACUUM PRODUCING DEVICES OR SYSTEMS (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from refinery vacuum producing devices or systems.

2.0 Applicability

This rule shall apply to any vacuum producing device or system, including hot wells and accumulators installed in a refinery operation.

3.0 Requirements

On and after July 1, 1980:

3.1 Hot wells and accumulators shall be covered.

3.2 The vapors from the vacuum producing device or system including hot wells and accumulators shall either be:

3.2.1 Collected, compressed, and added to refinery gas;

3.2.2 Controlled and combusted in an appropriate firebox or incinerator with at least 90 percent VOC control efficiency; or

3.2.3 Controlled by a method that is equivalent to Section 3.2.1 or 3.2.2 and approved by the APCO.

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RULE 4454 REFINERY PROCESS UNIT TURNAROUND (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to limit VOC emissions resulting from the purging, repair, cleaning, or otherwise opening or releasing pressure from a refinery vessel during a process unit turnaround.

2.0 Applicability

The provisions of this rule shall apply to any refinery vessel containing VOCs unless exempted under Section 3.0.

3.0 Exemptions

This rule shall not apply to:

3.1 Any process vessel that has been depressurized to less than 1020 mm Hg (5 psig).

4.0 Requirements

A person shall depressurize any vessel containing VOCs unless the process unit turnaround is accomplished by employing one of the following operating procedures:

4.1 The organic vapors shall either be:

4.1.1 Recovered, added to the refinery fuel gas system and combusted; or

4.1.2 Controlled and piped to an appropriate firebox or incinerated for combustion; or

4.1.3 Flared, until the pressure within the process vessel is as close to atmospheric pressure as is possible.

4.2 All process vessels shall be depressurized into the control facilities to less than 1020 mm Hg (5 psig) before venting/opening to atmosphere.

4.3 All organic compounds which emerge from a refinery process vessel during the purging of said vessel and which otherwise would be emitted to the atmosphere shall be either directed to a flare or incinerator or shall be used for fuel until such disposition of emissions is not technically feasible or is less safe than atmospheric venting. Compliance with this section shall not be

construed to require the installation, construction or structural modification of any equipment which is not required for compliance with the above paragraph requiring controls during depressurization.

RULE 4455 COMPONENTS AT PETROLEUM REFINERIES, GAS LIQUIDS PROCESSING FACILITIES, AND CHEMICAL PLANTS (Adopted April 20, 2005)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from leaking components at petroleum refineries, gas liquids processing facilities, and chemical plants.

2.0 Applicability

This rule shall apply to components containing or contacting VOC at petroleum refineries, gas liquids processing facilities, and chemical plants.

3.0. Definitions

3.1 APCO: The Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District, or any person authorized to act on behalf of the APCO.

3.2 ARB: California Air Resources Board as established by the California Health and Safety Code Section 39510, or any person authorized to act on its behalf

3.3 Background: a reading on a portable hydrocarbon detection instrument which is determined at a distance no greater than two (2) meter upwind from any component to be inspected and which is uninfluenced by any specific emission point.

3.4 Chemical Plant: an establishment that produces organic chemicals and/or manufactures products by organic chemical processes.

3.5 Closed-vent System: an APCO-approved system that is not open to the atmosphere and that is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to an APCO-approved control device that has a overall VOC collection and destruction or removal efficiency of at least 95%, or that transports gases or vapors back to a process system.

3.6 Commercial Quality Natural Gas: a mixture of gaseous hydrocarbons with at least 80 percent methane by volume (≥ 80 vol%) and less than ten percent by weight (<10 wt%) VOC as determined by the test method specified in Section 6.4.2, and meets the criteria specified in Public Utilities Commission (PUC) General Order 58-A.

3.7 Component: includes, but is not limited to, any valve, fitting, threaded connection, pump, compressor, pressure relief device, pipe, flange, process drain, sealing mechanism, hatch, sight-glass, meter or seal fluid system in VOC service.

3.7.1 Major Component: any pump 5 brake horsepower or larger, any compressor, and any pressure relief valve 4 inches in diameter or larger.

3.7.2 Minor Component: any component that is not a major component.

3.8 Component Type: includes, but is not limited to, any one (1) of the following groups: valves, fittings, threaded connections, pumps, compressors, pressure relief devices, pipes, flanges, process drains, sealing mechanisms, hatches, sight-glasses, and meters in VOC service.

3.9 Compressor: a device used to compress gases or vapors or a combination of gases and vapors by the addition of energy, and includes all associated components used for connecting and sealing purposes. The phrase "all associated components used for connecting and sealing purposes" means the first VOC leak points (first components) on the body of the compressor. For example, a valve that is connected to a threaded hole on body of the compressor, the first VOC leak point is the threaded connection on the body of the compressor, but the valve itself is not a "first VOC leak point". Similarly, a compressor shaft seal is considered as a first “VOC leak point”.

3.10 Compressor Part: for the purpose of Section 5.3.7, a compressor part refers to the “first VOC leak point” as explained in Section 3.9.

3.11 Critical Component: any component that would require the shutdown of a critical process unit if that component was shut down or disabled.

3.12 Critical Process Unit: a process unit that must remain in service because of its importance to the overall process that requires it to continue to operate, and has no equivalent equipment to replace it or cannot be bypassed, and it is technically infeasible to repair leaks from that process unit without shutting it down and opening the process unit to the atmosphere.

3.13 Critical Process Unit Shutdown: the shutdown of a critical process unit or part of the critical process unit that causes the entire unit to cease operating.

3.14 District: San Joaquin Valley Unified Air Pollution Control District.

3.15 Essential Component: a component that cannot be taken out of service without reducing, by more than 33 percent, the throughput of the process unit that it serves.

3.16 Flange: a projecting rim on a pipe used to attach it to another pipe or any other component in a piping system.

3.17 Fitting: a component, excluding flanges and threaded connectors, used to attach or connect pipes or piping system. Examples of a "fitting" include, but are not limited to quick-disconnect fitting, push-in-fittings, and cam-locks.

3.18 Gas Liquids Processing Facility: a facility that is engaged in the catalytic processing of gas liquids to produce finished products.

3.19 Gas/Vapor Service: a component is considered to be in gas/vapor service when the fluid in contact with the component contains VOCs and the fluid is primarily in gaseous state at operating conditions.

3.20 Inaccessible Component: a component located over 15 feet above ground when access is required from the ground; or a component located over six (6) feet away from a platform when access is required from the platform; or a component that would require the elevation of monitoring personnel higher than six (6) feet above permanent support surfaces.

3.21 Inspection: means checking and/or testing of components in order to detect leaks.

3.21.1 Operator Inspection: inspection of components conducted by the operator pursuant to the inspection and re-inspection schedules specified in this rule for the purpose of demonstrating compliance with this rule.

3.21.2 District Inspection: inspection of components by District personnel or their representative to insure facilities and/or operators are in compliance with District requirements.

3.22 Leak: the dripping of VOC-containing liquid or the detection of a concentration of total organic compound, above background, determined according to the test method specified in Section 6.4.1 that exceeds the limits in Table 1, Sections 3.22.1 and Section 3.22.2 of this rule. Any liquid or gas coming from a component undergoing repair or replacement, or during sampling of process fluid from a component into a container is not considered a leak provided such activities are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

Table 1 – Gas Leak Standard in ppmv as Methane

Type of Component	Major Gas Leak	Minor Gas Leak	
		Components in Liquid Service	Components in Gas/Vapor Service
1. Valves	Greater than 10,000	200 to 10,000	400 to 10,000
2. Threaded connections	Greater than 10,000	200 to 10,000	400 to 10,000
3. Flanges	Greater than 10,000	200 to 10,000	400 to 10,000
3. Pumps	Greater than 10,000	500 to 10,000	1,000 to 10,000
4. Compressors	Greater than 10,000	500 to 10,000	1,000 to 10,000
5. PRD	Greater than 10,000	100 to 10,000	200 to 10,000
6. Other component types not listed in 1 through 6 above	Greater than 10,000	500 to 10,000	1,000 to 10,000

3.22.1 Major Liquid Leak: a visible mist or a continuous flow of liquid that is not seal lubricant.

3.22.2 Minor Liquid Leak: a liquid leak, except seal lubricant, that is not a major liquid leak and drips liquid at a rate of more than three drops per minute.

3.23 Leak Minimization: reducing a leak to the lowest achievable level without damaging the component using best modern practices which include, but are not limited to, adding sealing material to the component, tightening the component, or adjusting the component without shutdown of the process that the component serves and that can be safely accommodated.

3.24 Liquid Service: a component is considered to be in liquid service when the fluid in contact with the component contains VOCs and the fluid is primarily liquid at operating conditions.

3.25 Open-ended Line or Valve: any line or valve, except PRV, having one side of the line or valve seat in contact with the process fluid and one side open to the atmosphere, either directly or through an open piping.

3.26 Portable Hydrocarbon Detection Instrument: a hand-held hydrocarbon analyzer that meets the criteria specified in US EPA Method 21, 40 CFR Part 60. The instrument shall be calibrated with methane.

3.27 Pressure Relief Device (PRD): a pressure relief valve or a rupture disc.

3.28 Pressure Relief Valve (PRV): an automatic pressure-relieving device associated with a process vessel or piping system that is activated by pressure upstream of the device and relieves to the atmosphere (atmospheric PRV).

3.29 Process Drain: any open portion of a non-continuous piping system, including open origination portion(s) of such a system used for collection and transport of

liquids discharged from process vessels, spills, or other sources. Drain origination points and drain termination points are not open-ended lines. Process drains are not open-ended lines.

3.30 Process Equipment: equipment that is used to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates.

3.31 Process PRD: a PRD that is vented to the atmosphere and is located on a process equipment other than storage tanks, liquefied petroleum gas storage vessels, or pipelines used to transport materials.

3.32 Process System: an APCO-approved system that is not open to the atmosphere and is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gases or vapors from a piece of equipment to a process stream, fuel gas system, or sales gas system.

3.33 Pump: a device used to transport fluids by the addition of energy, and includes all associated components used for connecting or sealing purposes. The phrase "all associated components used for connecting and sealing purposes" means the first VOC leak points (first components) on the body of the pump. For example, a valve that is connected to a threaded hole on body of the pump, the first VOC leak point is the threaded connection on the body of the pump, but the valve itself is not a "first VOC leak point". Similarly, a pump shaft seal is considered as a first “VOC leak point”.

3.34 Pump Part: for the purpose of Section 5.3.7, a pump part refers to the “first VOC leak point” as explained in Section 3.33.

3.35 Refinery: an establishment that processes petroleum as defined in the Standard Industrial Classification Code under 2911 (Petroleum Refining).

3.36 Release: a VOC emission to the atmosphere from process PRD caused by an increase in upstream pressure. A leak caused by improper reseating of the PRD is not a release.

3.37 Rupture Disk: a rigid diaphragm held between flanges for the purpose of isolating organic compounds from the atmosphere or from a downstream pressure relief valve. Most rupture disks are designed to fail at a certain pressure point.

3.38 Tag: a piece of paper, metal, plastic or other suitable material that is attached to a component for the purpose identification or other information.

3.39 Turnaround: scheduled shutdown of a process unit for maintenance and repair work.

3.40 Sight glass: a device located on a fluid line or a process vessel that allows an operator to view the product or material inside a fluid line or a process vessel.

3.41 Unsafe-to-Monitor Component: a component that is installed at a location that would prevent the safe inspection or repair of a component as defined by OSHA standards or in provisions for worker safety stated in 29 CFR 1910.

3.42 US EPA: United States Environmental Protection Agency

3.43 Vacuum Service: operating under a negative gauge pressure or below atmospheric pressure.

3.44 Valve: a device that regulates the flow of fluid in a piping system by means of an external actuator acting to permit or block passage of fluid.

3.45 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

4.0 Exemptions

4.1 The requirements of this rule shall not apply to components subject to Rule 4623 (Storage of Organic Liquids); or to components included in the inspection and maintenance (I&M) program implemented pursuant to Section 5.7 of Rule 4623.

4.2 Except for complying with the applicable requirements of Sections 6.1 and 7.3, the requirements of this rule shall not apply to components described in Sections 4.2.1 through 4.2.8. An operator claiming an exemption pursuant to Section 4.2 shall provide proof of the applicable criteria to the satisfaction of the APCO.

4.2.1 Pressure relief devices, pumps, and compressors equipped with a closed-vent system as defined in Section 3.0.

4.2.2 Components buried below ground.

4.2.3 Components exclusively handling liquid streams which have less than 10 percent by weight (<10 wt%) evaporation at 150^0 C as determined by the test method specified in Section 6.4.3.

4.2.4 Components exclusively handling liquid streams with a VOC content less than ten percent by weight (<10 wt%), as determined by the test methods in Section 6.4.2.

4.2.5 Components exclusively handling gas/vapor streams with a VOC content of less than one percent by weight (<1wt%), as determined by the test method specified in Section 6.4.2.

4.2.6 Components incorporated in lines exclusively in vacuum service.

4.2.7 Components exclusively handling commercial natural gas.

4.2.8 One-half inch nominal or less stainless steel tube fittings which have been demonstrated to the APCO to be leak-free based on initial inspection using the test method specified in Section 6.4.1.

5.0 Requirements

5.1 Operating Requirements

5.1.1 The operator shall not use any component that leaks in excess of the applicable leak standards of this rule, or that is found to be in violation of the provisions specified in Section 5.1.3. Components that have been found leaking in excess of the applicable leak standards of this rule may be used provided such leaking components have been identified with a tag for repair, are repaired, or are awaiting re-inspection after being repaired, within the applicable time period specified in this rule.

5.1.2 Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

5.1.3 Determination of Compliance with the Leak Standards

5.1.3.1 District Inspection

The operator shall be in violation of this rule if any District inspection demonstrates that one or more of the conditions in Sections 5.1.4 exist at the facility.

5.1.3.2 Operator Inspection

5.1.3.2.1 Except for annual operator inspection described in Section 5.1.3.2.3, any operator inspection that demonstrates one or more of the conditions in Section 5.1.4 exist at the facility shall not constitute a violation of this rule if the leaking components are repaired as soon as practicable but not later than the time frame specified in this rule. Such components shall not be counted towards determination of compliance with the provisions of Section 5.1.4.

5.1.3.2.2 Leaking components detected during operator inspection pursuant Section 5.1.3.2.1 that are not repaired, replaced, or removed from operation as soon as practicable but not later than the time frame specified in this rule shall be counted toward determination of compliance with the provisions of Section 5.1.4.

5.1.3.2.3 Any operator inspection conducted annually for a component type (including operator annual inspections pursuant to Section 5.2.5, 5.2.6, 5.2.7, or 5.2.8) that demonstrates one or more of the conditions in Section 5.1.4 exist at the facility shall constitute a violation of this rule regardless of whether or not the leaking components are repaired, replaced, or removed from operation within the allowable repair time frame specified in this rule.

5.1.4 Leak Standards

For the purpose of this rule, a component shall be considered leaking if one or more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 exist at the facility.

5.1.4.1 An open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations requiring process fluid flow through the open-ended lines. Attended operations include draining or degassing operations, connection of temporary process equipment, sampling of process streams, emergency venting, and other normal operational needs, provided such operations are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

5.1.4.2 A component with a major liquid leak.

5.1.4.3 A component with a gas leak greater than 50,000 ppmv.

5.1.4.4 A component leak described in Sections 5.1.4.4.1 through 5.1.4.4.3 and numbering in excess of the maximum allowable number or percent specified in Table 2.

5.1.4.4.1 A minor liquid leak; or

5.1.4.4.2 A minor gas leak; or

5.1.4.4.3 A gas leak greater than 10,000 ppmv up to 50,000 ppmv.

Table 2 – Maximum Allowable Number or Percent of Leaking Components Per Inspection Period

Component Type	Maximum Number of Leaks for 200 or less Components Inspected	Maximum Percent or Number of Leaks for more than 200 Components Inspected*
1. Valves	1	0.5% of number inspected
2. Threaded Connections	1	0.5% of number inspected
3. Flanges	1	0.5% of number inspected
4. Pumps	2	1.0% of number inspected
5. Compressors	1	1 leak
6. PRD	1	1 leak
7. Other component types not listed in items 1 through 6 above	1	1 leak
8 Pipes	Maximum Number of Leaks	
	2	

*The maximum number of leaks in Table 2 shall be rounded upwards to the nearest integer, where required. The maximum allowable percent of leaks is calculated from the total number of components of a given type inspected during the specified inspection period.

5.2 Inspection and Re-Inspection Requirements

5.2.1 The operator shall audio-visually (by hearing and sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once every 24 hours, except when operators do not report to the facility for that given 24 hours.

5.2.2 Any audio-visual inspection of all accessible operating pumps, compressors, and PRDs in service performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected using the test method specified in Section 6.4.1 not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of this rule.

5.2.3 Notwithstanding the requirement of Sections 5.2.1 and 5.2.2, the operator shall inspect all components at least once every calendar quarter using the test method specified in Section 6.4.1, except for inaccessible components, unsafe-to-monitor components, or pipes. Inaccessible components and unsafe-to-monitor components shall be inspected in accordance with the

provisions of Sections 5.2.5 and 5.2.6, respectively. Pipes shall be inspected in accordance with the provisions of Section 5.2.7.

5.2.4 The operator shall inspect, immediately after placing into service, all new, replaced, or repaired fittings, flanges, and threaded connections using the test method specified in Section 6.4.1.

5.2.5 The operator shall inspect all inaccessible components at least once every 12 months using the test method specified in Section 6.4.1.

5.2.6 The operator shall inspect all unsafe-to-monitor components during each turnaround using the test method specified in Section 6.4.1.

5.2.7 The operator shall visually inspect all pipes for leaks at least once every 12 months.

5.2.7.1 Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected using the test method specified in Section 6.4.1 not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the timeframe specified in Table 3 of this rule.

5.2.7.2 The operator may conduct the annual pipe inspection required by Section 5.2.7 in conjunction with the annual pipe inspection required by the Spill Prevention Control and Countermeasure Plan pursuant to 40 Code of Federal Regulation Part 112 (Oil Prevention and Response: Non-Transportation-Related Onshore and Offshore Facilities). Records of annual pipe inspection required by SPCC may be used to document the inspection required by Section 5.2.7. The operator shall maintain the records of such inspections at the facilities. The records shall be made available to the APCO, ARB, and US EPA upon request.

5.2.8 Notwithstanding the requirement of Section 5.2.3, the operator may apply for a written approval from the APCO to change the inspection frequency from quarterly to annually for a component type, or an operator who is already on an annual inspection frequency on or before (rule adoption date) may apply for a written approval from the APCO to continue conducting annual inspections for a component type, provided the operator meets all the criteria specified in Sections 5.2.8.1 through 5.2.8.3. This approval shall apply to accessible component types, specifically designated by the APCO, except pumps, compressors, and PRDs which shall continue to be inspected on a quarterly basis.

5.2.8.1 The operator was not in violation of any provision of Sections 5.1 during five consecutive quarterly inspections for that component type.

5.2.8.2 The operator did not receive a Notice of Violation from the APCO during the previous 12 months for violating any provisions of this rule for that component type.

5.2.8.3 The written request shall include pertinent documentation to demonstrate that the operator has successfully met the requirements of Sections 5.2.8.1 and 5.2.8.2.

5.2.9 The annual inspection frequency approved by the APCO pursuant to Section 5.2.8 shall revert to quarterly inspection frequency for a component type if either one of the following occurs:

5.2.9.1 Operator inspection or District inspection demonstrates that a violation of the provisions of Sections 5.1, 5.2, and 5.3 exists for that component type, or

5.2.9.2 The APCO issued a Notice of Violation for violating any of the provisions of this rule during the annual inspection period for that component type.

5.2.10 When the inspection frequency changes from annual to quarterly inspections pursuant to Section 5.2.9 above, the operator shall notify the APCO in writing within five (5) calendar days after changing the inspection frequency. The written notification shall include the reason(s) and date of change to quarterly inspection frequency.

5.2.11 The operator shall initially inspect a process PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the time of the release. The operator shall re-inspect the process PRD using the test method specified in Section 6.4.1 not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the date of the release to insure that the process PRD is operating properly, and is leak-free. If the process PRD is found to be leaking at either inspection, the PRD leak shall be treated as if the leak was found during quarterly operator inspections.

5.2.12 Except for process PRD subject to the requirements of Section 5.2.11, a component shall be inspected within 15 calendar days after repairing the leak or replacing the component using the test method specified in Section 6.4.1.

5.2.13 A District inspection in no way fulfills any of the mandatory inspection requirements that are placed upon operators and cannot be used or counted as

an inspection required of an operator. Any attempt by an operator to count such District inspections as part of the mandatory operator's inspections is considered a willful circumvention of the rule and is a violation of this rule.

5.3 Maintenance Requirements

5.3.1 Upon detection of a leaking component, the operator shall affix to that component a weatherproof readily visible tag.

5.3.2 The tag shall remain affixed to the component until all the conditions specified in Sections 5.3.2.1 through 5.3.2.3 have been met.

5.3.2.1 The leaking component has been repaired or replaced; and

5.3.2.2 The component has been re-inspected using the test method in Section 6.4.1; and

5.3.2.3 The component is found to be in compliance with the requirements of this rule.

5.3.3 The tag shall include the following information:

5.3.3.1 Date and time of leak detection.

5.3.3.2 Date and time of leak measurement.

5.3.3.3 For gas leaks, indicate the leak concentration in ppmv.

5.3.3.4 For liquid leaks, indicate whether it is a major liquid leak or a minor liquid leak.

5.3.3.5 For essential components, unsafe–to-monitor components, or critical components, so indicate on the tag.

5.3.4 An operator shall minimize all component leaks immediately to the extent possible, but not later than one (1) hour after detection of leaks in order to stop or reduce leakage to the atmosphere.

5.3.5 If the leak has been minimized but the leak still exceeds the applicable leak standards of this rule, an operator shall comply with at least one of the requirement of Sections 5.3.5.3, 5.3.5.4, or 5.3.5.5 as soon as practicable but not later than the time period specified in Table 3. For each calendar quarter, the operator may be allowed to extend the repair period as specified in Table 3, for a total number of leaking components, not to exceed 0.05 percent of the number of components inspected, by type, rounded upward to the nearest integer where required.

5.3.5.1 The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the repair period specified in Table 3.

5.3.5.2 The start of the repair period shall be the time of the initial leak detection.

5.3.5.3 Repair or replace the leaking component; or

5.3.5.4 Vent the leaking component to a closed vent system as defined in Section 3.0.

5.3.5.5 Remove the leaking component from operation.

Table 3. Repair Period

Type of Leak	Repair Period in Calendar Days	Extended Repair Period in Calendar Days
Gas Leaks		
Minor Gas Leak (See Table 1)	7	7
Major Gas Leak greater than 10,000 ppmv but equal to or less than 50,000 ppmv	3	2
Major Gas Leak greater than 50,000 ppmv	2	0
Liquid Leaks		
Minor Liquid Leak (See Section 3.22.2)	3	0
Major Liquid Leak (See Section 3.22.1)	2	0

5.3.6 If the leaking component is an essential component or a critical component and which cannot be immediately shut down for repairs, the operator shall:

5.3.6.1 Minimize the leak within one hour after detection of leaks; and

5.3.6.2 If the leak has been minimized, but the leak still exceeds any of the applicable leak standards of this rule, the essential component or critical component shall be repaired or replaced to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier.

5.3.7 For any component that has incurred five repair actions for major gas leaks or major liquid leaks, or any combination of major gas leaks and major liquid leaks within a continuous 12-month period, the operator shall

comply with at least one of the requirements specified in Sections 5.3.7.1, 5.3.7.2, 5.3.7.3, or 5.3.7.4 by the applicable deadlines specified in Sections 5.3.7.5 and 5.3.7.6. If the original leaking component is replaced with a new like-in-kind component before incurring five repair actions for major leaks within 12-consecutive months, the repair count shall start over for the new component. An entire compressor or pump need not be replaced provided the compressor part(s) or pump part(s) that have incurred five repair actions as described in Section 5.3.7 are brought into compliance with at least one of the requirements of Sections 5.3.7.1 through 5.3.7.6.

5.3.7.1 Replace or retrofit the component with the control technology specified in Table 4. Notify the APCO in writing prior to replacing or retrofitting the component; or

Table 4 - Component Control Technology Replacement/Retrofit

Component Type	Control Technology
Compressors	Replace existing seal with dual mechanical seal, oil-film seal, gas seal, or face-type seal.
Pumps	Replace with seal-less pump or replace with dual mechanical seal.
PRD	Replace PRD and install a rupture disc in the line which precedes the PRD such that the PRD is in series with and follow the rupture disc.
Valves	Replace with sealed bellows valve, or graphite or teflon chevron seal rings in a live-loaded packing gland.
Threaded Connections	Weld connections or replace threaded connections with flanges.
Sampling Connections	Replace with closed-loop sampling system

5.3.7.2 Replace the component with Achieved-in-Practice Best Available Control Technology (BACT) equipment, as determined in accordance with Rule 2201 (New and Modified Stationary Source Review Rule), and as approved by the APCO in writing; or

5.3.7.3 Vent the component to an APCO approved closed vent system as defined in Section 3.0; or

5.3.7.4 Remove the component from operation.

5.3.7.5 For any component that is accessible, is not unsafe-to-monitor, is not an essential component, is not a critical component, the operator shall comply with the requirement of Section 5.3.7.1, Section 5.3.7.2, Section 5.3.7.3, or Section 5.3.7.4 as soon as practicable but not later than twelve (12) months after the date of

detection of the fifth major leak within a continuous 12-month period as indicated in Section 5.3.7.

5.3.7. For any inaccessible component, unsafe-to-monitor component, essential component, or critical component, the operator shall comply with the requirement of Section 5.3.7.1, Section 5.3.7.2, Section 5.3.7.3, or Section 5.3.7.4 as soon as practicable but not later than the next turnaround or not later than two (2) years after the date of detection of the fifth major leak within a continuous 12-month period as indicated in Section 5.3.7, whichever comes earlier.

5.4 Process PRD Requirements

5.4.1 The operator shall monitor process PRD by using electronic process control instrumentation that allows for real time continuous parameter monitoring or by using telltale indicators for the process PRD where parameter monitoring is not feasible.

5.4.2 By October 20, 2005, the operator shall submit to the APCO a compliance plan, as part of the Operator Management Plan required by Section 6.1, containing the inventory of process PRD by size, set pressure and location, and the type of monitoring system to be used in order to comply with the requirement of Section 5.4.1. If applicable, the operator shall indicate the process parameter selected for continuous monitoring and the justification for such selection.

5.4.3 The operator shall comply with the process PRD release notification and recordkeeping requirements specified in Section 6.3.

5.4.4 After a~~ny~~ release from process PRD in excess of 500 pounds of VOC in a continuous 24-hour period, the operator shall immediately conduct a failure analysis and implement corrective actions as soon as practicable but not later than 30 days to prevent the reoccurrence of similar release. For refineries processing greater than 20,000 barrels of crude oil per day, any subsequent release in excess of 500 pounds of VOC within a continuous 24-hour period shall be subject to the requirements of Section 5.4.5.

5.4.5 The operator of a refinery processing greater than 20,000 barrels of crude oil per day shall connect all process PRD serving that process equipment to an APCO-approved closed vent system as defined in Section 3.0 if any of the condition~~s~~ specified in Sections 5.4.5.1 and 5.4.5.2 occurs. Process PRD subject to the provisions of Section 5.4.5 shall be connected to an APCO-approved closed vent system as soon as practicable, but no later

than the first turnaround after the requirement to connect becomes effective.

5.4.5.1 A second release from any process PRD serving the same piece or pieces of equipment and each release is in excess of 500 pounds of VOC in a continuous 24-hour period and provided the second release occurs within any five year period of the first release.

5.4.5.2 Any release in excess of 2,000 pounds of VOC in a continuous 24-hour period, from any process PRD serving the same piece or pieces of process equipment.

5.5 Component Identification Requirements

5.5.1 All major components and critical components shall be physically identified clearly and visibly for inspection, repair, and recordkeeping purposes. The physical identification shall consist of labels, tags, manufacturer's nameplate identifier, serial number, or model number, or other system approved by the APCO that enables an operator or District personnel to locate each individual component. The operator shall replace tags or labels that become missing or unreadable as soon as practicable but not later than 24 hours after discovery.

5.5.2 The operator shall comply with the requirements of Sections 6.1.4 if there is any change in the description of major components or critical components.

6.0 Administrative and Recordkeeping Requirements

6.1 Operator Management Plan

6.1.1 By October 20, 2005, an operator whose existing components are either subject to the rule or whose existing components are exempt pursuant to Section 4.2 on or before April 20, 2005 shall submit an Operator Management Plan for approval by the APCO.

6.1.2 The operator shall keep a copy of the APCO-approved Operator Management Plan at the facility and make it available to the APCO, ARB and US EPA upon request.

6.1.3 The operator shall describe in the Operator Management Plan all components subject to this rule and all components that are exempt pursuant to Section 4.0 of this rule or part of this rule. The Plan shall contain a description of the procedures that the operator will use to comply with the requirements of this rule. The Plan shall include, at a minimum all of the following information:

6.1.3.1 Identification and description of any known hazard that might affect the safety of an inspector.

6.1.3.2 Diagrams, charts, spreadsheets, or other methods approved by the APCO which describe the following information:

6.1.3.2.1 Except for pipes, the number of components that are subject to this rule by component type and type of service (i.e., liquid service or gas/vapor service).

6.1.3.2.2 Except for pipes, the number and types of major components, inaccessible components, unsafe-to-monitor components, critical components, and essential components, that are subject to this rule, including the reason(s) for such designation.

6.1.3.2.3 Except for pipes, the location of components that are subject to this rule (components may be grouped together functionally by process unit or facility description).

6.1.3.2.4 Except for pipes components exempt pursuant to Section 4.2 (except for components buried below ground) may be described in the Operator Management Plan by grouping them functionally by process unit or facility description. The results of any laboratory testing or other pertinent information to demonstrate compliance with the exemption criteria for components for which an exemption is being claimed pursuant to Sections 4.2 shall be submitted with the Operator Management Plan.

6.1.3.4 Detailed schedule of inspection to be conducted as required by this rule.

6.1.3.5 Include the compliance plan for process PRD as required by Section 5.4.2 of this rule.

6.1.3.6 Specify whether a qualified contractor or in-house team will perform the inspections.

6.1.3.7 Establish an employee training program for inspecting, repairing, and recordkeeping procedures, as necessary.

6.1.3.7.1 Specify the training standards for personnel performing inspections and repairs.

6.1.3.7.2 Document the leak detection training using the test method in Section 6.4.1 for new operators, and for experienced operators, as necessary.

6.1.3.7.3 The operator shall maintain copies of the training records at the facility. Copies of the training records shall be made available to the APCO, ARB, and US EPA upon request.

6.1.4 By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to an existing Operator Management Plan.

6.1.5 The APCO shall provide written notice to the operator of the approval or incompleteness of a new or revised Operator Management Plan within 60 days of receiving such Plan. If the APCO fails to respond in writing within 60 days after the date of receiving the Plan, it shall be deemed approved. No provision of the Plan, approved or not, shall conflict with or take precedence over any provision of this rule.

6.2 Inspection Log

6.2.1 An operator at each facility shall maintain an inspection log containing, at a minimum, the following information:

6.2.1.1 Total number of components inspected, and total number and percentage of leaking components found by component types.

6.2.1.2 Location, type, name or description of each leaking component, and description of any unit where the leaking component is found.

6.2.1.3 Date of leak detection and method of leak detection.

6.2.1.4 For gaseous leaks, record the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak.

6.2.1.5 Date of repair, replacement, or removal from operation of leaking components.

6.2.1.6 Identification and location of essential component and critical components found leaking that cannot be repaired until the next

process unit turnaround or not later one year after leak detection, whichever comes earlier.

6.2.1.7 Methods used to minimize the leak from essential components and critical components that cannot be repaired until the next process unit turnaround or not later one year after leak detection, whichever comes earlier.

6.2.1.8 After the component is repaired or is replaced, the date of re-inspection and the leak concentration in ppmv.

6.2.1.9 Inspector's name, business mailing address, and business telephone number.

6.2.1.10 The facility operator responsible for the inspection and repair program shall sign and date the inspection log certifying the accuracy of the information recorded in the log.

6.2.2 Records of leaks detected by quarterly or annual operator inspection, and each subsequent repair and re-inspection, shall be submitted to the APCO, ARB, or US EPA upon request.

6.2.3 Records of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components, including a copy of current calibration gas certification from the vendor of said calibration gas cylinder, the date of calibration, concentration of calibration gas, analyzer reading of calibration gas before adjustment, instrument reading of calibration gas after adjustment, calibration gas expiration date, and calibration gas cylinder pressure at the time of calibration.

6.2.4 Copies of all records required by Section 6.2 of this rule shall be retained for a minimum of five (5) years after the date of an entry. Such records shall be made available to the APCO, ARB, or US EPA upon request.

6.3 Process PRD Release Notification

6.3.1 The operator shall notify the APCO, by telephone or other methods approved by the APCO, of any process PRD release described in Sections 5.4.4 and 5.4.5, and any 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.

6.3.2 The operator shall submit a written report to the APCO within thirty (30) calendar days of following notification of process PRD release subject to 6.3.1. The written report shall include all of the following information:

6.3.2.1 Process PRD type, size, and location.

6.3.2.2 Date, time and duration of the process PRD release.

6.3.2.3 Types of VOC released and individual amounts, in pounds, including supporting calculations.

6.3.2.4 Cause of the process PRD release.

6.3.2.5 Corrective actions taken to prevent a subsequent process PRD release.

6.3.3 The operator shall keep records of the process (s) parameters monitored pursuant to Section 5.4.1 for a period of five (5) years, and make the records available to the APCO, ARB, and US EPA upon request.

6.4 Test Methods

Equivalent test methods other than specified in Sections 6.4.1 through 6.4.5 may be used provided such test methods have received prior approval from the US EPA, ARB, and APCO.

6.4.1 Measurements of gaseous leak concentrations shall be conducted according to US EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in US EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument.

6.4.2 The VOC content shall be determined using American Society of Testing and Materials (ASTM) D 1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 for liquids.

6.4.3 The percent by volume liquid evaporated at 150^0C shall be determined using ASTM D 86-82.

6.4.4 The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by US EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case Method 25a may be used. US EPA Method 18 may be used in lieu of US EPA Method 25 or US EPA Method 25a provided the identity and approximate concentrations of the

analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported.

6.4.5 Halogenated exempt compounds shall be analyzed by US EPA Method 18 or ARB Method 422 "Determination of Volatile Organic Compounds in Emission from Stationary Sources".

7.0 Compliance Schedule

7.1 On and after April 20, 2006, the operator shall be in full compliance with the requirements of this rule, unless otherwise specified in certain provisions of this rule.

7.2 Operators may continue performing their quarterly inspection schedules that exist on or before April 20, 2005. Operators who are already on an annual inspection frequency on or before April 20, 2005 may apply for a written approval from the APCO to continue conducting annual inspections provided the operators meet all the criteria specified in Sections 5.2.8.

7.3 Any component that is exempt pursuant to Section 4.2 that becomes subject to all the requirements of this rule through the loss of exemption status shall be in compliance with this rule on and after the date the exemption status is lost.

RULE 4550 CONSERVATION MANAGEMENT PRACTICES (Adopted May 20, 2004; Re-adopted August 19, 2004)

1.0 Purpose

The purpose of this rule is to limit fugitive dust emissions from agricultural operation sites.

2.0 Applicability

This rule applies to agricultural operation sites located within the San Joaquin Valley Air Basin.

3.0 Definitions

3.1 Administrative change: a change to a CMP Plan that

3.1.1 Corrects typographical errors: or

3.1.2 Identifies a change in the name, address, or phone number of any person identified in the CMP Plan, or provides a similar minor administrative change which has no effect on the selected CMPs and does not change any information that could be used to determine emissions reduction; or

3.1.3 Allows for the change of ownership or operational control of an agricultural operation site or agricultural parcel.

3.2 Agricultural Operations: the growing and harvesting of crops or the raising of fowl or animals, for the primary purpose of earning a living, or of conducting agricultural research or instruction by an educational institution.

3.3 Agricultural Operation Site: one or more agricultural parcels that meet the following:

3.3.1 Are under the same or common ownership or operation, or which are owned or operated by entities which are under common control; and

3.3.2 Are located on one or more contiguous or adjacent properties wholly within the San Joaquin Valley Air Basin.

3.4 Agricultural Parcel: a portion of real property, including, but not limited to, cropland, and animal feeding operation (AFO) used by an owner/operator for carrying out a specific agricultural operation. Roads, vehicle/equipment traffic

areas, and facilities, on or adjacent to the cropland or AFO are part of the agricultural parcel.

3.5 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.6 Animal Feeding Operation (AFO): a lot or facility where animals have been, are, or will be gathered, fed, stabled, for a total of 45 days or more in any 12 month period and where crops, vegetation, forage growth, or post-harvest residues are not sustained over any portion of the lot or facility (as defined in 40 CFR 122.23 (b)(1)).

3.7 Board: as defined in Rule 1020 (Definitions).

3.8 Conservation Management Practice (CMP): an activity or procedure that reduces air pollutants normally emitted by, or associated with, an agricultural activity.

3.9 Conservation Management Practice Application (CMP Application): a document prepared and submitted by the owner/operator of an agricultural operation site that lists the selected CMPs for implementation. The CMP application also contains, but is not limited to, contact information for the owner/operator, and a site plan or map describing the agricultural operation site and locations of agricultural parcels where CMPs will be implemented and other information describing the extent, duration of CMP implementation and other information needed by the District to calculate emission reductions.

3.10 Conservation Management Practice Category (CMP Category): a grouping, including, but not limited to, agricultural activities related to land preparation, harvesting, handling and raising of fowl or animals, and the use of agricultural unpaved roads, and unpaved vehicle/equipment traffic areas. The CMP category "other" includes CMPs to reduce windblown emissions and agricultural burning emissions.

3.11 Conservation Management Practice Handbook (CMP Handbook): a handbook, developed in cooperation with agricultural stakeholders, that contains program guidance and criteria to assist owners/operators in selecting CMPs and preparing CMP Applications. The Handbook will include descriptions of the CMPs, District CMP applications, and other useful information about the CMP Program. The CMP Handbook is not an official District document.

3.12 Conservation Management Practice List (CMP List): the list of CMPs by CMP categories as approved by the District Board on May 20, 2004.

3.13 Conservation Management Practice Plan (CMP Plan): A CMP Application approved by the APCO.

3.14 Conservation Management Practice Program (CMP Program): a District program with the purpose of reducing air pollutants from agricultural operation sites.

3.15 Contiguous or Adjacent Property: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.16 District: as defined in Rule 1020 (Definitions).

3.17 Fugitive Dust: as defined in Rule 8011 (General Requirements).

3.18 Mature Dairy Cow: a cow that has had its first calf.

3.19 NRCS: The United States Department of Agriculture Natural Resource Conservation Service.

3.20 Owner/Operator: as defined in Rule 8011 (General Requirements).

3.21 Particulate Matter: as defined in Rule 8011 (General Requirements).

3.22 Paved Road: as defined in Rule 8011 (General Requirements).

3.23 PM10: as defined in Rule 1020 (Definitions).

3.24 Road: as defined in Rule 8011 (General Requirements).

3.25 San Joaquin Valley Air Basin: as defined in Rule 1020 (Definitions).

3.26 Unpaved Road: as defined in Rule 8011 (General Requirements).

3.27 Unpaved Vehicle/Equipment Traffic Area: as defined in Rule 8011 (General Requirements).

3.28 Vehicle: as defined in Rule 8011 (General Requirements).

4.0 Exemptions

4.1 The provisions of this rule, except for the recordkeeping provisions of Section 6.5.2, shall not apply to any of the following sources:

4.1.1 Agricultural operation site where the total acreage of all agricultural parcels is less than 100 acres excluding the AFO and exempted lands pursuant to Section 4.1.2 thru Section 4.1.5.

4.1.2 Woodland and wasteland not actually under cultivation or used for pasture.

4.1.3 Land placed in the Conservation Reserve Program meeting the definition and criteria set by the NRCS.

4.1.4 Agricultural parcel that are 3000 feet or more above mean sea level.

4.1.5 Agricultural operation parcel used for the purpose of:

4.1.5.1 Propagating young trees, shrubs, and other miscellaneous crops for transplanting, and exhibiting plants under controlled conditions inside a building with walls and roof, or

4.1.5.2 Providing grazing rangeland or pasture, or

4.1.5.3 Forestry, including but not limited to timber harvest operations, silvicultural practices, forest management burning, or forest protection practices.

4.2 The provisions of this rule, except for the recordkeeping provisions of Section 6.5.2, shall not apply to any of the following sources within an agricultural operation site:

4.2.1 An AFO of mature dairy cows with less than 500 mature dairy cows, whether milked or dry, or

4.2.2 An AFO of cattle, other than mature dairy cows or veal calves, with less than 190 cattle, other than mature dairy cows or veal calves. Cattle includes, but is not limited to, heifers, steers, bulls and cow/calf pairs, or

4.2.3 An AFO of turkeys with less than 55,000 turkeys, or

4.2.4 An AFO of chickens, other than laying hens, with less than 125,000 chickens (other than laying hens), or

4.2.5 An AFO of laying hens with less than 82,000 laying hens, or

4.2.6 An AFO other than an AFO for mature dairy cows, cattle, turkeys, chickens, or laying hens.

4.3 This rule does not exempt the owner/operator from any other District regulations.

5.0 Requirements

5.1 Effective on and after July 1, 2004, an owner/operator shall implement the applicable CMPs selected pursuant to Section 6.2 for each agricultural operation site.

5.2 An owner/operator shall prepare and submit a CMP Application for each agricultural operation site, pursuant to Section 6.0, to the APCO for approval. A CMP Application approved by the APCO shall constitute a CMP Plan.

5.3 Except as provided by Section 5.4, an owner/operator shall implement the CMPs as contained in the CMP Plan approved pursuant to Section 6.0 for each agricultural operation site no later than ten (10) days after notification by the APCO of the approval of the CMP Application.

5.4 An owner/operator that discontinues the implementation of a CMP as committed to in a CMP Plan or makes other changes that are inconsistent with the CMP Plan shall comply with the requirements of Section 6.3.4.

6.0 Administrative Requirements

6.1 CMP Application Preparation

An owner/operator shall prepare a CMP Application for each agricultural operation site. Each CMP Application shall include, but is not limited to, the following information:

6.1.1 The name, business address, and phone number of the owner/operator responsible for the preparation and the implementation of the CMP Plan.

6.1.2 The signature of the owner/operator and the date that the application was signed.

6.1.3 A plot plan or map which contains the following information:

6.1.3.1 The location of the agricultural operation site,

6.1.3.2 The location of each agricultural parcel on the agricultural operation site,

6.1.3.3 The location of unpaved roads and unpaved equipment/traffic areas to be covered by the CMP Plan, and

6.1.3.4 The location where the CMP will be implemented.

6.1.3.5 The plot plan or map shall be maintained on-site and made available to the APCO upon request.

6.1.4 The following information, for each agricultural parcel of the agricultural site:

6.1.4.1 The CMPs, selected pursuant to Section 6.2, implemented or planned for implementation during July 1, 2004 to December 31, 2004, and the CMPs, selected pursuant to Section 6.2, planned for implementation for 2005 and subsequent years, and

6.1.4.2 The crop, AFO, or other use of the agricultural parcel.

6.1.5 Information necessary to calculate emission reductions including, but not limited to:

6.1.5.1 The crop or animals and total crop acreage or number of animals and the total length (miles) of unpaved roads, and the total area (acres or square feet) of the unpaved equipment and traffic areas to be covered by the CMP Plan, and

6.1.5.2 Other information as determined by the APCO.

6.2 CMP Selection

An owner/operator shall select one (1) CMP from the CMP list for each of the applicable CMP categories for each agricultural parcel of an agricultural operation site, except as provided below:

6.2.1 If an agricultural operation site or agricultural parcel has crop rotation, an owner/operator shall select one (1) CMP from the CMP list for each of the applicable CMP categories for each rotated crop type.

6.2.2 If a CMP can only be selected for implementation on a portion of an agricultural operation site, an owner/operator shall select an additional

CMP within the CMP category to be implemented on the remaining acreage or remaining AFO.

6.2.3 An owner/operator may select a substitute CMP from another CMP category when no feasible CMP can be identified from one category. This provision shall not apply for the unpaved road, and unpaved vehicle/equipment traffic area CMP categories.

6.2.3.1 An owner/operator may identify or develop a new CMP not on the CMP list to be used to comply with the requirements of this rule. Prior to use of the new CMP the owner/operator must obtain the interim approval of the APCO to use a new CMP to meet the requirements of Section 6.2. The owner/operator shall demonstrate that the new CMP achieves PM10 emission reductions that are at least equivalent to other CMPs on the CMP list that could be selected for the applicable operation.

6.2.3.2 The APCO will perform an independent analysis of proposed CMPs to determine that they achieve PM10 emission reductions that are at least equivalent to other CMPs on the CMP list that could be selected for the applicable operation. This analysis shall be made using the most recent emission factors provided by EPA or CARB when available. CMPs that are not shown to achieve equivalent emission reductions will be disapproved. The District shall maintain a list of CMPs determined to be equivalent under this Section.

6.2.3.3 An owner/operator may satisfy the requirements of Rule 8081 by implementing CMPs for the unpaved road and unpaved vehicle/equipment traffic area CMP categories that are equivalent to the control measures specified in Rule 8081.

6.3 CMP Application Submission

An owner/operator shall submit a CMP Application, prepared pursuant to Section 6.1, to the APCO according to the following schedule:

6.3.1 No later than December 31, 2004, for an agricultural operation site, existing as of July 1, 2004.

6.3.2 No later than December 31, 2004, for an agricultural operation site or agricultural parcel acquired, or that becomes subject to the provisions of Section 5.0 after July 1, 2004 but before November 1, 2004.

6.3.3 Within 90 days for an agricultural operation site or an agricultural parcel that is acquired or becomes subject to the provisions of Section 5.0 after October 31, 2004.

6.3.4 Within 60 days of any operational, administrative, or other modification that necessitates the revision of the CMP Plan. A modification includes, but is not limited to, the following:

6.3.4.1 Administrative changes to any information provided pursuant to Section 6.0,

6.3.4.2 Implementation of a CMP other than the CMP listed in a CMP Plan,

6.3.4.3 Change of the crop or AFO on a agricultural parcel, and

6.3.4.4 Any other changes as determined by the APCO.

6.4 CMP Application Review and Evaluation

6.4.1 The APCO shall:

6.4.1.1 Review the CMP Application and determine whether the submitted CMP Application is complete. Completeness shall be determined by evaluating whether the CMP Application meets the requirements of Section 6.1 of this rule and the applicable requirements of Rule 3190.

6.4.1.2 Notify the owner/operator in writing of the determination that the CMP Application is, or is not, complete and request the owner/operator to provide additional information within 30 days.

6.4.1.3 Evaluate and either approve or disapprove the CMP Application and provide written notification to the owner/operator within 180 days after receipt of the complete CMP Application, of the approval or disapproval of the CMP Application.

6.4.2 A CMP Application for a modification to a CMP Plan pursuant to Section 6.3.4.1 shall be deemed approved as submitted unless written comments are transmitted by the APCO to the owner/operator within 30 days of receipt of the CMP application.

6.4.3 A CMP Application for a modification to a CMP Plan pursuant to Sections 6.3.4.2, 6.3.4.3, and 6.3.4.4 shall be deemed conditionally approved as submitted unless written comments are transmitted by the APCO to the owner/operator within 30 days of receipt of the CMP application.

6.4.4 The approval of a CMP Application shall not serve to excuse the owner or operator from complying with law, nor shall it excuse any violation.

6.5 Recordkeeping

An owner/operator shall, upon request, make available to the APCO the records required to be kept pursuant to Section 6.5.1 and Section 6.5.2.

6.5.1. An owner/operator subject to Section 5.0 shall maintain the following records for a minimum of five (5) years:

6.5.1.1 A copy of each CMP Application and CMP Plan.

6.5.1.2 Supporting information necessary to confirm the implementation of the CMPs.

6.5.2 An owner/operator claiming exemption pursuant to Section 4.0 shall maintain records for a minimum of five (5) years that demonstrate that the agricultural operation site or agricultural parcel qualified for the exemption.

6.6 Loss of Exemption

An owner/operator of an agricultural operation site or agricultural parcel that becomes subject to the provisions of Section 5.0 of this rule, through loss of exemption, shall comply with all applicable provisions of this rule pursuant to the schedule in Section 6.3.

7.0 Compliance Schedule

Unless otherwise noted, all provisions of this rule shall be effective on and after May 20, 2004.

8.0 Backstop Provision

If by December 31, 2005, the CMP Program has not achieved the PM10 emission reduction commitment for the PM10 Reasonable Further Progress Plan due in 2006, the District shall take actions necessary to meet the reduction target for the CMP Program

such as revising the exemption thresholds, or increasing the total number of CMPs required to be implemented or other actions. The APCO will revise the CMP Program requirements and CMP Applications and notify the owner/operator in writing of the changes.

LIST OF CONSERVATION MANAGEMENT PRACTICES

MAY 20, 2004
AUGUST 19, 2004

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
CROPLAND -LAND PREPARATION / CULTIVATION			
Alternate Till	Rotate tillage leaving residue on soil	Tilling alternate rows for weed management allows for approximately 50% reduction in field activity. Stabilizes soil surface, reduces soil compaction	Tillage of alternate rows, of vineyard and orchards, thereby reducing passes across field.
Bed-row size or spacing	Increase or decrease the size of the planting area bed (can be done for field and permanent crops)	Reduces the number of passes and soil disturbance by increasing plant density/canopy thru reduction of row width, overhead vineyard production systems, containment of PM within canopy	Planting multi- rows on a wide bed, e.g. tomatoes or melons 2- rows on 60", Narrow row planting of cotton can reduce two to three cultivation passes; overhead vineyard system of vineyards can reduce cultivation and pesticides by shading unwanted vegetation that reduces the need for cultivation and pesticides, other planting systems may have similar benefits, including but not limited to using 80" wide-bed system as well as a 60"system for either cotton or vegetable planting.
Chemigation/Fertigation	Application of chemicals thru an irrigation system	Each application reduces the need to travel in-field for application purposes. Reduces the number of passes and soil disturbance, increases efficiency for application	During irrigation, add herbicide or fertilizer through water application; also includes aerial application
Combined operations	To combine equipment, to perform several operations during one pass	Reduction in the number of passes necessary to cultivate the land will result in fewer disturbances to the soil. Other benefits are reduction of soil compaction and time to prepare fields, both of which can be precursors to additional tillage requirements	Combining cane cutting, discing and flat- furrowing in a single pass for vineyards, use of one- pass till equipment in ground preparation or crop tillage, cultivation and fertilization of field crop in a single pass
Conservation irrigation	To conserve the quantity of water use, e.g.: drip, sprinkler, buried/underground line	Conserves water, reduces weed population, which in turn reduces the need for tillage and reduces soil compaction.	Use drip, or buried line (including permanent or semi-permanent line) in crop production, use of pressure bombs, water flow meters or soil monitoring devices to avoid over-irrigation, using irrigation management consultants, adopting the use of Evapo-transpiration factors

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Conservation tillage (e.g.: no tillage, minimum tillage)	Types of tillage that reduce loss of soil and water in comparison to conventional tillage	Reduces the number of passes, soil disturbance. It improves soil because it retains plant residue and increases organic matter.	Converting to no or low till operations, implement reduced till activities, adding soil/ water amendments to improve resource and reduce tillage needs
Cover crops	Use seeding or natural vegetation/regrowth of plants to cover soil surface	Reduces soil disturbance due to wind erosion and entrainment.	Plant or allow volunteer vegetation to grow in crop without tilling under thereby reducing tillage and increasing stabilizing of that portion of soil
Equipment changes/Technological improvements	To modify the equipment such as combines, cotton pickers, tilling and harvesting equipment, increase equipment size, modify land planing and land leveling, matching the equipment to row spacing, grafting to new varieties or technological improvements	Reduces the number of passes during an operation, therefore reducing soil disturbance.	Convert from conventional raisin operation to D.O.V. or overhead, grafting to new varieties, increase harvester head size to reduce passes, increase tillage equipment size to reduce passes and flame cultivation
Fallowing land	temporary or permanent removal from production. (e.g.: vineyard pullout, Raisin Industry Diversion program, wildlife/wetlands conservation program)	Eliminates entire operation/passes or reduces activities.	Leaving a portion of field untilled , Install an NRCS approved practice.
Floor management	Smoothing and flattening the soil surface after nut harvest to remove post-harvest residue; maintain clean, smooth, firm floor throughout season by elimination of disking	Reduces passes thru elimination of disking	Maintain level floor, chemical treatment, use one-pass tillage practices, irrigation or otherwise firming of soil to prevent P.M.

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Integrated Pest Management	A decision process which uses a combination of techniques including organic, conventional, biological farming practices to suppress pests problems	Reduces use of herbicide/pesticide therefore reducing number of passes for spraying, reduced soil compaction , reducing the need for additional tillage, creates beneficial insect habitat, reducing the need for spray passes.	Monitoring crop for pests to accurately and effectively apply control measures, use county Farm Advisor thresholds for spray timing, incorporate biological practices into farming operation to reduce need for spraying
Mulching	Applying or leaving plant residue or other material to soil surface	Reduces entrainment of PM due to winds, reduces weed competition thereby reducing tillage passes & compaction.	May include organic material, gypsum, lime, humus, pre-plant ground covers or plastic mulches for vegetables
Night farming	Operate at night where practical when moisture levels are higher and winds are lighter	Decreases the concentration of PM emissions during daytime, increased ambient humidity reduces PM during high emissions periods	Increased humidity increases soil surface moisture thereby helping contain P.M. emissions from tillage.
Non tillage / Chemical tillage	Use flail mower, low volume sprayers, use heat delivery system (as harvest pre-conditioner)	Reduces soil compaction, stabilizes soil through elimination or reduction of soil tillage passes	Leaving residue on surface after mowing, using pre-emergent or contact herbicides, scorching of weeds or foliage, mulch to smother weed competition. Semi-permanent crops e.g.: alfalfa will require no tillage.
Organic Practices	Use biological control methods, use non-chemical control methods	Reduces chemical use, thereby reducing passes	Organic certification, biological controls mulches, humus,
Precision farming (GPS)	e.g.: GPS, using satellite navigation to calculate position in the field, therefore manage/treat selective area	Reduces overlap, allows operations during inclement weather conditions and at night.	Install overlap reduction technology, pass markers, variable rate application technology, use petiole and soil sampling to reduce unnecessary applications
Time of planting	To modify the time of planting	Assists in distributing PM10 emissions to a period when there's less PM concentration.	When possible plant early season,i.e. tomatoes, sugar beets, vegetables, some tree varieties, includes seasonality and time of day.
Transgenic crops	Use of GMO or Transgenic crops	Reduces need for tillage or cultivation operations, reduces soil disturbance.	May include genetically altered seed, nematode resistant rootstock, grafting
Transplanting	Planting plants already in a growth state	Reduces soil disturbance and number of passes compared to using seeding	Instead of direct seeding, use transplants to avoid tillage; viable in vegetable crops

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
CROPLAND-HARVEST			
Baling/Large Balers	Using balers to harvest crop	Reduce P.M. emissions from chopping, truck passes, residue burning	Bale forage, grain stubble, or crop residue
Combined operations	To combine equipment, performing several operations during one pass	Reduction in number of passes necessary to harvest the crop, will result in fewer disturbances to the soil and reduced soil compaction.	Boll buggys,bankout wagons, bulk movement of commodity from field, gondolas, combined shredding and incorporation
Continuous tray/D.O.V., New drying techniques for dried fruit	Any technology to reduce labor and tillage	Reduces the number of equipment passes, field entry, and soil erosion	Will reduce passes in field because of change in technology to dry fruit, i.e. terracing and throwing back in raisin operation
Equipment changes/Technological improvements	To modify the equipment such as combines, cotton pickers, tilling and harvesting equipment, increase equipment size, modify land planing and land leveling, matching the equipment to row spacing, and technological improvements	Reduces the number of passes during an operation, therefore reducing soil disturbance.	Convert cotton operation from 2 to 4 or greater. Convert from conventional raisin operation to D.O.V. or overhead, changing variety, increase harvester head size to reduce passes, increase tillage equipment size to reduce passes
Fallowing land	temporary or permanent removal from production. (e.g.: vineyard pullout, Raisin Industry Diversion program, wildlife/wetlands conservation program)	Eliminates entire operation/passes or reduces activities.	remove or leave out an area of farm from planting to reduce need for tillage pesticide application, harvest requirements
Floor management	Smoothing and flattening the soil surface after nut harvest to remove post-harvest residue; maintain clean, smooth, firm floor throughout season by elimination of disking	Allows for proper calibration of harvest equipment to reduce soil surface disturbance.	Maintain level floor, chemical treatment, use one-pass tillage practices, irrigation or otherwise firming of soil to prevent P.M.
Green Chop	The harvesting of a forage crop without allowing it to dry in the field.	Reduces multiple equipment passes in-field, reduces soil disturbance, reduces soil compaction, reduces dust emissions from dry materials.	Alfalfa, winter forage, silage corn.

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Hand harvesting	Harvesting crop by hand	Reduces soil disturbance due to machinery passes.	use where practical, may be the only option for fresh fruit and vegetables
Night Harvesting	Implementing cultural practices at night, or at times of high humidity.	Reduces P.M. by operating when ambient air is moist, thereby reducing emissions.	Increased humidity may increase soil surface moisture thereby helping contain P.M. emissions from tillage.
No burning	Switching to a crop/system that would not require waste burning	Reduces emissions associated with burning	Non- burning may include eliminating burning of paper tray drying materials
Pre-Harvest soil preparation	Applying a light amount of water or stabilizing material to soil prior to harvest (when possible)	Reduces P.M. emissions at harvest	A light application of water to soil prior to garlic harvest, to help control dust.
Shed Packing	Packing commodities in a covered or closed area	Reduces field traffic, thereby reducing P.M. emissions	Moving crops out of field, by way of bulk transport systems, to a designated pack area.
Shuttle system/larger carrier	multiple bin/trailer	Haul multiple or larger trailers/bins per trip thereby reducing emissions through reduced passes.	Boll buggys,cotton modules versus trailers, bankout wagons, gondolas, bulk movement of commodity from field
CROPLAND-OTHER			
Alternate Till	Rotate tillage, leaving residue on soil	Tilling alternate rows for weed management allows for approximately 50% reduction in field activity. Stabilizes soil surface, reduces soil compaction, reduces windblown dust.	Tillage of alternate rows, of vineyard and orchards, thereby reducing passes across field.
Application Efficiencies	Use compact, low volume, or concentrate quantity with spray equipment, aerial applications, use micro-heads or infrared spot sprayer, electrostatic sprayers	Reduces soil compaction, passes, and chemical usage	Low volume sprayer heads, photosynthetic i.d heads, hand- spot spraying, variable rate applicators & shielded sprayers, to reduce spray emissions and apply spray to desired pest.
Baling/Large Balers	Using balers to harvest crop	Reduce P.M. emissions from chopping, truck passes, residue burning	Bale forage, grain stubble, or crop residue.
Bulk materials control	Minimize visible dust emissions from bulk materials	Reduces entrainment of fugitive dust	To apply water or suitable chemical/organic , or cover the bulk materials with tarps, plastic or suitable material, or construct wind barriers surrounding the bulk materials

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Chemigation/ Fertigation	Application of chemicals thru an irrigation system	Each application reduces the need to travel in-field for application purposes. Reduces the number of passes and soil disturbance, increases efficiency for application	During irrigation, add herbicide or fertilizer through water application; also includes aerial application.
Conservation irrigation	To conserve the quantity of water use, e.g.: drip, sprinkler, buried/underground line	Conserves water, reduces weed population, which in turn reduces the need for tillage and reduces soil compaction.	Use drip, or buried line (including permanent or semi-permanent line) in crop production, use of pressure bombs, water flow meters or soil monitoring devices to avoid over-irrigation, using irrigation management consultants, adopting the use of Evapo-transpiration factors
Cover crops	Use seeding or natural vegetation/regrowth of plants to cover soil surface	Reduces soil disturbance due to wind erosion and entrainment, improves water penetration, increases organic matter, improves soil tilth	Plant or allow volunteer vegetation to grow in crop without tilling under thereby reducing tillage and increasing stabilizing of that portion of soil
Fallowing land	temporary or permanent removal from production. (e.g.: vineyard pullout, Raisin Industry Diversion program, wildlife/wetlands conservation program)	Eliminates entire operation/passes or reduces activities.	Remove or leave out an area of farm from planting to reduce need for tillage pesticide application, harvest requirements
Grinding/Chipping/ Shredding	Grinding prunings and orchard removals, instead of burning, incorporate to soil, to reduce emissions	Reducing P.M. from burning crop residues.	Using Bio-mass, chippers rather than burning to grind broken or downed limbs, flailing of vegetation instead of tilling, send prunings,and/or orchard removal material to power co-gen plants, compost residue and use for soil amendment, or, incorporate into soil.
Integrated Pest Management	A decision process which uses a combination of techniques including organic, conventional, biological farming practices to suppress pests problems	Reduces use of herbicide/pesticide therefore reducing number of passes for spraying, reduced soil compaction , reducing the need for additional tillage, creates beneficial insect habitat, reducing the need for spray passes.	Monitoring crop for pests to accurately and effectively apply control measures, use county Farm Advisor thresholds for spray timing

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Irrigation Power Units	Use cleaner burning engines, electric motors (CMP only applicable if engines are cleaner than current rule requirements)	Reduces P.M. and NOx emissions.	New Tier II engines, electric motor, other alternative fuels.
Mulching	Applying plant residue or other material to soil surface or incorporating into soil.	Reduces entrainment of PM due to winds, reduces weed competition thereby reducing passes, compaction.	May include organic material, gypsum, lime, humus, pre-plant ground covers
Night farming	Operate at night where practical when moisture levels are higher and winds are lighter	Decreases the concentration of PM emissions during daytime, increased ambient humidity reduces PM during high emissions periods, reduces PM10 precursors.	Increased humidity increases soil surface moisture thereby helping contain P.M. emissions from tillage. Night time spraying.
No burning	Switching to a crop/system that would not require waste burning	Reduces practices associated with pruning and chipping	Non- burning may include; pesticide and seed containers, weeds, prunings, other residual crop residues.
Non tillage / Chemical tillage	Use flail mower, low volume sprayers, e.g.: use heat delivery system for cotton defoliation	Reduces soil compaction, stabilizes soil through elimination or reduction of soil tillage passes	Leaving residue on surface after mowing, using pre-emergent or contact herbicides, scorching of weeds instead of tilling, mulch to smother weed competition
Organic Practices	Use biological control methods, use non-chemical control methods	Reduces chemical use	Organic certification, biological controls mulches, humus.
Permanent Crops	Having an established permanent crop	Reduces incidence of wind blown dust	Trees, Vines or certain semi-permanent field crops
Reduced pruning	Reduce frequency of pruning (e.g.: one time per year, or every other year)	Reduces soil disturbance due to machinery passes and reduce fuel use.	Topping, hedging, alternate row pruning, alternate year pruning

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Soil amendments	Organic or chemical materials applied to the soil for improvement (e.g.: gypsum, lime, polyacrilamide)	Increase moisture retention, reduce soil compaction, stabilize soil.	May include Organic material, gypsum, lime, humus,pre-plant ground covers
Soil incorporation	Disking residues and/or soil incorporation of residue	Reduces emissions from burning.	May include discing of chips or crop residue at site, movement to other points on farm or other farms for incorporation, use chips or grindings for bio-mass, humus
Sulfur - reduction or elimination of dusting	Organic chemical used to control disease in crop, ornamental and home and gardens	Reduced dry particulates.	Control disease through alternative measures such as, wettable sulfur, biological or other controls
Surface roughening	Leaving soil surface as it stands or clods of soil when fallow, preparing planting surface perpendicular to wind direction	Reduces entrainment of PM due to winds	Till perpendicular to predominate wind direction. Can be used in the SJV especially during the high wind period such as March -June to reduce geologic emissions.
Transgenic crops	Use "herbicide-ready"	Reduces soil disturbance and weeding passes, and lessens drift.	May include genetically altered seed, nematode resistant rootstock, grafting
Wind barrier	Artificial or vegetative wall/fence that disrupts the erosive flow of wind over unprotected land	Reduces entrainment of PM due to winds	Plant various wind breaks around farmstead with plants such as, oleanders, euclypyus,juniper native grass.

CROPLAND- UNPAVED ROADS

Chips / Mulches **Organic Materials** **Polymers** **Road oil** **Sand**	Application of any non-toxic chemical or organic dust suppressant which meets any specification required by any federal, state, or local water agency and is not prohibited for use by any applicable regulations. See Regulation VIII for additional requirements and see Agriculture Improving Resources (AIR) Partner's list of products	Reduces entrainment of fugitive dust	Application of suppressant to areas meeting the vehicle trips per day threshold

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Gravel	Placing a layer of gravel with enough depth to minimize dust generated from vehicle movement and to dislodge any excess debris which can become entrained	Reduces entrainment of fugitive dust	To add a layer of washed gravel, rock, or crushed rock
Mechanical Pruning	Using a machine instead of hand labor to prune	Reduced vehicle trips, thereby reducing P.M. emissions	Pruning style can include tree hedging, topping, summer pruning, trimming, vineyard hedging or other mechanical pruning operations
Paving	To pave currently unpaved roads	Prevent dust from vehicle traffic	To pave unpaved roads
Restricted Access	To restrict public access to private roads	Reduces vehicle traffic and thus reduces associated fugitive dust	To install a device which will limit use of road on or surrounding an operation
Speed Limits	Enforcement of speeds that reduce visible dust emissions	Dust emissions from unpaved roads are a function of speed meaning reducing speed reduces dust	Posting speed limits on or surround the operation
Track out control	Minimize any and all material that adheres to and agglomerates on all vehicles and equipment from unpaved roads and falls onto a paved public road or the paved shoulder of a paved public road	Reduces entrainment of fugitive dust	Accomplished by maintaining sufficient length of paved/ graveled interior roads to allow mud and dirt to drop off vehicles before exiting the site; or use of a grizzly to dislodge debris from tires and undercarriage of vehicles leaving site.
Water	Application of water to unpaved roads and traffic areas	Reduces entrainment of fugitive dust	Application of water to areas meeting a vehicle trip threshold
Wind barrier	Artificial or vegetative wall/fence that disrupts the erosive flow of wind over unprotected land	Reduces entrainment of fugitive dust due to winds	Plant various wind breaks around farmstead with plants such as, oleanders, eucalyptus, juniper native grass or tillage perpendicular to field till, etc

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
CROPLAND- UNPAVED VEHICLE/EQUIPMENT TRAFFIC AREAS			
Chips / Mulches **Organic Materials** **Polymers** **Road oil** **Sand**	Application of any non-toxic chemical or organic dust suppressant which meets any specification required by any federal, state, or local water agency and is not prohibited for use by any applicable regulations. See Regulation VIII for additional requirements	Reduces entrainment of fugitive dust	Application of suppressant to areas meeting the vehicle trips per day threshold
Gravel	Placing a layer of gravel with enough depth to minimize dust generated from vehicle movement and to dislodge any excess debris which can become entrained	Reduces entrainment of fugitive dust	To add a layer of washed gravel, rock, or crushed rock
Paving	To pave currently unpaved areas	Prevent dust from vehicle traffic	To pave unpaved areas
Restricted Access	To restrict public access to private roads	Reduces vehicle traffic and thus reduces associated fugitive dust	To install a device which will limit use of road on or surrounding an operation
Speed Limits	Enforcement of speeds that reduce visible dust emissions	Dust emissions from unpaved roads are a function of speed meaning reducing speed reduces dust	Posting speed limits on or surround the operation
Track out control	Minimize any and all material that adheres to and agglomerates on all vehicles and equipment from unpaved roads and falls onto a paved public road or the paved shoulder of a paved public road	Reduces entrainment of fugitive dust	Accomplished by maintaining sufficient length of paved/ graveled interior roads to allow mud and dirt to drop off vehicles before exiting the site; or use of a grizzly to dislodge debris from tires and undercarriage of vehicles leaving site.
Water	Application of water to unpaved roads and traffic areas	Reduces entrainment of fugitive dust	Application of water to areas meeting a vehicle trip threshold

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Wind barrier	Artificial or vegetative wall/fence that disrupts the erosive flow of wind over unprotected land	Reduces entrainment of fugitive dust due to winds	Plant various wind breaks around farmstead with plants such as, oleanders, eucalyptus, juniper native grass or tillage perpendicular to field till, etc

CROPLAND-Glossary of terms

Alternate	To do activity in an every-other-month rotation, or every-other row fashion
Bed, Bed Row	A surface prepared for the planting of seeds or crop
Chemigation	Applying chemicals through an irrigation system
Disturb, Disturbance	To work the soil in a fashion where it would no longer be in a firm or stable state
Disc,Disk,Disking	An implement designed and used, when pulled behind a tractor, mixes soil and eliminates weeds
Equipment	Implement of farm husbandry including but not limited to; tractor, disk, plow, spray machine,cultivator,trailer.
Fertigation	Applying plant nutrients through an irrigation system
Floor	The area of ground that is between the width of trees or vines. Also called the centers.
Non-Tillage	A system whereby the soil is not moved through mechanical means
Tillage	Using an implement to disturb the soil surface or sub-surface

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
POULTRY OPERATIONS - MANURE HANDLING & STORAGE			
Time of manure spreading	To spread the manure at a time that would help reduce the amount of PM10 released in the air	Reduces the amount of fugitive dust released in the air	To spread manure during cooler times of day such as morning or evening and during times of low wind.
Cleanout frequency	To adjust the frequency of cleanouts from the houses	Reduces particulates released from poultrylitter/manure accumulating or stored inside houses. The less disturbance and handling of the litter/manure, the less emissions. Any time poultry bedding material is moved, some of the bulk material may become airborne. The bedding may be used for several grow out cycles before it becomes so laden with waste that it is unsuitable for continued use. Optimizing the reuse of the bedding material can reduce the number of material transfers, thus the opportunity for some of the material to become airborne. Implementation of this CMP implies that the generation of dust will become a factor in the determination to perform a house clean-out, and more reuse of bedding is anticipated.	To allow bedding materials and manure to remain in the house for multiple flocks or grow out cycles, or to decrease the frequence of house cleanouts to minimize dust emissions.
Outdoor Storage	To use of a structure design to store the bulk materials (e.g.: used poultry litter/manure) or to securely cover the bulk materials if it must be stored outdoors not within any enclosure	Prevents contact with precipitation and prevents windblown dispersion. Poultry litter consists mainly of light organic materials such as rice hulls or wood shavings. During a poultry house cleanout the used litter is scrapped out of the house and left in piles outdoors. If left in these outdoor piles for extended periods, winds can cause material to become airborne. Any technique that will shield the litter from wind will prevent or reduce the amount of material becoming airborne. Securely tarping the piles will protect the used litter from precipitation and windblown dispersal until the liter can be removed from the ranch. A partially enclosed structure, with walls situated in the prevailing wind direction, may be used to protect used litter stored onsite from precipitation and windblown dispersal.	To employ a structure design to store used poultry litter (manure and bedding material) onsite or to cover the bulk materials with tarps, plastics or suitable materials.

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
POULTRY OPERATIONS - FEEDING			
Boot or sock	Feed is loaded into the feed storage bins by employing a sock or boot on the feed delivery truck auger	To reduce the release of particulates	Use of a sock or boot on the delivery truck auger
POULTRY OPERATION - OPEN AREAS			
Vegetation	Maintaining some vegetation, such as native grasses, on vacant land	Reduces windblown dust.	Allowing vegetative material to grow on vacant sections of the operation
Reduced tillage	To reduce the number of tillings	Reducing soil disturbance by stabilizing soil surface	Leaving residue on surface after mowing, using pre-emergent or contact herbicides, scorching of weeds instead of tilling, mulch to smother weed competition
Windblocks	To establish a perimeter physical barrier to reduce windblown dust.	Disrupts the erosive flow of wind over unprotected areas thus helping to reduce fugitive dust	Use of perimeter physical barriers or vegetation barriers to disrupt wind flow
Dust suppressants	Application of any non-toxic chemical or organic dust suppressant which meets any specification required by any federal, state, or local water agency and is not prohibited for use by any applicable regulations. See Regulation VII for additional requirements	Reduces entrainment of fugitive dust	To use a variety of products: water application, hygroscopic suppressants (road salts), petroleum emulsions, adhesives, polymers emulsions, and bituminous materials (road oil). Water or chemical dust suppressants will bind soils. r, sodium chloride, road oil, chippings from farm, etc
POULTRY OPERATION - UNPAVED ROADS			
Gravel	Placing a layer of gravel with enough depth to minimize dust generated from vehicle movement and to dislodge any excess debris which can become entrained	Reduces entrainment of fugitive dust	To add a layer of washed gravel, rock, or crushed rock
Access restriction	To restrict public access to private roads	Reduces vehicle traffic and thus reduces particulates emissions	To install a device which will limit use of road on or surrounding an operation
Pavement	To pave currently unpaved areas	Reduces entrainment of fugitive dust	To pave unpaved roads to prevent dust from vehicle traffic

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Dust suppressants	Application of any non-toxic chemical or organic dust suppressant which meets any specification required by any federal, state, or local water agency and is not prohibited for use by any applicable regulations. See Regulation VII for additional requirements	Reduces entrainment of fugitive dust	To use a variety of products: water application, hygroscopic suppressants (road salts), petroleum emulsions, adhesives, polymers emulsions, and bituminous materials (road oil). Water or chemical dust suppressants will bind soils. r, sodium chloride, road oil, chippings from farm, etc
Speed reduction	Enforcement of speeds that reduce visible dust emissions	Dust emissions from unpaved roads are a function of speed so reducing speed reduces dust	Posting speed limits on or surround the operation
Track out control	Minimize any and all material that adheres to and agglomerates on all vehicles and equipment from unpaved roads and falls onto a paved public road or the paved shoulder of a paved public road	Reduces entrainment of fugitive dust	Accomplished by maintaining sufficient length of paved/ graveled interior roads to allow mud and dirt to drop off vehicles before exiting the site; or use of a grizzly to dislodge debris from tires and undercarriage of vehicles leaving site.
Vegetation	To establish or maintain natural vegetation	Vegetation prevents wind erosion	Allowing vegetative material to grow on vacant sections of the operation
POULTRY OPS. - UNPAVED VEHICLE/EQUIPMENT TRAFFIC AREAS			
Access restriction	To restrict public access to private roads	Reduces vehicle traffic and thus reduces particulates emissions	To install a device which will limit use of road on or surrounding an operation
Gravel	Placing a layer of gravel with enough depth to minimize dust generated from vehicle movement and to dislodge any excess debris which can become entrained	Reduces entrainment of fugitive dust	To add a layer of washed gravel, rock, or crushed rock
Pavement	To pave currently unpaved areas	Reduces entrainment of fugitive dust	To pave unpaved areas to prevent dust from vehicle traffic

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Dust suppressants	Application of any non-toxic chemical or organic dust suppressant which meets any specification required by any federal, state, or local water agency and is not prohibited for use by any applicable regulations. See Regulation VIII for additional requirements	Reduces entrainment of fugitive dust	To use a variety of products: water application, hygroscopic suppressants (road salts), petroleum emulsions, adhesives, polymers emulsions, and bituminous materials (road oil). Water or chemical dust suppressants will bind soils. r, sodium chloride, road oil, chippings from farm, etc
Vegetation	To establish/maintain natural vegetation or vegetation to prevent wind erosion	Vegetation prevents wind erosion	Allowing vegetative material to grow on vacant sections of the operation
DAIRY OPERATIONS - CORRAL/ MANURE HANDLING			
Sprinkling of open corral	Ensure adequate corral surface moisture level to prevent visible dust emissions. *This measure is not recommended for lactating cows	Stabilizes soil surface allowing for fugitive dust reduction. Sprinkling provides higher moisture content and causes soil compaction rather than loose, dry dirt being kicked up in the air by animal movement action.	Installation of sprinklers or other watering devices to maintain an adequate moisture level
Frequent scraping and or manure removal	Removal of manure from open corrals	Reduces potential for dust disturbance caused by animal's hoof action by maintaining minimal amount of dry dust on corral surface.	Prevent build up of powdery dust in designated areas
Freestall housing	Use of freestall housing	Reduction in amount of generated dust. Concrete floor for manure deposition allows cleaning of manure through a flushing system, also the manure would already be in a high moist state.	Use of freestall
Fibrous layer in dusty areas	Addition of fibrous material to working pens	Prevents dust disturbance and dust entrainment by retaining moisture	Adding wood chips or other materials to sorting alleys and high traffic areas to hold moisture and keep down dust disturbance, and putting damp manure solids right off of the separator into the heifer pens on a daily basis and working it with a rotary harrow. Applies to heifers
Pull-type Manure harvesting equipment	Using a pull-type piece of equipment to leave an even corral surface	Stabilizes soil surface allowing for fugitive dust reduction by avoiding floor depression for dust accumulation and accumulation of dry soil/manure.	Piece of equipment should allow operators to leave an even corral surface of compacted manure on top of the soil. Pulling blades will do better than pushing blades
Scraping/harrowing	Scraping/ harrowing in morning hours when moisture is higher.	Reduction in amount of generated dust by retaining moisture.	Scraping/ harrowing in early morning when moisture is higher

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Shaded areas in open corrals	Animals in open pens will loaf in shade areas increasing stocking density and reducing dust	Reduction in amount of generated dust by retaining moisture.	Providing shaded areas for animals to loaf in
DAIRY OPERATIONS - OVERALL MANAGEMENT/FEEDING			
Bulk materials control	Minimize visible dust emissions from bulk materials	Reduces entrainment of fugitive dust	To apply water or suitable chemical/organic , or cover the bulk materials with tarps, plastic or suitable material, or construct wind barriers such as a 3-sided structure surrounding the bulk materials (e.g.: feed commodity story barns)
Feeding near dusk	Feeding young stock during evening hours	Reduce dust-generating behaviors. For example, young stocks at dairies tend to play when temperature cools off. By feeding them at a later time breaks that activity pattern.	Feeding animals during the evening hours when conditions will generate less dust
Wet feed during mixing	To increase moisture feed levels	Avoid excessive dust.	Addition of water or moist supplements to reduce the amount of generated dust
Place wet material in feedwagon first before mixing	Mix wet feed with dry feed for suppression.	Avoid excessive dust.	Place wet material into feedwagon fist to suppress dust generation
Downwind shelterbelts/ boundary trees	Planting rows of vegetation around facility and surrounding to create a barrier for air exiting from the facilities	Reduces windblown dust.	Use of perimeter barriers or vegetation to disrupt the wind flow
DAIRY OPERATIONS - UNPAVED ROADS			
Dust suppressants	Application of any non-toxic chemical or organic dust suppressant which meets any specification required by any federal, state, or local water agency and is not prohibited for use by any applicable regulations. See Regulation VIII for additional requirements	Reduces entrainment of fugitive dust	To use a variety of products: water application, hygroscopic suppressants (road salts), petroleum emulsions, adhesives, polymers emulsions, and bituminous materials (road oil). Water or chemical dust suppressants will bind soils. r, sodium chloride, road oil, chippings from farm, etc

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Gravel	Placing a layer of gravel with enough depth to minimize dust generated from vehicle movement and to dislodge any excess debris which can become entrained	Reduces entrainment of fugitive dust	To add a layer of washed gravel, rock, or crushed rock
Speed reduction	Enforcement of speeds that reduce visible dust emissions	Dust emissions from unpaved roads are a function of speed so reducing speed reduces dust	Posting speed limits on or surround the operation
Access restriction	To restrict public access to private roads	Reduces vehicle traffic and thus reduces particulates emissions	To install a device which will limit use of road on or surrounding an operation
Pavement	To pave currently unpaved areas	Prevent dust from vehicle traffic	To pave unpaved roads
Track out control	Minimize any and all material that adheres to and agglomerates on all vehicles and equipment from unpaved roads and falls onto a paved public road or the paved shoulder of a paved public road	Reduces entrainment of fugitive dust	Accomplished by maintaining sufficient length of paved/ graveled interior roads to allow mud and dirt to drop off vehicles before exiting the site; or use of a grizzly to dislodge debris from tires and undercarriage of vehicles leaving site.
Speed Bumps	Installation of mechanisms to slow traffic	Dust emissions from unpaved road are a function of speed so reducing speed reduces dust	To install physical devices which slow down the speed of traffic
Appropriate equipment and vehicles	Using trip appropriate vehicles	Reduces the amount of generated dust	Using four wheelers or electric carts rather than trucks for routine trips
DAIRY OPS. - UNPAVED VEHICLE/EQUIPMENT TRAFFIC AREAS			
Dust suppressants	Application of any non-toxic chemical or organic dust suppressant which meets any specification required by any federal, state, or local water agency and is not prohibited for use by any applicable regulations. See Regulation VIII for additional requirements	Reduces entrainment of fugitive dust	To use a variety of products: water application, hygroscopic suppressants (road salts), petroleum emulsions, adhesives, polymers emulsions, and bituminous materials (road oil). Water or chemical dust suppressants will bind soils. r, sodium chloride, road oil, chippings from farm, etc

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Gravel	Placing a layer of gravel with enough depth to minimize dust generated from vehicle movement and to dislodge any excess debris which can become entrained	Reduces entrainment of fugitive dust	To add a layer of washed gravel, rock, or crushed rock
Access restriction	To restrict public access to private roads	Reduces vehicle traffic and thus reduces particulates emissions	To install a device which will limit use of road on or surrounding an operation
Speed reduction	Enforcement of speeds that reduce visible dust emissions	Dust emissions from unpaved roads are a function of speed so reducing speed reduces dust	Posting speed limits on or surround the operation
Pavement	To pave currently unpaved areas	Prevent dust from vehicle traffic	To pave unpaved roads
Appropriate equipment and vehicles	Using trip appropriate vehicles	Reduces the amount of generated dust	Using four wheelers or electric carts rather than trucks for routine trips
FEEDLOT OPERATIONS - PENS/MANURE HANDLING			
Sprinkle	Ensure adequate pen surface moisture level to prevent visible dust emissions	Stabilizes soil surface allowing for fugitive dust reduction. Sprinkling provides higher moisture content and causes soil compaction rather than loose, dry dirt being kicked up in the air by animal movement action.	Installation of sprinklers or other watering devices to maintain an adequate moisture level
Frequent scraping and or manure removal	Removal of powdery dust	Reduces potential for dust disturbance caused by animal's hoof action by maintaining minimal amount of dry dust.	Prevent build up of powdery dust in designated areas
Fibrous layer in working areas (for alley, etc.)	Addition of fibrous material to areas	Prevents dust disturbance.	Adding wood chips or other materials to sorting alleys and high traffic areas to hold moisture and keep down dust disturbance, and putting damp manure solids right off of the separator into the heifer pens on a daily basis and working it with a rotary harrow. Applies to heifers
Pull-type Manure harvesting equipment	Using a piece of equipment to leave an even corral surface	Stabilizes soil surface allowing for fugitive dust reduction by avoiding floor depression for dust accumulation and accumulation of dry soil/manure.	Piece of equipment should allow operators to leave an even corral surface of compacted manure on top of the soil. Pulling blades will do better than pushing blades

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Shade for animal	Animals in open pens will loaf in shade areas increasing stocking density and reducing dust	Reduction in amount of generated dust by retaining moisture.	Providing shaded areas for animals to loaf in
FEEDLOT OPERATIONS - OVERALL MANAGEMENT/FEEDING			
Bulk materials control	Minimize visible dust emissions from bulk materials	Reduces entrainment of fugitive dust	To apply water or suitable chemical/organic , or cover the bulk materials with tarps, plastic or suitable material, or construct wind barriers such as a 3-sided structure surrounding the bulk materials (e.g.: feed commodity story barns)
Feeding near dusk	Feeding during evening hours	Reduce dust-generating behaviors. For example, animals tend to play when temperature cools off. By feeding them at a later time breaks that activity pattern.	Feeding animals during the evening hours when conditions will generate less dust
Wet feed during mixing	To increase moisture feed levels	Ability to avoid excessive dust	Addition of water or moist supplements to reduce the amount of generated dust
Place wet material in feedwagon first	Mix wet feed with dry feed for suppression	Ability to avoid excessive dust	Place wet material into feedwagon fist to suppress dust generation
Downwind shelterbelts/ boundary trees	Planting rows of vegetation around facility and surrounding to create a barrier for air exiting from the facility	Reduces windblown dust	Use of perimeter barriers or vegetation to disrupt the wind flow
FEEDLOT OPERATIONS - UNPAVED ROADS			
Dust suppressants	Application of any non-toxic chemical or organic dust suppressant which meets any specification required by any federal, state, or local water agency and is not prohibited for use by any applicable regulations. See Regulation VIII for additional	Reduces entrainment of fugitive dust	To use a variety of products: water application, hygroscopic suppressants (road salts), petroleum emulsions, adhesives, polymers emulsions, and bituminous materials (road oil). Water or chemical dust suppressants will bind soils. r, sodium chloride, road oil, chippings from farm, etc

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Gravel	Placing a layer of gravel with enough depth to minimize dust generated from vehicle movement and to dislodge any excess debris which can become entrained	Reduces entrainment of fugitive dust	To add a layer of washed gravel, rock, or crushed rock
Access restriction	To restrict public access to private roads	Reduces vehicle traffic and thus reduces particulates emissions	To install a device which will limit use of road on or surrounding an operation
Speed reduction	Enforcement of speeds that reduce visible dust emissions	Dust emissions from unpaved roads are a function of speed so reducing speed reduces dust	Posting speed limits on or surround the operation
Pavement	To pave currently unpaved areas	Prevent dust from vehicle traffic	To pave unpaved roads
Track out control	Minimize any and all material that adheres to and agglomerates on all vehicles and equipment from unpaved roads and falls onto a paved public road or the paved shoulder of a paved public road	Reduces entrainment of fugitive dust	Accomplished by maintaining sufficient length of paved/ graveled interior roads to allow mud and dirt to drop off vehicles before exiting the site; or use of a grizzly to dislodge debris from tires and undercarriage of vehicles leaving site.
Appropriate equipment and vehicles	Using trip appropriate vehicles	Reduces the amount of generated dust	Using four wheelers or electric carts rather than trucks for routine trips
FEEDLOT OPERATIONS - UNPAVED VEHICLE/EQUIPMENT TRAFFIC AREAS			
Dust suppressants	Application of any non-toxic chemical or organic dust suppressant which meets any specification required by any federal, state, or local water agency and is not prohibited for use by any applicable regulations. See Regulation VII for additional requirements	Reduces entrainment of fugitive dust	To use a variety of products: water application, hygroscopic suppressants (road salts), petroleum emulsions, adhesives, polymers emulsions, and bituminous materials (road oil). Water or chemical dust suppressants will bind soils. r, sodium chloride, road oil, chippings from farm, etc

PRELIMINARY CMPs	DESCRIPTION	BENEFITS	EXAMPLES
Gravel	Placing a layer of gravel with enough depth to minimize dust generated from vehicle movement and to dislodge any excess debris which can become entrained	Reduces entrainment of fugitive dust	To add a layer of washed gravel, rock, or crushed rock
Access restriction	To restrict public access to private roads	Reduces vehicle traffic and thus reduces particulates emissions	To install a device which will limit use of road on or surrounding an operation
Speed reduction	Enforcement of speeds that reduce visible dust emissions	Dust emissions from unpaved roads are a function of speed so reducing speed reduces dust	Posting speed limits on or surround the operation
Pavement	To pave currently unpaved areas	Prevent dust from vehicle traffic	To pave unpaved roads
Appropriate equipment and vehicles	Using trip appropriate vehicles	Reduces the amount of generated dust	Using four wheelers or electric carts rather than trucks for routine trips

RULE 4565 BIOSOLIDS, ANIMAL MANURE, AND POULTRY LITTER OPERATIONS

(Adopted March 15, 2007)

1.0 Purpose

The purpose of this rule is to limit emissions of volatile organic compounds (VOC) from operations involving the management of biosolids, animal manure, or poultry litter.

2.0 Applicability

The provisions of this rule apply to all facilities whose throughput consists entirely or in part of biosolids, animal manure, or poultry litter and the operator who landfills, land applies, composts, or co-composts these materials.

3.0 Definitions

3.1 Active Composting: the phase of the composting process that begins when organic materials are mixed together for composting and lasts until one of the following conditions is met:

3.1.1 The organic material emits no more than seven (7) mg carbon dioxide per gram of organic material (CO_2-C) per day, as measured using the test method in Section 6.2.1.1; or

3.1.2 The material has a Solvita Maturity Index of 5 or greater as measured using the test method in Section 6.2.1.2; or

3.1.3 The material has been composted for a period of at least 22 consecutive calendar days.

3.2 Aerated Static Pile: a system designed, constructed, maintained, and operated for decomposing organic material in which the material is placed on top of perforated plates or pipes that are connected to blowers that either push or pull air through the piles.

3.3 Alternative Mitigation Measure: a mitigation measure, proposed by the operator, that is determined by the APCO and EPA to achieve VOC reductions that are equal to or greater than the VOC reductions that would be achieved by other mitigation measures listed in this rule, that operators could choose as a means of complying with rule requirements.

3.4 Animal Manure: non-human animal excretions and waste, including, but not limited to, dried solids and urine from cows, cattle, or swine.

3.5 APCO: as defined in Rule 1020 (Definitions).

3.6 ARB: California Air Resources Board.

3.7 Background: a reading on a hydrocarbon analyzer that is measured at a distance no greater than two (2) meters upwind from any component to be inspected and which is not influenced by any specific emission point.

3.8 BARCT: Best Available Retrofit Control Technology is an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.

3.9 Biosolids: organic material resulting from the treatment of sewage sludge or wastewater. Biosolids that have completed both the active phase and the curing phase of composting are considered finished compost for purposes of this rule.

3.10 Class One Mitigation Measure: a VOC mitigation measure or combination of measures for composting facilities subject to the rule that, at the time of rule adoption, are considered BARCT for VOC for all composting facilities.

3.11 Class Two Mitigation Measure: a VOC mitigation measure or combination of measures for the composting facilities subject to the rule with throughputs of at least 100,000 wet tons per year that, in combination with Class One mitigation measures, are considered BARCT for VOC for these facilities at the time of rule adoption.

3.12 Co-composting: composting where biosolids and/or animal manure and/or poultry litter are mixed with other materials, including amendments, to produce compost. Co-composting includes both the active and curing phases of the composting process.

3.13 Compostable Material: any organic material that is capable of undergoing active composting.

3.14 Composting: the controlled biological decomposition of organic material, such as sewage sludge, animal manures, or crop residues, under aerobic (with air) or anaerobic (without air) conditions to form a humus-like material.

3.15 Composting Facility: any facility where composting or co-composting occurs. Unless exempt under Section 4.0 of this rule, only those composting/co-composting facilities that use biosolids, animal manure, or poultry litter as part of the composting or co-composting operation are subject to this rule.

3.16 Contiguous or Adjacent Property: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.17 Curing Composting: the phase of the composting process that begins immediately after the end of the active phase of composting and lasts until one of the following conditions is met:

3.17.1 The organic material emits no more than four (4) mg CO_2-C per gram of organic material per day, as measured using the test method in Section 6.2.1.1; or

3.17.2 The compost has a Solvita Maturity Index of 7 or greater, as measured using the test method in Section 6.2.1.2; or

3.17.3 The material has been composted at least 40 consecutive calendar days after the active composting period.

3.18 Day: a continuous twenty-four hour period, beginning at 12:00 A.M.

3.19 EPA: United States Environmental Protection Agency.

3.20 Facility: a portion of real property that is on one or more contiguous or adjacent properties all of which are under common ownership or control.

3.21 Finished Compost: a humus-like material that meets at least one of the following conditions:

3.21.1 Emits no more than four (4) mg CO2-C per gram of organic material per day, as measured using the test method in Section 6.2.1.1;

3.21.2 Has a Solvita Maturity Index of 7 or greater, as measured using the test method in Section 6.2.1.2;

3.21.3 Has completed both the active and curing phases of composting.

3.22 Hydrocarbon Vapor Analyzer: a hand-held portable hydrocarbon analyzer that meets the criteria specified in Section 6.2.4.2 or Section 6.2.5.5.

3.23 In-vessel Composting System: a system where all compostable material is inside a negatively-pressurized or positively-pressurized enclosure that is not open to the atmosphere and that is composed of hard-piping, ductwork connections, and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment.

3.24 Land Application: the final disposal of biosolids, animal manure, or poultry litter by spreading or piling of the material in an open area in a manner that does not meet the definition of landfilling.

3.25 Landfill (Landfilling): a method for final disposal of biosolids, animal manure, or poultry litter on land where the material is spread and compacted and a daily cover is applied.

3.26 Land Incorporate: use of a method, such as tilling, injecting, or plowing that covers and mixes material with soil.

3.27 Mitigation Measure: an activity, work practice, or technology that reduces VOC air pollutants emitted by or associated with the management of biosolids, animal manure, or poultry litter.

3.28 Operator: any person who owns, leases, supervises, or operates a facility that processes biosolids, animal manure, or poultry litter, or equipment on such a facility.

3.29 Pathogen Reduction: any process conducted entirely or in part to reduce the number of disease-causing organisms present in biosolids, animal manure, or poultry litter in accordance with Title 14 Chapter 3.1 Division 7 Section 17868.3 of the California Code of Regulations (CCR).

3.30 Pile: material that is heaped together.

3.31 Poultry Litter: poultry excretions and waste, including, but not limited to, dried solids and urine from chickens, turkeys, geese, or ducks.

3.32 Solvita Maturity Index: an index that defines the stage where compost exhibits resistance to further decomposition, as tested by the Solvita Maturity Test®.

3.33 Throughput: the weight of material to be processed, as it is received or generated at the facility subject to this rule, prior to any dewatering or treatment at the receiving facility. Throughput includes the weight of moisture present in the received materials.

3.34 Tipping Fees: money or other financial benefits received by a facility, owner, or operator in exchange for the facility, owner, or operator accepting green waste, biosolids, animal manure, or poultry litter.

3.35 TMECC: Test Methods for the Examination of Composting and Compost by the US Composting Council Research and Education Foundation.

3.36 VOC Control Device: any APCO, ARB, and EPA approved machine or technology used to reduce VOC emissions from a VOC emission source including, but not limited to, a biofilter, a carbon scrubber, or an incineration device.

3.37 Volatile Organic Compounds (VOC): as defined in Rule 1020 (Definitions).

3.38 Year: a continuous, 12-month period beginning on January 1 and ending on December 31.

4.0 Exemptions

Except for the applicable recordkeeping requirements of Section 6.1.1, the provisions of this rule shall not apply to the following facilities:

4.1 Facilities subject to Rule 4570 (Confined Animal Facilities) or facilities that are specifically exempt under Section 4.0 of Rule 4570.

4.2 Composting/co-composting facilities whose throughput includes a total of less than 100 wet tons per year of biosolids, animal manure, and poultry litter. For purposes of this exemption only, only biosolids, animal manure and poultry litter are counted in the throughput determination.

4.3 Operators who land apply any combination of biosolids, animal manure, or poultry litter and that meet all of the following criteria:

4.3.1 Receive, in total, less than 10,000 wet tons per year of any combination of biosolids, animal manure, or poultry litter; and

4.3.2 Are not intentionally conducting pathogen reduction on any biosolids, animal manure, or poultry litter at the facility; and

4.3.3 Are not subject to the regulations of the California Integrated Waste Management Board pertaining to solid waste transfer/processing or disposal; and

4.3.4 Do not receive or collect tipping fees.

4.4 Facilities that place all material containing un-composted biosolids, animal manure, or poultry litter in airtight bags or packages for sale or sell material containing biosolids, animal manure, or poultry litter as a soil amendment or fertilizer. Within 15 days of receipt, the biosolids, animal manure, or poultry litter must be placed in airtight bags or removed from the facility.

5.0 Requirements

5.1 Landfill Requirements

5.1.1 Within 24 hours of receipt at the facility, an operator that landfills biosolids, animal manure, or poultry litter shall cover the material with one of the following covers:

5.1.1.1 Six inches of finished compost, or

5.1.1.2 Six inches of soil, or

5.1.1.3 A waterproof covering, or

5.1.1.4 With the exception of biosolids or biosolids-derived material, an alternative material of alternative thickness as approved in California Code of Regulations, Title 27, Section 20690. Biosolids that have been through both the active and curing phases of the composting process are not considered biosolids or biosolids-derived material for the purposes of this requirement.

5.1.1.5 Operator shall not use biosolids or biosolids-derived material as alternative daily cover unless the operator has received an Authority to Construct authorizing such cover. At least 12 months prior to the intended use of such material as an alternative daily cover, an operator shall apply for a new or modified Permit to Operate and shall comply with all applicable Rule 2201 requirements including Best Available Control Technology (BACT), emission offsets, and public notification. In establishing BACT, the District must consider the use of alternate covers and all other available control technologies.

5.1.2 In lieu of covering the biosolids, animal manure, or poultry litter as in Section 5.1.1, an operator may implement an alternative mitigation measure that demonstrates at least a 10% reduction in VOC emissions.

5.2 Land Application Requirements

An operator that land-applies material containing biosolids, animal manure, or poultry litter shall implement at least one of the mitigation measures in Table 1.

Table 1 - Land Application Mitigation Measures	
1.	Directly inject the biosolids, animal manure, or poultry litter at least three inches (3") below the soil surface within three (3) hours of receipt at the facility.
2.	Land incorporate the biosolids, animal manure, or poultry litter within three (3) hours of receipt at the facility. Materials received after 6 pm must be land incorporated by noon of the following calendar day.
3.	Cover the biosolids, animal manure, or poultry litter within three (3) hours of receipt at the facility. The cover shall be one of the following: a waterproof cover; at least six (6) inches of finished compost; or at least six (6) inches of soil. When conditions are appropriate to allow direct injection or land incorporation of the covered material, the material shall be directly injected or land incorporated within three (3) hours of uncovering the material.
4.	Implement an alternative mitigation measure(s) not listed that demonstrates at least a 10% reduction in VOC emissions.

5.3 Composting/Co-composting Facility Requirements

5.3.1 Operators of composting/co-composting facilities with throughputs less than 20,000 wet tons per year shall meet either 5.3.1.1 or 5.3.1.2.

5.3.1.1 Implement at least three (3) of the Class One mitigation measures listed in Table 2.

5.3.1.2 Implement at least two (2) Class One mitigation measures in addition to one (1) Class Two mitigation measure for active composting.

5.3.2 Operators of composting/co-composting facilities with throughputs at least 20,000 wet tons per year but less than 100,000 wet tons per year shall meet either 5.3.2.1 or 5.3.2.2.

5.3.2.1 Implement at least four (4) of Class One mitigation measures listed in Table 2.

5.3.2.2 Implement at least three (3) Class One mitigation measures in addition to one (1) Class Two mitigation measure on active composting processes.

5.3.3 Operators of composting/co-composting facilities with throughputs at least 100,000 wet tons per year shall meet either 5.3.3.1 or 5.3.3.2.

5.3.3.1 Implement at least four (4) Class One mitigation measures in addition to one (1) Class Two mitigation measure for active composting.

5.3.3.2 Implement at least two (2) Class One mitigation measures, in addition to one (1) Class Two mitigation measure for active composting and one (1) Class Two mitigation measure for curing composting.

Table 2 – Composting/Co-composting Facility Mitigation Measures	
Class One Mitigation Measures	
1.	Scrape or sweep, at least once a day, all areas where compostable material is mixed, screened, or stored such that no compostable material greater than one inch (1") in height is visible in the areas scraped or swept immediately after scraping or sweeping, except for compostable material in process piles or storage piles.
2.	Maintain a minimum oxygen concentration of at least five percent (5%), by volume, in the free air space of every active and curing compost pile.
3.	Maintain the moisture content of every active and curing compost pile between 40% and 70%, by weight.
4.	Manage every active pile such that the initial carbon to nitrogen ratio of every pile is at least twenty (20) to one (1).
5.	Cover all active compost piles within 3 hours of each turning with one of the following: a waterproof covering; at least six (6) inches of finished compost; or at least six (6) inches of soil.
6.	Cover all curing compost piles within 3 hours of each turning with one of the following: a waterproof covering; at least six (6) inches of finished compost; or at least six (6) inches of soil.
7.	Implement an alternative Class One mitigation measure(s) not listed above that demonstrates at least a 10% reduction, by weight, in VOC emissions.
Class Two Mitigation Measures	
8.	Conduct all active composting in aerated static pile(s) vented to a VOC emission control device with a VOC control efficiency of at least 80% by weight.
9.	Conduct all active composting in an in-vessel composting system vented to a VOC emission control device with a VOC control efficiency of at least 80% by weight.
10	Conduct all curing composting in aerated static pile(s) vented to a VOC emission control device with a VOC control efficiency of at least 80% by weight.
11	Conduct all curing composting in an in-vessel composting system vented to a VOC emission control device with a VOC control efficiency of at least 80% by weight.
12.	Implement an alternative Class Two mitigation measure(s) not listed above that demonstrates at least 80% reduction, by weight, in VOC emissions.

5.3.4 Operators selecting oxygen concentration or moisture content as a mitigation measure shall test each active compost pile and each curing compost pile at least once each week using the applicable test methods in Section 6.2.2, unless the APCO and EPA determine, based on the weekly test results, that a different testing frequency is warranted to ensure compliance.

5.3.5 For operators selecting initial carbon to nitrogen ratio as a mitigation measure shall test the material when it is prepared for active composting using the applicable test method in Section 6.2.2. Testing shall be done each day that materials are mixed. Samples shall be representative of the initial composition of the active compost pile.

5.3.6 If a tested parameter is found to be outside the applicable limits specified in Table 2, the operator shall take remedial action within 24 hours of discovery to bring pile characteristics within the specified limits.

5.4 VOCs from Aerated Static Piles and In-Vessel Systems

5.4.1 In addition to the requirements of Section 5.3, an aerated static pile shall have no measurable increase (< 0.45 ppmv increase) over background levels of hydrocarbons within three feet of any surface of the aerated static pile.

5.4.2 In addition to the requirements of Section 5.3, an in-vessel composting operation shall have no measurable increase (< 0.45 ppmv increase) over background levels of hydrocarbons outside the in-vessel enclosure, including any opening that occurs briefly for access or maintenance.

5.4.3 An operator shall test for VOCs once each calendar quarter.

5.4.3.1 The location and number of test points for aerated static pile composting system shall be determined using TMECC 02.01-B (Selection of Sampling Locations for Windrows and Piles).

5.4.3.2 The openings of an in-vessel composting system shall be tested according to the test method specified in Section 6.2.3.2.

5.4.3.3 The hydrocarbon analyzer shall meet the requirements specified in Section 6.2.4.2.

5.4.4 In lieu of complying with the applicable requirements of Sections 5.4.1 or 5.4.2, an operator may monitor one or more alternative parameters. The operator must demonstrate, to the satisfaction of the APCO and EPA, that the alternative parameter(s) correlates to the composting system capturing as much of the VOC emissions as technologically practical.

5.4.5 In lieu of complying with the requirements of Section 5.4.3, an operator may use a different analyzer or test on a different schedule if the operator demonstrates, to the satisfaction of the APCO and EPA, that the alternate analyzer or alternate schedule is as indicative of system performance as the requirements Section 5.4.3.

5.5 Biofilter Requirements:

5.5.1 In addition to complying with the applicable requirements of Section 5.3, an operator using a biofilter as a VOC emission control device shall maintain all biofilters at their facility in such a manner that each biofilter complies with the following conditions at all times when it is in operation:

5.5.1.1 The biofilter media temperature is between 70 degrees Fahrenheit and 110 degrees Fahrenheit,

5.5.1.2 The moisture content of the biofilter media is between 40.0% and 70.0% by weight.

5.5.1.3 The pH of the biofilter media is between 6.5 and 8.0.

5.5.1.4 Visual inspection - The biofilter media is free of observable rodent burrows, cracks, and channeling. Weed coverage shall be less than 10% of the exposed surface of the biofilter.

5.5.2 Biofilter Monitoring Schedule

5.5.2.1 The biofilter media shall be tested for the following properties at least once per calendar month in five separate, evenly spaced locations throughout the biofilter: temperature, moisture, and pH.

5.5.2.2 Visual inspection of biofilter media shall be performed at least once each week.

5.5.3 In lieu of complying with the requirements of Section 5.5.1, an operator may be held to a different range of values or monitor alternative parameter(s) if the operator demonstrates, to the satisfaction of the APCO and EPA, that the range of values or alternate parameter(s) is as indicative of system performance as the applicable requirements Section 5.5.1. The alternate range of the parameters listed in 5.5.1 or alternate monitoring parameter can be demonstrated by a source test.

5.5.4 In lieu of complying with the requirements of Section 5.5.2, an operator may monitor on a different schedule if the operator demonstrates, to the satisfaction of the APCO and EPA, that alternate schedule is as indicative of system performance as the schedule in Section 5.5.2.

5.5.5 An operator using approved alternative parameter(s) from Section 5.5.3 shall also demonstrate the monitoring frequency for the alternative

parameter(s) as indicated in Section 5.5.4 is adequate to ensure rule compliance.

5.6 Non-Biofilter VOC Emission Control Device Requirements

5.6.1 In addition to the applicable requirements of Sections 5.3 and 5.4, an operator using a VOC emission control device that is not a biofilter shall monitor key system operating parameters that demonstrate continuous operation and compliance of the VOC emission control device during composting operations. Examples of key system operating parameters include, but are not limited to, temperatures, pressures, and flow rates.

5.6.2 In addition to the applicable requirements of Sections 5.3 and 5.4, operators using a VOC emission control device that is not a biofilter shall operate and maintain the VOC emission control device in accordance with the manufacturer's recommendations and any additional operating and maintenance standards determined necessary by the APCO, ARB, and EPA to ensure proper operation of the VOC control device.

5.7 Source Testing Requirements for VOC Emission Control Device

5.7.1 The VOC emission control device (biofilter or non-biofilter) shall be tested for VOC control efficiency within ninety days of installation and every two years thereafter. VOC emission control devices with an active Permit-to-Operate on March 15, 2007 shall be tested for VOC control efficiency on or before September 30, 2007, and every two years thereafter.

5.7.2 The source test must be conducted under representative operating conditions with respect to seasonal conditions, compost composition, process throughput, processing of materials, and pile geometries.

5.7.3 An operator of a biofilter may request a longer time between installation and source test if the operator shows, to the satisfaction of the APCO and EPA, that a longer time is necessary. In no case shall the time between installation and the source test be greater than six (6) months.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 Exempt Operations Records

6.1.1.1 Operators claiming exemption under Section 4.0 shall maintain records to demonstrate that the operation meets all of the conditions of the claimed exemption.

6.1.1.2 Except for throughput records, records documenting claim of exemption shall be retained until two years after loss of exemption.

6.1.1.3 Throughput records demonstrating claim of exemption shall be retained according to Section 6.1.8.

6.1.2 Landfill Records

An operator subject to this rule that landfills biosolids, animal manure, or poultry litter shall maintain an operations log. In the operations log, the operator shall record the following information on a daily basis:

6.1.2.1 The time at which the biosolids, animal manure, or poultry litter arrives on site; and

6.1.2.2 The quantity of biosolids, animal manure, or poultry litter received; and

6.1.2.3 The time at which the received material is completely covered as described in the mitigation measures or the time at which the alternate mitigation measure is in place.

6.1.3 Land Application Records

An operator subject to this rule that land applies any combination of biosolids, animal manure, or poultry litter shall maintain an operations log. In the operations log, the operator shall record the following information on a daily basis:

6.1.3.1 The time at which the biosolids, animal manure, or poultry litter arrives on site; and

6.1.3.2 The quantity of biosolids, animal manure, or poultry litter received; and

6.1.3.3 Other information necessary to determine compliance with the selected mitigation measures.

6.1.4 Composting Facility Records

An operator of a composting facility subject to this rule shall keep the following records:

6.1.4.1 Throughput Records

On a daily basis, an operator shall record the quantity of materials received that would be used in the compost/co-compost operation. These materials include, but are not limited to, material that may be recovered from the composting process for reuse in another batch of compostable material; biosolids; animal manure; poultry litter; and green waste.

6.1.4.2 Class One Mitigation Measure Records

An operator shall keep records that demonstrate that the facility meets the Class One mitigation measures selected for the facility each day that a mitigation measure is performed. For operators using an approved alternative Class One mitigation measure, the operator shall keep records for the alternative mitigation measure each day the alternative mitigation measure is performed.

6.1.4.3 Class Two Mitigation Measure Records

An operator shall keep records according to 6.1.5 through 6.1.7, as applicable, for the composting operations subject to Class Two mitigation measures.

6.1.5 VOC Inspection Records

The operator shall maintain an inspection logbook. The following information shall be contained in the logbook:

6.1.5.1 The date of the VOC inspection.

6.1.5.2 The reading of the portable hydrocarbon analyzer in ppmv for each inspection location.

6.1.5.3 If an alternate parameter is monitored, list the parameter monitored and record the level of the alternate parameter for each inspection location.

6.1.6 Biofilter Records

In addition to the records required in Section 6.1.4, an operator using a biofilter as a VOC emission control device shall keep records with the following information:

6.1.6.1 Date of biofilter monitoring.

6.1.6.2 The parameter monitored and the test results for the parameter monitored.

6.1.6.3 If an alternate parameter is monitored, list the parameter monitored and record the level of the alternate parameter for each location.

6.1.7 Non-Biofilter VOC Emission Control Device Records

6.1.7.1 An operator using a VOC emission control system that is not a biofilter as a means of complying with this rule shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the VOC emission control system during composting operations. Examples of key system operation parameters include, but are not limited to, temperature, pressure, and flow rates.

6.1.7.2 An operator using a VOC emission control device that is not a biofilter shall keep records describing all maintenance work on the VOC emission control system.

6.1.8 Records Retention

Unless otherwise specified in this section, the operator shall retain the applicable records specified in this section on-site for a period of five years, make the records available on-site during normal business hours to the APCO, ARB, or EPA, and submit the records to the APCO, ARB, or EPA upon request.

6.2 Test Methods

6.2.1 Compost Maturity/Stability

Any of the following test methods:

6.2.1.1 TMECC Method 05-08-B (Carbon Dioxide Evolution Rate); or

6.2.1.2 TMECC Method 05-08-E (Solvita Maturity Test®).

6.2.2 Composting Facility Class One Mitigation Measure Test Methods

6.2.2.1 Oxygen Concentration – TMECC Method 05.08-C (In-Situ Oxygen Refresh Rate)

6.2.2.2 Moisture Content - TMECC Method 03.09 (Total Solids and Moisture at 70±5 degrees Centigrade)

6.2.2.3 Carbon to Nitrogen Ratio - TMECC Method 05.02-A (Carbon to Nitrogen Ratio)

6.2.3 Composting Facility Class Two Mitigation Measure Test Methods

6.2.3.1 Biofilter Control Efficiency

The control efficiency of a biofilter shall be determined using SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources). The SCAQMD 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. Samples from more than one location may be combined (composited) per SCAQMD Rule 1133.2 Attachment A Section 8.

6.2.3.2 VOC Emission Control Device (Non-Biofilter) Control Efficiency

The control efficiency of a VOC emission control system shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.2.4 VOC Test Method

6.2.4.1 Test Method – EPA Method 21 (VOC Leaks)

6.2.4.2 Hydrocarbon Analyzer – The portable hydrocarbon analyzer shall be:

6.2.4.2.1 A flame ionization detector.

6.2.4.2.2 Operated per manufacturer’s instructions.

6.3.4.2.3 Calibrated with certified zero and 10 ppmv methane standards.

6.2.5 Biofilter Test Methods

6.2.5.1 Temperature – EPA Method 170.1 (Temperature – Thermometric)

6.2.5.2 Moisture Content - TMECC Method 03.09 (Total Solids and Moisture at 70±5 degrees Centigrade)

6.2.5.3 Media pH - TMECC Method 04.11-A (1:5 Slurry pH)

6.2.5.4 VOC – EPA Method 21 (VOC Leaks)

6.2.5.5 Hydrocarbon Analyzer for VOCs – The portable hydrocarbon analyzer shall be:

6.2.5.5.1 A flame ionization detector.

6.2.5.5.2 Operated per manufacturer's instructions.

6.3.5.5.3 Calibrated with certified zero and 10 ppmv methane standards.

6.2.6 Alternative Test Methods

An operator may use an alternative test method to those listed in Sections 6.2.1 through 6.2.5 for which written approval of the APCO and EPA has been obtained.

6.2.7 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.

6.3 Alternative Mitigation Measures Compliance Plan

6.3.1 A compliance plan for alternative mitigation measures shall contain the following elements:

6.3.1.1 The name(s), address(es) and telephone number(s) of person(s) responsible for the preparation, submittal, and implementation of the compliance plan;

6.3.1.2 The name, address, and telephone number(s) of the facility for which the compliance plan is being prepared;

6.3.1.3 A description and process diagram of the operation;

6.3.1.4 A complete description of the control method(s) that will be used in place of a listed mitigation method;

6.3.1.5 All data, calculations methodology, calculations, records, manufacturer specifications, and all other information necessary to determine that proposed mitigation measure will achieve the required emission reductions;

6.3.1.6 Methodology and calculations establishing the daily and annual VOC emissions or projected VOC emissions. Unless the operator establishes an operation-specific baseline emission factor per Section 6.3.1.7, an emission factor of 1.78 pounds VOC emissions per wet ton of material shall be used;

6.3.1.7 If applicable, a source test protocol developed in accordance with the requirements of Section 6.2.2, to establish operation-specific baseline emission factors;

6.3.1.8 A source testing protocol developed in accordance with the requirements of Section 6.2.2 to demonstrate compliance with the emission reductions proposed;

6.3.1.9 An identification of all equipment needing permits to construct and operate.

6.3.2 In evaluating the compliance plan, the APCO and EPA may require tests and sampling, as necessary, to determine the adequacy of the compliance plan and the likelihood of compliance with the emission reduction requirements.

6.3.3 The APCO and EPA may approve operation-specific baseline emissions factors provided the baseline emissions factors are substantiated with source test data obtained in accordance with Section 6.2 of this rule and the material and mixtures of materials is representative of normal operations.

6.3.4 The APCO and EPA shall provide interim approval of the compliance plan provided the operator submits all of the information required under Section 6.3.1 and the APCO and EPA verifies that, by design, the compliance plan will reduce emissions similar to or greater than listed mitigation measures.

6.3.5 Following the interim approval of the compliance plan, the APCO and EPA shall approve the compliance plan provided the operator submits, no later than 180 days after the effective date of compliance, a certification of the compliance report that includes all source test data, and the APCO and EPA verifies that the emissions from the mitigation measure meets the emission reduction limits.

6.3.6 The APCO and EPA may impose conditions necessary to ensure that the operation complies with the compliance plan and all applicable District rules.

6.3.7 The APCO and EPA may require the operator to maintain records consistent with the compliance plan necessary to demonstrate compliance with the compliance plan.

6.3.8 Compliance with the provision of the approved proposal does not exempt an operator from complying with the requirements of the California Health and Safety Code or any other District rule.

7.0 Compliance Schedule

7.1 Landfill Operations

On and after March 15, 2008, all landfill operations shall be in full compliance with all applicable rule requirements.

7.2 Land Application Operations

7.2.1 On and after March 15, 2008, all land application operations with usage of biosolids, animal manure, or poultry litter totaling 100,000 wet tons per year or less shall be in full compliance with all applicable rule requirements.

7.2.2 On and after September 15, 2008, all land application operations with usage of biosolids, animal manure, or poultry litter totaling more than 100,000 wet tons per year shall be in full compliance with all applicable rule requirements.

7.3 Composting/Co-composting Operations

7.3.1 On and after September 15, 2008, operators of compost/co-compost facilities with throughputs less than 100,000 wet tons per year shall be in full compliance with all applicable rule requirements.

7.3.2 On and after March 15, 2010, operators of compost/co-compost facilities with throughput of at least 100,000 wet tons per year shall be in full compliance with all applicable rule requirements.

7.4 Operators of compost/co-composting facilities with throughput of at least 100,000 wet tons per year planning to convert composting/co-composting operations to energy generation operations shall comply with Sections 7.4.1 through 7.4.4. For purposes of this compliance schedule, energy generation operations are those operations that use biosolids, animal manure, or poultry litter as fuel for equipment to generate electricity.

7.4.1 On or before March 15, 2008, the operator shall file an Authority to Construct (ATC) application and an "Emission Control Plan" containing information to support the extended compliance schedule, including, but not limited to, the following:

7.4.1.1 All data, calculations methodology, calculations, records, manufacturer specifications, and all other information necessary to determine the percent of composting/co-composting operations converted to energy generation. The percent of composting operations converted shall be calculated using the following equation.

$$\% \text{ converted} = \frac{(W_{energy})}{(W_{current})} \times 100$$

Where

% converted = the estimated percent of current compost/co-compost operations that would be converted to energy generation operations (%)

W_{energy} = the estimated throughput of biosolids, animal manure or poultry litter and other materials used in energy generation operations (wet tons/year)

$W_{current}$ = the highest recorded annual throughput based on the calendar years 2002 through 2006 (wet tons/year)

7.4.1.2 All data, calculations methodology, calculations, records, manufacturer specifications, and all other information necessary

to determine that the proposed energy generation operation will achieve VOC emission reductions of at least 96% by weight compared to the uncontrolled emissions from composting/co-composting;

7.4.1.3 Methodology and calculations establishing the daily and annual VOC emissions or projected VOC emissions;

7.4.1.4 If applicable, a source test protocol developed in accordance with the requirements of Section 6.2.2, to establish operation-specific baseline emission factors.

7.4.1.5 A source testing protocol developed in accordance with the requirements of Section 6.2.2 to demonstrate compliance with the emission reductions proposed.

7.4.1.6 A demonstration, subject to approval by the APCO and EPA, that the energy generation project will reduce VOC emissions by at least 96% by weight compared to the uncontrolled emissions from composting/co-composting. The project shall demonstrate a net air quality benefit with respect to particulate matter and ozone formation, after accounting for any increases in oxides of nitrogen (NOx) emissions from the project.

7.4.2 If the percent converted to energy generation operations in Section 7.4.1.1 is less than 100%, the unconverted composting/co-composting operations shall be in compliance with all provisions of the rule by the compliance schedule in Section 7.3.1 or Section 7.3.2, as appropriate; and

7.4.3 On and after September 15, 2008, the operator shall implement four (4) Class One mitigation measures from Table 2 for all compost/co-compost operations that would be converted to energy generation operations. These mitigation measures shall remain in place until 7.4.4 is implemented or the compost/co-compost operations are converted to energy generation operations, whichever comes first; and

7.4.4 On and after September 15, 2012, the operator shall implement three Class One mitigation measures and operated in-vessel composting systems, for both the active and curing phases of composting of all composting/co-composting operations, at the facility, that were originally planned for conversion to energy generation operations but that have not been converted. The in-vessel systems shall be vented to a VOC control system with a control efficiency of at least 90% by weight and complies with Section 5.4 of this rule.

7.4.5 Compliance with the provision of the approved proposal does not exempt an operator from complying with the requirements of the California Health and Safety Code or any other District rule.

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RULE 4566 ORGANIC MATERIAL COMPOSTING OPERATIONS (Adopted August 18, 2011)

1.0 Purpose

The purpose of this rule is to limit emissions of volatile organic compounds (VOC) from composting operations.

2.0 Applicability

The provisions of this rule apply to composting facilities that compost and/or stockpile organic material.

3.0 Definitions

3.1 Active Phase: the phase of the composting process that begins when organic materials are mixed or piled together for composting and ends when any of the following conditions is met:

3.1.1 The organic material has been composted for a period of 22 consecutive days;

3.1.2 The organic material respiration rate is no more than 20 milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry using the TMECC Method 05-08-A – Specific Oxygen Uptake Rate (April 7, 2002);

3.1.3 The organic material emits no more than seven (7) mg carbon dioxide per gram of organic material (CO_2-C) per day, as measured using the TMECC Method 05-08-B – Carbon Dioxide Evolution Rate (April 7, 2002); or

3.1.4 The organic material has a Solvita® Maturity Index of five (5) or greater as measured using the TMECC Method 05-08-E – Solvita® Maturity Test (April 7, 2002).

3.2 Agricultural Composting: composting of agricultural materials at an agricultural operation site, which were generated on site and will be used on site.

3.3 Agricultural Material: vegetative materials that are produced wholly from agricultural operations; the operation or maintenance of a system for the delivery of water in agricultural operations; or material not produced wholly from agricultural operations, but that are essential to agricultural operations.

3.4 Agricultural Operations: operations primarily involved with the growing, harvesting, and packing of crops; the raising of fowl or animals for the primary purpose of earning a living; or conducting agricultural research or instruction by an educational institution.

3.5 Air Pollution Control Officer (APCO): the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District.

3.6 Alternative Mitigation Measure: a mitigation measure proposed by an operator, as a means of complying with the rule requirements, that is determined by the APCO to achieve VOC reductions that are equal to or greater than the VOC reductions that would be achieved by other mitigation measures listed in this rule.

3.7 Animal Manure: non-human animal excretions and waste, including, but not limited to, solids and urine from cows, cattle, or swine.

3.8 Biosolids: organic material resulting from the treatment of sewage sludge or wastewater.

3.9 Community Composting: composting conducted by a residential neighborhood association using feedstock generated within the residential neighborhood to produce compost for the neighborhood's use.

3.10 Compost: a product resulting from the biological decomposition of organic material.

3.11 Compostable Material: organic material that is capable of undergoing the composting process.

3.12 Composting: a process in which solid organic waste materials are decomposed in the presence of oxygen through the action of bacteria and other microorganisms.

3.13 Composting Facility: a facility that is required to obtain a District permit for composting operations in accordance with Rule 2010 (Permits Required) which are not specifically exempt pursuant to Rule 2020 (Exemptions) or a Compostable Materials Handling Facility Permit in accordance with Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 2, Section 17857.1.

3.14 Composting Operation: composting, screening, chipping and grinding, and storage activities related to the production of compost from organic materials or chipped and ground organic materials at a composting facility.

3.15 Contiguous or Adjacent Property: a property consisting of two or more parcels of land with a common point or boundary, or separated solely by a public roadway or other public right-of-way.

3.16 Curing Phase: the phase of the composting process that begins immediately after the active phase and ends when any of the following conditions is met:

3.16.1 The organic material has been composted for a period of 40 consecutive days after the active phase;

3.16.2 The organic material respiration rate is no more than 10 milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry using the TMECC Method 05-08-A – SOUR: Specific Oxygen Uptake Rate (April 7, 2002);

3.16.3 The organic material emits no more than four (4) mg CO_2-C per gram of organic material per day, as measured using the TMECC Method 05-08-B – Carbon Dioxide Evolution Rate (April 7, 2002); or

3.16.4 The organic material has a Solvita® Maturity Index of seven (7) or greater, as measured using the TMECC Method 05-08-E – Solvita® Maturity Test (April 7, 2002).

3.17 Day: a continuous twenty-four hour period beginning at 12:00 A.M.

3.18 District: the San Joaquin Valley Unified Air Pollution Control District including Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties, and the San Joaquin Valley Air Basin portion of Kern County.

3.19 Facility: a portion of real property that is on one or more contiguous or adjacent properties all of which are under common ownership or control.

3.20 Finished Compost: a humus-like material that has completed both the active phase and curing phase of composting.

3.21 Finished Compost Cover: pre-screened finished compost, or a mixture of screened finished compost or overs, that is applied to a windrow or pile as a cover to reduce VOC emissions.

3.22 Food Material: food scraps collected from the food processing industry, food service industry, grocery stores, or residential food scrap collection. Food material also includes food material that is chipped or ground.

3.23 Green Material: vegetative material generated from gardening, agriculture, or landscaping activities including, but not limited to, a mixture of grass clippings, leaves, tree and shrub trimmings, and plant remains.

3.24 Household Composting: composting conducted by a household, including but not limited to, single family residences, duplexes or apartment buildings, using organic materials that are generated on site to produce compost that will be used on site.

3.25 Independent Watering System: a system connected to a water source that uniformly applies water by means of nozzles operated under pressure and may include, but is not limited to, portable sprinkler system, non-portable sprinkler system, or water truck.

3.26 Integrated Watering System: a system connected to a water source that uniformly applies water by means of nozzles operated under pressure which are installed in front of or simultaneously with the mechanical turner blades.

3.27 Mitigation Measure: an activity, work practice, or technology that reduces VOC air pollutants emitted by or associated with the processing of organic material.

3.28 Nursery Composting: composting conducted at a plant nursery using materials generated on site to produce compost for on-site use.

3.29 Operator: a person who owns, leases, supervises, or operates a composting facility that conducts a composting operation on site.

3.30 Organic Material: food material, green material, or a mixture thereof, and may include wood material and a total of less than 100 wet tons per year of biosolids, animal manure, or poultry litter.

3.31 Overs: the oversized woody materials that have been through pathogen reduction, do not decompose in a typical composting cycle, and are screened out of finished product at the end of composting.

3.32 Pathogen Reduction: a process conducted entirely or in part to reduce the number of disease-causing organisms present in organic material in accordance with Title 14 Chapter 3.1 Division 7 Section 17868 of the California Code of Regulations.

3.33 Peak: the highest point along the ridge of the windrow.

3.34 Pile: compostable material that is heaped together.

3.35 Poultry Litter: poultry excretions and waste, including, but not limited to, dried solids and urine from chickens, turkeys, geese, or ducks.

3.36 Process: the conversion of the organic material into a beneficial material or use.

3.37 Rain Event: for the purpose of this rule, precipitation at a composting facility.

3.38 Recreational Facilities Composting: composting conducted at parks, arboretums and other recreational facilities using feedstock generated on site to produce compost for on-site use.

3.39 Ridge: the narrow upper section of a windrow with sloping sides.

3.40 Solvita® Maturity Index: an index that defines the stage where compost exhibits resistance to further decomposition, in accordance with the TMECC Method 05-08-E – Solvita® Maturity Test (April 7, 2002).

3.41 Stockpile: organic material, which may or may not be chipped or ground, that is temporarily stored in a pile for further processing.

3.42 Test Methods for the Examination of Composting and Compost (TMECC): test methods for the examination of composting and compost by the US Composting Council Research and Education Foundation.

3.43 Throughput: the weight of organic material to be processed, as it is received or generated at a facility, prior to dewatering or treatment at the receiving location. Throughput includes the weight of moisture present in the organic material at the time it is received at the facility.

3.44 US Environmental Protection Agency (EPA): the United States Environmental Protection Agency or any person authorized to act on its behalf.

3.45 Vertical Midpoint: the point that divides the peak of the windrow from the bottom of the windrow.

3.46 Volatile Organic Compounds (VOC): as defined in Rule 1020 (Definitions).

3.47 Windrow: organic material that is placed in an elongated pile for composting.

3.48 Wood material: untreated lumber and the woody-material portion of mixed-demolition wastes and mixed-construction wastes. Wood material also includes overs, and the woody material portion of trees. Wood material or wood material chips to which other organic material has been added are not considered to be wood material.

3.49 Year: a continuous, 12-month period beginning on January 1 and ending on December 31.

4.0 Exemptions

4.1 Stockpiling of Organic Material

4.1.1 Facilities that stockpile organic material on site and are not considered to be a composting facility are exempt from all requirements of this rule.

4.1.2 Stockpiles used for composting operations that are subject to Rule 4565 (Biosolids, Animal Manure, and Poultry Litter Operations) and have organic material and biosolids, animal manure, or poultry litter on site are exempt from all stockpile requirements of this rule for the materials associated with those operations. Stockpiles destined for composting operations not subject to Rule 4565 are not exempted under this section.

4.1.3 The following materials are exempt from all requirements of this rule, provided that the material is not mixed with other types of organic materials and operators maintain records, as required by Section 6.3.1. For the purpose of this exemption, the throughput received or generated from any of the materials below shall not be added to or subtracted from the total throughput for composting operations.

4.1.3.1 Wood material, including wood material that is separated from organic material prior to complying with the stockpile requirements in Section 5.1;

4.1.3.2 Finished Compost;

4.1.3.3 Overs; and

4.1.3.4 Organic material that is specifically stockpiled on site for operations other than composting, provided that an operator is not intentionally conducting pathogen reduction on the organic material at the facility. Other operations include, but are not limited to, animal feed or nutritional products.

4.2 Composting Operations

4.2.1 The following composting operations are exempt from all requirements of this rule:

4.2.1.1 Composting operations that are subject to Rule 4565 (Biosolids, Animal Manure, and Poultry Litter Operations) are exempt from all requirements of this rule. Facilities with multiple types of composting operations are subject to the applicable requirements of Rule 4566 only for those composting operations not subject to Rule 4565 requirements;

4.2.1.2 Agricultural composting;

4.2.1.3 Community composting;

4.2.1.4 Household composting;

4.2.1.5 Nursery composting; and

4.2.1.6 Recreational facilities composting.

4.3 The following facilities are exempt from all requirements of this rule:

4.3.1 Facilities subject to Rule 4204 (Cotton Gins) and cotton ginning facilities that are specifically exempt from Rule 4204;

4.3.2 Agricultural operations subject to Rule 4550 (Conservation Management Practices) and agricultural operations that are specifically exempt from Rule 4550; and

4.3.3 Facilities subject to Rule 4570 (Confined Animal Facilities) and facilities that are specifically exempt from Rule 4570.

5.0 Requirements

5.1 Stockpile Requirements

5.1.1 An operator of a composting operation with a total throughput of less than 100,000 wet tons per year of organic material shall comply with one of the following within ten (10) days of receipt of the organic material at the facility:

5.1.1.1 Remove the organic material from the facility;

5.1.1.2 Start the active phase of composting;

5.1.1.3 Cover the organic material with a waterproof cover that have at least a six-feet (6') overlap of adjacent sheets and be securely anchored; or

5.1.1.4 Implement an APCO approved alternative mitigation measure, not listed above.

5.1.2 An operator of a composting operation with a total annual throughput of greater than or equal to 100,000 wet tons per year of organic material shall comply with one of the following within three (3) days of receipt of the organic material at the facility:

5.1.2.1 Remove the organic material from the facility;

5.1.2.2 Start the active phase of composting;

5.1.2.3 Cover the organic material with a waterproof cover that have at least a six-feet (6') overlap of adjacent sheets and be securely anchored; or

5.1.2.4 Implement an APCO approved alternative mitigation measure, not listed above.

5.2 Composting Requirements

5.2.1 An operator of a composting operation with a total throughput of less than 200,000 wet tons per year of organic material shall comply with Section 5.2.1.1 or Section 5.2.1.2 during the active phase of composting.

5.2.1.1 For windrow composting only, implement at least three turns during the active–phase and one of the mitigation measures for the Watering Systems in Table 1.

5.2.1.2 Implement an APCO and EPA approved alternative mitigation measure that demonstrates at least a 19% reduction, by weight, in VOC emissions.

5.2.2 An operator of a composting operation with a total throughput of greater than or equal to 200,000 wet tons per year and less than 750,000 wet tons per year of organic material shall comply with Section 5.2.2.1 or Section 5.2.2.2 during the active phase of composting.

5.2.2.1 For windrow composting only, implement all of the following:

5.2.2.1.1 At least three turns during the active phase;

5.2.2.1.2 One of the mitigation measures for the Watering Systems in Table 1; and

5.2.2.1.3 The Finished Compost Cover mitigation measure.

5.2.2.2 Implement an APCO and EPA approved alternative mitigation measure that demonstrates at least 60% reduction, by weight, in VOC emissions.

Table 1 – Composting Mitigation Measures

Watering Systems	
1	Independent watering system a. Apply water to the surface area of each windrow prior to turning. Test each windrow within three hours before turning for adequate water by taking a sample of the compostable material from between the vertical midpoint and the peak of the windrow, at least three inches below the outer surface. For the ball test, form the material into a ball using hand pressure. There should be at least enough water to form a ball when compressed by hand, but the ball may break when tapped. b. If the ball crumbles during the hand pressure test, apply additional water to the windrow prior to turning until the material passes the ball test, as described in Section 1.a.
2	Integrated watering system a. For windrows that will be turned on the same day and will require the same water volume, mechanically turn the first windrow while operating the integrated watering system. Within three hours after turning the first windrow, take a sample of the compostable material from between the vertical midpoint and the peak of the windrow, at least three inches below the outer surface. For the ball test, form the material into a ball using hand pressure. There should be at least enough water form a ball when compressed by hand, but the ball may break when tapped. b. If the ball crumbles during the hand pressure test, apply additional water and mechanically turn the same windrow, then retest until the material passes the ball test. Subsequent windrows shall not be turned until the initial windrow passes the ball test. Utilize the established water volume for the remaining windrows to be turned with the same water volume on the same day. Repeat the methods in Section 2.a. for windrows that will be turned with a different water application rate.
• For either the independent or integrated watering systems, if a rain event occurs prior to turning the windrow, take a sample of the compostable material from between the vertical midpoint and the peak of the windrow within three hours before turning and at least three inches below the outer surface. Form the material into a ball using hand pressure. There should be at least enough water to form a ball when compressed by hand, but the ball may break when tapped. • If the ball crumbles during the hand pressure test, apply additional water to the windrow prior to turning until the material passes the ball test.	

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Table 1 – Composting Mitigation Measures (continued)
Finished Compost Cover
An operator shall cover the surface area of at least the top third of each windrow with finished compost cover so that there is at least six inches in height of finished compost cover as measured at the peak of each windrow. An operator shall cover the surface area of each windrow as described within three hours of initial windrow formation and within three hours after each turning of the windrow for at least three turns of each windrow. For any windrows that are mechanically turned after 2:00 pm, an exception to the three hour limit can be made, which allows the operator to cover the surface area of at least the top third of each windrow with finished compost cover by 12:00 pm the following day.

5.2.3 An operator of a composting operation with a total throughput of greater than or equal to 750,000 wet tons per year of organic material shall implement an APCO and EPA approved mitigation measure that demonstrates at least 80% reduction, by weight, in VOC emissions for organic material during the active phase.

6.0 Administrative Requirements

6.1 Facility Emission Mitigation Plan

An operator shall submit a Facility Emission Mitigation Plan (FEMP) along with an Authority-to-Construct application, in accordance with Rule 2010 (Permits Required), to incorporate the approved mitigation measures from the facility's FEMP as applicable permit conditions. The FEMP shall contain the following information:

6.1.1 The name, business address, and phone number of an operator(s) responsible for the preparation and the implementation of the mitigation measures listed in the mitigation plan;

6.1.2 The signature of an operator(s) attesting to the accuracy of the information provided and adherence to implementing the activities specified in the mitigation plan at all times and the date that the application was signed;

6.1.3 A list of the mitigation measures chosen from the applicable portions of Section 5.0 to comply with Rule 4566 requirements. In lieu of implementing the listed mitigation measures in Section 5.0, an operator may demonstrate that reductions from composting operations subject to this rule are equal to that which the compliance with those sections would have achieved; and

6.1.4 The total throughput, in wet tons per year, of organic material stockpiled and composted.

6.2 Alternative Mitigation Measures Compliance Plan

6.2.1 A compliance plan for alternative mitigation measures shall contain the following elements:

6.2.1.1 The name(s), address(es) and telephone number(s) of person(s) responsible for the preparation, submittal, and implementation of the compliance plan;

6.2.1.2 The name, address, and telephone number(s) of the facility for which the compliance plan is being prepared;

6.2.1.3 A description and process diagram of the operation;

6.2.1.4 A complete description of the control method(s) that will be used in place of a listed mitigation method;

6.2.1.5 All data, calculations methodology, calculations, records, manufacturer specifications, and all other information necessary to determine that proposed mitigation measure will achieve the required emission reductions;

6.2.1.6 Methodology and calculations establishing the daily and annual VOC emissions or projected VOC emissions. An operator may use the District's established baseline emission factors or establish operation-specific baseline emission factors. The baseline emission factors used shall be part of the compliance plan submittal. An operator shall demonstrate that the operation-specific baseline emission factors are representative of uncontrolled operations; and

6.2.1.7 An identification of all equipment needing District permits to construct and operate.

6.2.2 In evaluating the compliance plan, the APCO may require tests and sampling, as necessary, to determine the adequacy of the compliance plan and the likelihood of compliance with the emission reduction requirements.

6.2.3 The APCO may approve operation-specific baseline emissions factors provided the baseline emissions factors are substantiated with source test data that is approved by the APCO and the material and mixtures of material is representative of normal operations.

6.2.4 The APCO shall provide interim approval of the compliance plan provided an operator submits all of the information required under Section 6.2.1 and the APCO verifies that, by design, the compliance plan will reduce emissions similar to or greater than listed mitigation measures and requirements.

6.2.5 Following the interim approval of the compliance plan, the APCO shall approve the compliance plan provided an operator submits, no later than 180 days after the effective date of compliance, a certification of the compliance report that includes all source test data, and the APCO verifies that the emissions from the mitigation measure and requirements meets the emission reduction limits.

6.2.6 The APCO may impose conditions necessary to ensure that the operation complies with the compliance plan and all applicable District rules.

6.2.7 The APCO may require an operator to maintain records consistent with the compliance plan necessary to demonstrate compliance with the compliance plan.

6.2.8 Compliance with the provision of the approved proposal does not exempt an operator from complying with the requirements of the California Health and Safety Code or other District rules.

6.3 Recordkeeping Requirements

6.3.1 Records for Exempt Organic Materials

An operator claiming exemption pursuant to Section 4.1.3 shall record all of the following information on a quarterly basis:

6.3.1.1 The amount (in wet tons) and type of organic material received on site; and

6.3.1.2 Other information necessary to determine compliance with the requirements.

6.3.2 Throughput Records

An operator of a composting facility subject to this rule shall maintain an operations log. In the operations log, an operator shall record all of the following information on a daily basis:

6.3.2.1 The date the organic material arrives on site;

6.3.2.2 The type of organic material received on site; and

6.3.2.3 The weight (in wet tons) of each type of organic material received on site.

6.3.3 Stockpile Operations

An operator of a composting facility subject to the stockpile requirements shall maintain an operations log. In the operations log, an operator shall record all of the following information on a daily basis:

6.3.3.1 The date of which each stockpile was initially formed;

6.3.3.2 The date and action taken on each stockpile to satisfy the stockpile requirements; and

6.3.3.3 Other information necessary to determine compliance with the requirements.

6.3.4 Composting Operations

An operator of a composting facility subject to the composting requirements shall maintain an operations log. In the operations log, an operator shall comply with all of the following applicable recordkeeping requirements.

6.3.4.1 Watering Systems

6.3.4.1.1 Record the date and time the organic material from the windrow was tested for compliance.

6.3.4.1.2 Indicate whether the windrow passes the ball test and, if applicable, all corrective actions taken.

6.3.4.1.3 Record the date and time the windrow was turned.

6.3.4.1.4 Record other information necessary to determine compliance with the requirements.

6.3.4.2 Finished Compost Cover

6.3.4.2.1 Record the date and time each windrow was initially formed for the active phase and the time when finished compost cover, which satisfied the minimum six inches finished compost cover requirement, was applied to each windrow.

6.3.4.2.2 Record the date and time each windrow was turned during the active phase and the time when finished compost cover, which satisfied the minimum six inches finished compost cover requirement, was applied to each windrow.

6.3.4.2.3 Record other information necessary to determine compliance with the requirements.

6.3.4.3 Alternative Mitigation Measure Records

For operators using an approved alternative mitigation measure, an operator shall keep records needed to demonstrate compliance with the specific alternative mitigation measure each day the alternative mitigation measure is performed.

6.3.5 Records Retention

An operator shall retain all applicable records, as specified in this Recordkeeping Requirements section, on site for a period of five (5) years and the records shall be made available to the APCO upon request.

6.4 Test Methods

6.4.1 Compost Maturity/Stability

An operator shall use one of the following test methods, as provided by the Test Methods for the Examination of Composting and Compost (TMECC), to test compost maturity and stability:

6.4.1.1 TMECC Method 05-08-A – Specific Oxygen Uptake Rate (April 7, 2002);

6.4.1.2 TMECC Method 05-08-B – Carbon Dioxide Evolution Rate (April 7, 2002); or

6.4.1.3 TMECC Method 05-08-E – Solvita® Maturity Test (April 7, 2002).

6.4.2 Alternative Test Methods

An operator may use an alternative test method to satisfy rule requirements for which a written approval from the APCO and EPA have been obtained.

6.4.3 Multiple Test Methods

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

7.0 Compliance Schedule

7.1 Operators of a composting facility subject to the composting operation requirements of this rule shall submit a complete Facility Emission Mitigation Plan and Authority-to-Construct application that complies with all applicable requirements of this rule by the following dates:

Table 2: Compliance Schedule for Facility Emission Mitigation Plan (FEMP) and Authority-to-Construct (ATC) Application

Composting Requirements	Compliance Schedule
Watering system requirements or an APCO approved alternative mitigation measure that demonstrates at least 19% reduction, by weight, in VOC emissions.	February 18, 2012
Finished compost cover requirements, along with the watering system requirements. In lieu of complying with both of the finished compost cover and watering system requirements, implement an APCO approved alternative mitigation measure that demonstrates at least 60% reduction, by weight, in VOC emissions.	August 18, 2015
APCO approved mitigation measure that demonstrates at least 80% reduction, by weight, in VOC emissions for organic material during the active phase.	August 18, 2015

7.2 Stockpile Requirements

On and after August 18, 2012, operators of a composting operation subject to the stockpile requirements shall be in full compliance with all stockpile requirements.

7.3 Composting Requirements

7.3.1 On and after August 18, 2012, an operator of a composting operation with a total throughput of less than 200,000 wet tons per year of organic material shall be in full compliance with the applicable Watering Systems requirements or implement an APCO approved alternative mitigation measure that demonstrates at least 19% reduction, by weight, in VOC emissions.

7.3.2 An operator of a composting operation with a total throughput of greater than or equal to 200,000 wet tons per year and less than 750,000 wet tons per year of organic material shall be in compliance with all of the following schedule and composting requirements:

7.3.2.1 On and after August 18, 2012, comply with the applicable Watering Systems requirements or implement an APCO approved alternative mitigation measure that demonstrates at least 19% reduction, by weight, in VOC emissions.

7.3.2.2 On and after August 18, 2016, comply with the Finished Compost Cover requirements in addition to the Watering System requirements. In lieu of complying with both of the finished compost cover and watering system requirements, implement an APCO approved alternative mitigation measure that demonstrates at least 60% reduction, by weight, in VOC emissions.

7.3.3 On and after August 18, 2016, an operator of a composting operation with a total throughput of greater than or equal to 750,000 wet tons per year of organic material shall be in full compliance with an APCO approved mitigation measure that demonstrates at least 80% reduction, by weight, in VOC emissions for organic material during the active phase.

RULE 4570 CONFINED ANIMAL FACILITIES (Adopted June 15, 2006; Readopted June 18, 2009; Amended October 21, 2010)

1.0 Purpose

The purpose of this rule is to limit emissions of volatile organic compounds (VOC) from Confined Animal Facilities (CAF).

2.0 Applicability

The provisions of this rule shall apply to any Confined Animal Facility.

3.0 Definitions

3.1 Aerated Static Pile (ASP): a system designed, constructed, maintained, and operated for decomposing organic material in which the material is placed on top of perforated plates or pipes that are connected to blowers that either push or pull air through the piles.

3.2 Aerobic Digester: a basin or tank designed, constructed, maintained, and operated for the aerobic treatment of liquid or solid manure that is approved by the APCO, ARB, and EPA.

3.3 Aerobic Lagoon: a lagoon designed, constructed, maintained, and operated in accordance with the applicable standards for aerobic lagoons in the Natural Resource Conservation Service (NRCS) California Field Office Technical Guide Conservation Practice Standard Code 359 or other applicable standards approved by the APCO, ARB, and EPA.

3.4 Alternative Mitigation Measure: a mitigation measure that is determined by the APCO, ARB, and EPA to achieve reductions that are equal to or exceed the reductions that would be achieved by other mitigation measures listed in this rule that owners/operators could choose to comply with rule requirements.

3.5 Anaerobic Digester: a basin or tank designed, constructed, maintained, and operated for the anaerobic treatment of liquid or solid manure in accordance with the applicable standards for anaerobic digesters in the Natural Resource Conservation Service (NRCS) California Field Office Technical Guide Conservation Practice Standard Code 365 or 366 or other applicable standards approved by the APCO, ARB, and EPA.

3.6 Anaerobic Treatment: the decomposition of organic matter by microbes in the absence of oxygen. During this process four main reactions occur. In the first reaction, complex organic materials (e.g. carbohydrates, proteins, and fats) are hydrolyzed to form soluble organic molecules (e.g. sugars, amino acids, and

fatty acids). In the second reaction, soluble organic molecules ferment to form acetic acid, formic acid, and volatile fatty acids. In the third reaction, volatile fatty acids undergo acetogenesis to form acetic acid and formic acid. In the fourth reaction, acetic acid and formic acid undergo methanogenesis to form methane and carbon dioxide.

3.7 Anaerobic Treatment Lagoon: a lagoon designed, constructed, maintained, and operated in accordance with the standards for anaerobic lagoons in the Natural Resource Conservation Service (NRCS) California Field Office Technical Guide Conservation Practice Standard Code 359 or other applicable standards approved by the APCO, ARB, and EPA.

3.8 Animal Manure: any animal excretions and mixtures containing animal excretions, except for material meeting the definition of separated solids.

3.9 APCO: as defined in Rule 1020 (Definitions).

3.10 ARB: as defined in Rule 1020 (Definitions).

3.11 Beef Feedlot: a CAF that is primarily concerned with raising cattle for the production of meat for commercial purposes.

3.12 Biofilter: a pollution control technique using living material to capture and biologically degrade process pollutants. A biofilter is usually a bed of organic material (medium), typically a mixture of compost and wood chips or shreds. As air passes through the biofilter, the microbes on the organic material convert contaminants in the air stream to carbon dioxide and water.

3.13 CDFA: California Department of Food and Agriculture or any person designated to act on its behalf.

3.14 Cereal Grains: grasses (members of the monocot families Poaceae or Gramineae) cultivated for the edible components of their fruit. These grains include corn, rice, wheat, barley, sorghum, millet, oats, rye, triticale, and fonio. For the purposes of this rule, buckwheat and quinoa will also be considered cereal grains.

3.15 Certified Nutritionist: a nutritionist certified by the American Registry of Professional Animal Scientists or who is approved by the APCO, ARB, and EPA.

3.16 Class One Mitigation Measures: a mitigation measure or combination of measures for the specific source category that, at the time of rule adoption, are considered to be the Best Available Retrofit Control Technology (BARCT) for VOC, as defined in the California Health and Safety Code Section 40406.

3.17 Class Two Mitigation Measures: a mitigation measure or combination of measures for the specific source category that achieve VOC reductions equal to or greater than those achieved by Class One Mitigation Measures, but are considered beyond the Best Available Retrofit Control Technology (BARCT) standards for existing facilities after taking into account environmental, energy, economic, legal, social, and technological factors. These measures are considered to be between BARCT (the standard for existing facilities) and Best Available Control Technology (BACT), equivalent to BACT, or theoretically feasible measures that may be beyond BACT.

3.18 Composting: the controlled biological decomposition of organic material, under aerobic (with air) or anaerobic (without air) conditions, to form a humus-like material.

3.19 Confined Animal Facility (CAF): a facility where animals are corralled, penned, or otherwise caused to remain in restricted areas for commercial purposes and primarily fed by a means other than grazing for at least forty-five (45) days in any twelve (12) month period.

3.20 Contiguous or Adjacent Property: as defined in Rule 2201 (New and Modified Stationary Source Review).

3.21 Corral: an area where animals are confined without separate stalls in which the animals may rest. (also referred to as dry lot, pen, exercise pen, loafing barn, saudi barn or open lot).

3.22 Dairy: a CAF that is primarily concerned with the production of milk, butter, or cheese for commercial purposes.

3.23 Day: a twenty-four hour period beginning at 12:00 a.m. and ending at midnight.

3.24 District: as defined in Rule 1020 (Definitions).

3.25 Dry Manure/Dry Separated Solids: manure or separated solids with less than 50% moisture, by weight, not including any materials used for on-site composting operations.

3.26 Dry Rolled Corn: any corn that is crushed between rollers without previous treatment with steam or another softening process.

3.27 Emission Mitigation Plan: a document that lists and describes all VOC mitigation measures to be implemented at the CAF.

3.28 EPA: the United States Environmental Protection Agency or any person designated to act on its behalf.

3.29 Facility: a source or group of air pollution sources located on one or more properties that are contiguous, adjacent, or separated only by a public right-of-way and are under common ownership, common control, or operated by entities that are under common ownership or control. A facility includes, but is not limited to, all barns, buildings, coops, corrals, feed storage areas, installations, milking parlors, structures, and systems for the collection, distribution, storage, and treatment of manure on the properties.

3.30 Feed Bunk: the area where feed is placed for the animals to eat the feed.

3.31 Feedlanes: the area in which the animal stands while eating feed. This area may also be referred to as a flush or scrape concrete lane.

3.32 Freestall Barn: a structure for housing animals in which the animals are contained in pens under a roof and have free access to feed bunks, waterers, and stalls for resting.

3.33 High Moisture Corn: corn which, at harvest, has a kernel moisture of greater than 25%.

3.34 In-corral Mounds: mounds of manure and/or soil which are constructed, designed, maintained, and operated by the owner/operator to allow animals to have a dry area to lay and rest during the wet season.

3.35 Lagoon: a basin constructed, maintained, and operated to store and treat manure. This does not include basins primarily used to collect runoff and stormwater.

3.36 Land Incorporate: use of a method, such as tilling, injecting, or plowing, that covers manure with soil.

3.37 Large CAF: a CAF that maintains, on any one day, at least the following number of animals:

Table 1 – Large CAF Definition by Livestock Category	
Livestock Category	Large CAF Definition
Dairy	1,000 milking cows
Beef Feedlots	3,500 beef cattle
Other Cattle Facility	7,500 calves, heifers, or other cattle
Poultry Facilities	
Chicken	650,000 head
Duck	650,000 head
Turkey	100,000 head
Swine Facility	3,000 head
Horses Facility	2,500 head
Sheep and Goat Facilities	15,000 head of sheep, goats, or any combination of the two
Any livestock facility not listed above	30,000 head

3.38 Licensed Veterinarian: a veterinarian licensed by the State of California or a veterinarian that is approved by the APCO, ARB, and EPA.

3.39 Livestock: any domesticated animal kept or raised for the production of eggs, milk, wool, or meat.

3.40 Mature Cow: a cow that has had at least one calf.

3.41 Medium Dairy CAF: a dairy CAF that maintains, on any one day, at least 500 milking cows, but is not a large dairy CAF.

3.42 Milking Cow: a cow that is currently producing milk (lactating).

3.43 Mitigation Measure: an activity, practice, or technology that reduces VOC air pollutants emitted by or associated with a CAF.

3.44 NRC: the National Research Council of the United States of America.

3.45 NRCS: the Natural Resource Conservation Service operated under the United States Department of Agriculture.

3.46 Nursery Pig: For the purposes of this rule, any pig that has been weaned and is less than forty-five (45) pounds in weight.

3.47 Other Cattle Facility: a CAF housing cattle that does not meet the definition of a Beef Feedlot or Dairy.

3.48 Owner/Operator: any person who owns, leases, supervises, or operates a Confined Animal Facility or equipment on such a facility.

3.49 Oxygen Barrier Film: a plastic film with an oxygen transfer rate not exceeding 200 $cm^3/(m^2$-24 hrs) as measured by ASTM D3985 or a plastic film with an equivalent oxygen transfer rate as determined by methods approved by the APCO and EPA.

3.50 Phase Feeding: the feeding of multiple diets during the nursery stage and during the grower/finisher phase.

3.51 Phototropic Lagoon: a lagoon where at least 10% of the bacteria in the lagoon are photosynthetic bacterium; the bacteriochlorophyll a concentration is above 1081 μg/L; or that is designed, constructed, maintained, and operated according to other standards approved by the APCO, ARB, and EPA.

3.52 Poultry: any domesticated birds kept or raised for eggs or meat.

3.53 Poultry Litter: poultry excretions and bedding, including, but not limited to, dried solids, manure, urine and bedding from chickens, turkeys, geese, or ducks.

3.54 Poultry Molt: the periodic replacement of feathers by shedding old feathers while producing new ones.

3.55 Processed Cereal Grain or Processed Corn: cereal grains or corn that have undergone one or more processes to changes the underlying chemical structure compared to the cereal grain or corn as harvested.

3.56 Rain Event: precipitation greater than 0.1 inch in 24 hours at the facility.

3.57 Separated Solids: solids removed from manure by a solid separator system, not including any materials used for onsite composting operations.

3.58 Shade Structure: a structure designed, constructed, installed, maintained, and operated to provide shade for livestock.

3.59 Solid Separator System: a system for separating solid manure from the liquid manure stream that is designed, installed, constructed, operated, and maintained in accordance with the applicable standards in California NRCS Field Office Technical Guide Conservation Practice Standard Code 632 or other applicable standards approved by the APCO, ARB, and EPA. Solid separator systems may include, but are not limited to, flat belt separators, roller press separators,

vibrating screen separators, stationary inclined screen separators, weeping walls, and settling basins.

3.60 Split-Sex Feeding Program: a feeding program that separates male and female swine after they are moved from the nursery and feed different diets to more closely match the nutrient requirements of the different sexes.

3.61 Steam-Flaked Cereal Grains: cereal grain that is processed by cooking the grain with steam under pressure and then flaking the resulting material through heated rollers.

3.62 Steam-Flaked Corn: corn that is processed by cooking the corn with steam under pressure and then flaking the resulting material through heated rollers.

3.63 Storage Pond: a basin constructed, maintained, and operated, to store manure, after it has been treated or processed in a lagoon.

3.64 Swine: for the purposes of this rule, and determination of the threshold in Table 2, any weaned pig of at least forty-five (45) pounds in weight, such as finishing pigs and breeding stock.

3.65 USDA: the United States Department of Agriculture or any person designated to act on its behalf.

3.66 VOC Control Device: a device, into which captured air is vented, that reduces the VOC content in the air prior to the air being released into the atmosphere.

3.67 Volatile Organic Compounds (VOC): as defined in Rule 1020 (Definitions).

3.68 Weatherproof Covering/Storage Structure: A covering, such as a building or tarp, constructed, installed, maintained, and operated such that the material inside or underneath the covering is not moved or moistened by weather conditions outside of the covering including, but not limited, to wind and rain. The covering shall be maintained according to manufacturer recommendations and adhere to the applicable standards in NRCS California Field Office Technical Guide (FOTG) Conservation Practice Standard Code~~s~~ 313 or other applicable standards approved by the ARB, APCO, and EPA.

3.69 Year: any consecutive 365-day period.

4.0 Exemptions

Except for the recordkeeping requirements of Section 7, the provisions of this rule shall not apply to a CAF, which remains at all times below all of the regulatory thresholds in Table 2:

Table 2 - CAF Thresholds for Regulation

Livestock Category	Regulatory Threshold Through October 21, 2010	Regulatory Threshold On and after October 22, 2010
Dairy	1,000 milking cows	500 milking cows
Beef Feedlots	3,500 beef cattle	3,500 beef cattle
Other Cattle Facility	7,500 calves, heifers, or other cattle	7,500 calves, heifers, or other cattle
Poultry Facilities		
Chicken	650,000 head	400,000 head
Duck	650,000 head	400,000 head
Turkey	100,000 head	100,000 head
Swine Facility	3,000 head	3,000 head
Horses Facility	3,000 head	3,000 head
Sheep and Goat Facilities	15,000 head of sheep, goats, or any combination of the two	15,000 head of sheep, goats, or any combination of the two
Any livestock facility not listed above	30,000 head	30,000 head

5.0 Requirements

5.1 Permit Requirements:

5.1.1 Owner/operators shall obtain a Permit-to-Operate for the facility.

5.1.2 A thirty-day (30) public noticing and commenting period shall be required for all large CAFs receiving their initial Permit-to-Operate or Authority-to-Construct.

5.1.3 Facility Emission Mitigation Plan

The owner/operator shall submit a facility emission mitigation plan as part of the Permit-to-Operate application or Authority-to-Construct application. The mitigation plan shall contain the following information:

5.1.3.1 The name, business address, and phone number of the owners/operators responsible for the preparation and the implementation of the mitigation measures listed in the mitigation plan.

5.1.3.2 The signature of the owners/operators attesting to the accuracy of the information provided and adherence to implementing the activities specified in the mitigation plan at all times and the date that the application was signed.

5.1.3.3 A list of all mitigation measures chosen to comply with Rule 4570 requirements.

5.1.3.3.1 The mitigation measures shall be chosen from the applicable portions of Sections 5.5 or 5.6.

5.1.3.3.2 The owner/operator of CAFs that are not a dairy, beef feedlot, other cattle, swine, or poultry operations shall submit a mitigation plan demonstrating facility-wide reductions of at least 30% or submit a mitigation plan that adheres to all of the requirements of Sections 5.5 or 5.6, whichever section best fits the facility.

5.1.3.3.3 Owners/operators may substitute a mitigation measure from one section in the applicable table (Tables 3.1 through 4.6) for a mitigation measure in another section of the applicable table, provided it is demonstrated that the substitution would result in equal or greater emission reductions. Alternative mitigation measures must be approved prior to initial use.

5.1.3.3.4 In lieu of compliance with Section 5.1.3.3.1, Section 5.1.3.3.2, or Section 5.1.3.3.3, an owner/operator may demonstrate that facility-wide reductions are equal to that which the compliance with those sections would have achieved.

5.1.4 Facility Emission Inventory

The Permit-to-Operate application or Authority-to-Construct application shall include the following information, which is in addition to the facility emission mitigation plan:

5.1.4.1 The maximum number of animals at the facility in each production stage (facility capacity).

5.1.4.2 Any other information necessary for the District to prepare an emission inventory of all regulated air pollutants emitted from the facility, as determined by the APCO.

5.1.5 The approved mitigation measures from the facility's mitigation plan will be listed on the Permit-to-Operate or Authority-to-Construct as permit conditions.

5.1.6 The District shall act upon the Authority to Construct application or Permit-to-Operate application within six (6) months of receiving a complete application.

5.2 Permit Renewal/Change

5.2.1 Renewal - The District shall review each plan/permit at least once every three (3) years and update to reflect changes in the operation and feasibility of mitigation measures.

5.2.2 Change to Permit – If a temporary suspension of one or more mitigation measure provided for in Section 5.4 continues beyond the allowed suspension period:

5.2.2.1 The owners/operators shall, within that allowed period, submit a new emission mitigation plan designating a mitigation measure to be implemented in lieu of the mitigation measure that was suspended; and

5.2.2.2 The owner/operator shall obtain approval of the amended mitigation plan from the APCO and EPA by submittal of an Authority-to-Construct application.

5.3 Mitigation Measure Implementation

Owners/operators of any CAF shall implement all VOC emission mitigation measures, as contained in the permit application, on and after 365 days from the date of issuance of either the Authority-to-Construct or the Permit-to-Operate, whichever is sooner.

5.4 Temporary Suspension of Mitigation Measures

An owner/operator may temporarily suspend use of mitigation measure(s) provided all of the following requirements are met:

5.4.1 It is determined by a licensed veterinarian, certified nutritionist, CDFA, or USDA that any mitigation measure being suspended is detrimental to animal health or necessary for the animal to molt, and a signed written copy of this determination shall be retained on-site and made available for inspection upon request,

5.4.2 The owner/operator notifies the District, within forty-eight (48) hours of the determination that the mitigation measure is being temporarily suspended; the specific health condition requiring the mitigation measure to be suspended; and the duration that the measure must be suspended for animal health reasons,

5.4.3 The emission mitigation measure is not suspended for longer than recommended by the licensed veterinarian or certified nutritionist for animal health reasons,

5.4.4 If such a situation exists, or is expected to exist for longer than thirty (30) days, the owners/operators shall, within that thirty (30) day period, submit a new emission mitigation plan designating a mitigation measure to be implemented in lieu of the mitigation measure that was suspended, and

5.4.5 The APCO, ARB, and EPA approve the temporary suspension of the mitigation measure for the time period requested by the owner/operator and a signed written copy of this determination shall be retained on-site.

5.5 Phase I Mitigation Measures: Owners/operators of large CAFs shall comply with the following Phase I Mitigation Measures in Section 5.5 until compliance with all applicable Phase II Mitigation Measures in Section 5.6 is demonstrated in accordance with the compliance schedule in Section 8.0.

5.5.1 Dairy CAF: Owners/operators of a large Dairy CAF shall comply with the Phase I requirements in Table 3.1:-

Table 3.1 – Large Dairy CAF Phase I Mitigation Measure Requirements	
A.	Owners/operators shall incorporate at least four (4) of the following feed mitigation measures:
	Class One Mitigation Measures
1.	a. Feed according to National Research Council (NRC) guidelines.
2.	a. Feed animals high moisture corn or steam-flaked corn and not feed animals dry rolled corn.
3.	a. At least once every fourteen (14) days remove feed from the area where animals stand to eat feed.
4.	a. At least once every fourteen (14) days remove spilled feed from the area where equipment travels to place feed in the feed bunk.
5.	a. Remove uneaten wet feed from feed bunks within twenty-four (24) hours of a rain event.
6.	a. Feed or dispose of rations within forty-eight (48) hours of grinding and mixing rations.
7.	a. Store grain in a weatherproof storage structure from October through May.
8.	a. Implement an alternative mitigation measure(s), not listed above.
B.	Owners/operators shall incorporate at least one (1) of the following feed mitigation measures:
	Class One Mitigation Measures
1.	a. Cover the horizontal surface of silage piles, except for the area where feed is being removed from the pile.
2.	a. Collect leachate from the silage piles and send it to a waste treatment system such as a lagoon at least once every twenty-four (24) hours.
3.	a. Implement an alternative mitigation measure(s), not listed above.
	Class Two Mitigation Measures
4.	a. Enclose silage in a bag and vent to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%, or b. Enclose silage in a weatherproof structure and vent to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%, or c. Eliminate silage from animal diet.
	Continues on the next page

Table 3.1 – Large Dairy CAF Phase I Mitigation Measure Requirements (continued)	
C.	Owners/operators shall incorporate at least one (1) of the following mitigation measures in each milk parlor:
	Class One Mitigation Measures
1.	a. Flush or hose milk parlor immediately prior to, immediately after, or during each milking.
2.	a. Implement an alternative mitigation measure(s), not listed above.
	Class Two Mitigation Measures
3.	a. Enclose and vent the milk parlor to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80% when animals are in the parlor.
D.	Owners/operators housing animals in freestalls shall incorporate at least two (2) of the following mitigation measures in each freestall barn:
	Class One Mitigation Measures
1.	a. Vacuum or scrape freestall flush lanes immediately prior to, immediately after, or during each milking.
2.	a. Inspect water pipes and troughs and repair leaks at least once every fourteen (14) days.
3.	a. Use non-manure-based bedding and non-separated solids based bedding for at least 90% of the bedding material, by weight, for freestalls (e.g. rubber mats, almond hulls, sand, or waterbeds).
4.	a. Remove manure that is not dry from individual cow freestall beds at least once every fourteen (14) days.
5.	a. Rake, harrow, scrape, or grade bedding in freestalls at least once every fourteen (14) days.
6.	a. Use a dry manure handling system, such as scraping, instead of a liquid manure handling system, such as a flush system.
7.	a. Have no animals in exercise pens, corrals, or drylots at any time.
8.	a. Flush freestalls more frequently than the milking schedule.
9.	a. Implement an alternative mitigation measure(s), not listed above.
	Class Two Mitigation Measures
10.	a. Vacuum manure instead of flushing or scraping and apply manure directly to land either through injection or incorporation within seventy-two hours of removal from animal housing or vacuum truck.

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Table 3.1 – Large Dairy CAF Phase I Mitigation Measures Requirements (continued)	
E.	Owners/operators housing animals in corrals shall incorporate at least six (6) of the following mitigation measures in each corral where animals have been housed in the last thirty (30) days:
Class One Mitigation Measures	
1.	a. Clean manure from corrals at least four (4) times per year with at least sixty (60) days between cleaning, or b. Clean corrals at least once between April and July and at least once between October and December, or c. Clean concreted areas such that the depth of manure does not exceed twelve (12) inches at any point or time, except for in-corral mounding.
2.	a. Manage corrals such that the manure depth in the corral does not exceed twelve (12) inches at any time or point, except for in-corral mounding.
3.	a. Knockdown fence line manure build-up prior to it exceeding a height of twelve (12) inches at any time or point.
4.	a. Scrape or flush feed aprons in corrals at least once every seven (7) days.
5.	a. Slope the surface of the pens at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the pens at least 1.5% where the available space for each animal is more than 400 square feet per animal.
6.	a. Maintain corrals to ensure drainage and prevent water from standing more than forty-eight (48) hours after a storm, or b. Maintain corrals and drylots so that there are not indentions in the surface where puddles may form and remain for more than forty-eight (48) hours.
7.	a. Install floats on the troughs or use another method approved by the APCO, ARB, and EPA to ensure that the water in the troughs does not intentionally or unintentionally overflow or spill onto an earthen ground.
8.	a. Inspect water pipes and troughs and repair leaks at least once every fourteen (14) days.
9.	a. Harrow, rake, or scrape pens sufficiently to maintain a dry surface.
10.	a. Install no shade structures in the corrals, or b. Install shade structures such that they are constructed with a light permeable roofing material, or c. Install all shade structures uphill of any slope in the corral.
11.	a. Implement an alternative mitigation measure(s), not listed above.
Class Two Mitigation Measures	
12.	a. Use lime or a similar absorbent material in the pens according to the manufacturer's recommendations to minimize moisture in the pens, or b. Apply thymol to corral soil in accordance with the manufacturer's recommendation.
13.	a. House animals in an enclosure vented to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%.

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Table 3.1 – Large Dairy CAF Phase I Mitigation Measures Requirements (continued)	
F.	Owners/operators that handle or store solid manure or separated solids outside the animal housing shall incorporate at least two (2) of the following mitigation measures:
	Class One Mitigation Measures
1.	a. Cover dry manure piles outside the pens with a weatherproof covering from October through May, except for times, not to exceed twenty-four (24) hours per event, when wind events remove the covering.
2.	a. Cover dry separated solids outside the pens with a weatherproof covering from October through May, except for times, not to exceed twenty-four (24) hours per event, when wind events remove the covering.
3.	a. Remove manure from the facility within seventy-two (72) hours of removal from the pens or corrals.
4.	a. Remove separated solids from the facility within seventy-two (72) hours of separation with a solid separation system, or b. Store no separated solids outside of anaerobic digesters or aerobic digesters.
5.	a. Implement an alternative mitigation measure(s), not listed above.
	Class Two Mitigation Measures
6.	a. Compost manure removed from pens with an aerated static pile vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
7.	a. Store all removed manure in an enclosure vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
8.	a. Send at least 51% of the manure removed from animal housing to a digester, with a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
G.	Owners/operators that handle manure in a liquid form shall incorporate at least one (1) of the following mitigation measures:
	Class One Mitigation Measures
1.	a. Manage the facility such that there are no lagoons, as defined in Section 3.35, at the facility.
2.	a. Use phototropic lagoon, or b. Use an anaerobic treatment lagoon that is not mechanically aerated.
3.	a. Remove solids from the waste system with a solid separator system, prior to the waste entering the lagoon.
4.	a. Maintain lagoon pH between 6.5 and 7.5.
5.	a. Implement an alternative mitigation measure(s), not listed above.
	Continues on the next page

Table 3.1 – Large Dairy CAF Phase I Mitigation Measures Requirements (continued)	
Class Two Mitigation Measures	
6.	a. Use an aerobic lagoon, or b. Use an anaerobic treatment lagoon that is mechanically aerated.
7.	a. Maintain organic loading in the lagoon such that the total solids is less than 3.5 mg (dry weight)/mL, or total volatile solids is less than 3.5 mg/mL.
8.	a. Use additional non-standard equipment or chemicals on the solid separator system, such as roller or screw presses or chemical coagulants and flocculants, that increase the percent of solid separation achieved by the separator and that is approved by the APCO, ARB, and EPA.
9.	a. Cover the lagoon or storage pond and vent to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
H.	Owners/operators who land apply dry or liquid manure to crop land on the facility shall incorporate at least two (2) of the following mitigation measures:
Class One Mitigation Measures	
1.	a. Land incorporate all solid manure within seventy-two (72) hours of removal from animal housing.
2.	a. Only apply solid or liquid manure that has been treated with an anaerobic or aerobic lagoon or digester system.
3.	a. Allow liquid manure to stand in the fields no more than twenty-four (24) hours after irrigation, or b. Apply no liquid manure.
4.	a. Apply no solid manure with a moisture content of more than 50%, or b. Apply no solid manure.
5.	a. Implement an alternative mitigation measure(s), not listed above.

5.5.2 Beef Feedlots: Owners/operators of a large CAF that is a Beef Feedlot shall comply with the Phase I requirements in Table 3.2:

Table 3.2 – Beef Feedlot Phase I Mitigation Measure Requirements	
A. Owners/operators shall incorporate at least five (5) of the following feed mitigation measures:	
Class One Mitigation Measures	
1.	a. Feed according to National Research Council (NRC) guidelines.
2.	a. Feed animals with high moisture corn or steam-flaked corn and not feed animals dry rolled corn.
3.	a. At least once every fourteen (14) days remove feed from the area where animals stand to eat.
4.	a. At least once every fourteen (14) days remove spilled feed from the area where equipment travels to place feed in the feed bunk.
5.	a. Remove uneaten wet feed from feed bunks within twenty-four (24) hours of a rain event.
6.	a. Feed or dispose of rations within forty-eight (48) hour of grinding and mixing rations.
7.	a. Store grain in a weatherproof storage structure from October through May.
8.	a. Implement an alternative mitigation measure(s), not listed above.
B. Owners/operators shall incorporate at least one (1) of the following feed mitigation measures:	
1.	a. Cover the horizontal surface of silage piles, except for the area where feed is being removed from the pile.
2.	a. Collect leachate from the silage piles and send it to a waste treatment system, such as a lagoon, at least once every twenty-four (24) hours.
3.	a. Implement an alternative mitigation measure(s) not listed above.
Class Two Mitigation Measures	
4.	a. Enclose silage in a bag and vent to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%, or b. Enclose silage in a weatherproof structure and vent to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%, or c. Eliminate silage from animal diet.
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Table 3.2 – Beef Feedlot Phase I Mitigation Measure Requirements (continued)	
C. Owners/operators shall incorporate at least seven (7) of the following mitigation measures in each of the animal housing structures (e.g. each corral, pen, etc.):	
Class One Mitigation Measures	
1.	a. Clean manure from pens at least once between April and July and at least once between October and December of each year.
2.	a. Manage pens such that the manure depth in the pen does not exceed eighteen (18) inches at any time or point, except for in-corral mounds.
3.	a. Knockdown fence line manure build-up prior to it exceeding a height of twelve (12) inches at any time or point.
4.	a. Slope the surface of the pens at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the pens at least 1.5% where the available space for each animal is more than 400 square feet per animal.
5.	a. Maintain pens to ensure drainage and prevent water from standing more than forty-eight (48) hours after a storm, or b. Prior to placing cattle in pens, scrape or smooth the pen floors such that there are not indentions where puddles may form and remain for more than forty-eight (48) hours.
6.	a. Install floats on the troughs or use another method approved by the APCO, ARB, and EPA to ensure that the water in the troughs does not intentionally or unintentionally overflow or spill onto an earthen ground.
7.	a. Inspect water pipes and troughs and repair leaks at least once every fourteen (14) days.
8.	a. Harrow, rake, or scrape pens sufficiently to maintain a dry surface, unless the corrals have not held animals in the last thirty (30) days.
9.	a. Clean the area where the animals stand to consume feed such that the depth of manure in this area does not exceed twelve (12) inches at any time or point.
10.	a. Use a dry manure handling system, such as scraping, instead of a liquid manure handling system, such as a flush system.
11.	a. Install no shade structures in the corrals, or b. Install shade structures such that they are constructed with a light permeable roofing material, or c. Install shade structures such that situated so that they are uphill of any slope in the corral.
12.	a. Implement an alternative mitigation measure(s), not listed above.
Class Two Mitigation Measures	
13.	a. Use lime or a similar absorbent material in the pens according to the manufacturer's recommendation to minimize moisture in the pens, or b. Apply thymol to the feedlot soil in accordance with the manufacturer's recommendation.
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Table 3.2 – Beef Feedlot Phase I Mitigation Measure Requirements (continued)	
D.	Owners/operators that handle or store solid manure or separated solids outside the animal housing shall incorporate at least one (1) of the following mitigation measures:
	Class One Mitigation Measures
1.	a. Cover dry manure piles outside the pens with a weatherproof covering from October through May, except for times, not to exceed twenty-four (24) hours per event, when wind events remove the covering, or b. Store no dry manure piles outside the pens from October through May.
2.	a. Remove manure from the facility within seventy-two (72) hours of removal from the pens.
3.	a. Implement an alternative mitigation measure(s), not listed above.
	Class Two Mitigation Measures
4.	a. Compost manure removed from pens with an aerated static pile vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
5.	a. Store all removed manure in an enclosure vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
6.	a. Send at least 51% of the manure removed from the animal housing to a digester, with a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
7.	a. Use a slatted floor system (slatted floors over deep pits or shallow flush alleys), with daily manure removal.
E.	Owners/operators that handle manure in a liquid form shall incorporate at least one (1) of the following mitigation measures:
	Class One Mitigation Measures
1.	a. Manage the facility such that there are no lagoons, as defined in Section 3.35, at the facility.
2.	a. Use phototropic lagoon, or b. Use an anaerobic treatment lagoon that is not mechanically aerated.
3.	a. Remove solids from the waste system with a solid separator system, prior to the waste stream entering the lagoon.
4.	a. Maintain lagoon pH between 6.5 and 7.5.
5.	a. Implement an alternative mitigation measure(s), not listed above.
	Continues on next page

Table 3.2 – Beef Feedlot Phase I Mitigation Measure Requirements (continued)	
Class Two Mitigation Measures	
6.	a. Use an aerobic lagoon, or b. Use an anaerobic treatment lagoon that is mechanically aerated.
7.	a. Maintain organic loading in the lagoon that is less than 3.5 mg (dry weight)/mL, or total volatile solids is less than 3.5 mg/mL.
8.	a. Use additional non-standard equipment or chemicals on the solid separator system, such as roller or screw presses or chemical coagulants and flocculants, that increase the percent of solid separation achieved by the separator and that is approved by the APCO, ARB, and EPA.
9.	a. Cover the lagoon and vent to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
F.	Owners/operators who land apply dry or liquid manure to crop land on the facility shall incorporate at least (2) two of the following mitigation measures:
Class One Mitigation Measures	
1.	a. Land incorporate all manure within seventy-two (72) hours of removal from animal housing.
2.	a. Only apply solid or liquid manure that has been treated with an anaerobic or aerobic lagoon or digester system.
3.	a. Allow liquid manure to stand in the fields no more than twenty-four (24) hours after irrigation, or b. Apply no liquid manure.
4.	a. Apply no solid manure with a moisture content of more than 50%, or b. Apply no solid manure.
5.	a. Implement an alternative mitigation measure(s), not listed above.

5.5.3 Other Cattle CAF: Owners/operators of a large CAF that is an Other Cattle Facility shall comply with the Phase I requirements in Table 3.3:

Table 3.3 – Other Cattle Phase I Mitigation Measure Requirements	
A. Owners/operators shall incorporate at least five (5) of the following feed and silage mitigation measures:	
Class One Mitigation Measures	
1.	a. Feed according to National Research Council (NRC) guidelines.
2.	a. Feed animals high moisture corn or steam-flaked corn and not feed animals with dry rolled corn.
3.	a. At least once every fourteen (14) days remove feed from the area where animals stand to eat feed.
4.	a. At least once every fourteen (14) days remove spilled feed from the area where equipment travels to place feed in the feed bunk.
5.	a. Remove uneaten wet feed from feed bunks within twenty-four (24) hours of a rain event.
6.	a. Feed or dispose of rations within forty-eight (48) hour of grinding and mixing rations.
7.	a. Store grain in a weatherproof storage structure from October through May.
8.	a. Implement an alternative mitigation measure(s), not listed above.
B. Owners/operators shall incorporate at least one (1) of the following feed mitigation measures:	
Class One Mitigation Measures	
1.	a. Cover the horizontal surface of silage piles, except for the area where feed is being removed from the pile.
2.	a. Collect leachate from the silage piles and send it to a waste treatment system such as a lagoon at least once every twenty-four (24) hours.
3.	a. Implement an alternative mitigation measure(s), not listed above.
Class Two Mitigation Measures	
4.	a. Enclose silage in a bag and vent to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%, or b. Enclose silage in a weatherproof structure and vent to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%, or c. Eliminate silage from animal diet.
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Table 3.3 – Other Cattle Phase I Mitigation Measure Requirements (continued)	
C. Owners/operators shall incorporate at least seven (7) of the following mitigation measures in each animal housing structure (e.g. corral, freestalls, pens, etc.):	
Class One Mitigation Measures	
1.	a. Vacuum, scrape, or flush freestalls at least once every fourteen (14) days (only applies to facilities with freestalls).
2.	a. Inspect water pipes and troughs and repair leaks at least once every fourteen (14) days.
3.	a. Use non-manure-based bedding and non-separated solids based bedding for at least 90% of the bedding material, by weight, for freestalls (e.g. rubber mats, almond hulls, sand, or waterbeds).
4.	a. Remove manure that is not dry from individual cow freestall beds daily (only applies to facilities with freestalls).
5.	a. Rake, harrow, scrape, or grade bedding in freestalls at least once every fourteen (14) days (only applies to facilities with freestalls).
6.	a. Use a dry manure handling system, such as scraping, instead of a liquid manure handling system such as flushing.
7.	a. Have no animals in exercise pens, corrals, or drylots at any time.
8.	a. Clean manure from corrals and pens at least once between April and July and at least once between October and December of each year.
9.	a. Manage pens such that the manure depth in the pen does not exceed eighteen (18) inches at any time or point, except for in-corral mounds.
10.	a. Knockdown fence line manure build-up prior to it exceeding a height of twelve (12) inches at any time or point.
11.	a. Scrape or flush feed aprons in all corrals at least once every seven (7) days.
12.	a. Slope the surface of the pens at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the pens at least 1.5% where the available space for each animal is more than 400 square feet per animal.
13.	a. Maintain pens and corrals to ensure drainage and prevent water from standing more than forty-eight (48) hours after a storm, or b. Prior to placing cattle in pens or corrals, scrape or smooth the pen floors such that there are not indentions where puddles may form and remain for over forty-eight (48) hours.
14.	a. Install floats on the troughs or use another method approved by the APCO, ARB, and EPA to ensure that the water in the troughs does not intentionally or unintentionally overflow or spill onto the earthen ground.
15.	a. Harrow, rake, or scrape pens and corrals sufficiently to maintain a dry surface, unless the pens have not held animals in the last thirty (30) days.
Continues on the next page	

Table 3.3 – Other Cattle Phase I Mitigation Measure Requirements (continued)	
16.	a. Clean the area where the animals stand to consume feed such that the depth of manure does not exceed twelve (12) inches at any time or point.
17.	a. Use a dry manure handling system, such as scraping, instead of a liquid manure handling system such as a flush system.
18.	a. Install no shade structures in the corrals, or b. Install shade structures such that they are constructed with a light permeable roofing material, or c. Install shade structures such that situated so that they are uphill of any slope in the corral.
19.	a. Implement an alternative mitigation measure(s), not listed above.
Class Two Mitigation Measures	
20.	a. Vacuum manure instead of flushing or scraping and apply manure directly to land either through injection or incorporation.
21.	a. Use lime or a similar absorbent material in the pens and corrals according to the manufacturer's recommendations to minimize moisture in the pens, or b. Apply thymol to the pen and corral soil in accordance with the manufacturer's recommendation.
22.	a. House animals in an enclosure vented to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%.
D. Owners/operators that handle or store solid manure or separated solids outside the animal housing shall incorporate at least one (1) of the following mitigation measures:	
Class One Mitigation Measures	
1.	a. Cover dry manure piles outside the pens with a weatherproof covering from October through May, except for times, not to exceed twenty-four (24) hours per event, when wind events remove the covering, or b. Store no dry manure piles outside of animal housing from October through May.
2.	a. Remove manure from the facility within seventy-two (72) hours of removal from the pens.
3.	a. Implement an alternative mitigation measure(s), not listed above.
Continues on the next page	

Table 3.3 – Other Cattle Phase I Mitigation Measure Requirements (continued)	
Class Two Mitigation Measures	
4.	a. Compost manure removed from pens with an aerated static pile vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
5.	a. Store all removed manure in an enclosure vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
6.	a. Send at least 51% of the manure removed from the animal housing to a digester with a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
7.	a. Use a slatted floor system (slatted floors over deep pits or shallow flush alleys), with daily manure removal.
E.	Owners/operators that handle manure in a liquid form shall incorporate at least one (1) of the following mitigation measures:
Class One Mitigation Measures	
1.	a. Manage the facility such that there are no lagoons, as defined in Section 3.35, at the facility.
2.	a. Use phototropic lagoon, or b. Use an anaerobic treatment lagoon that is not mechanically aerated.
3.	a. Remove solids from the waste system with a solid separator separation system.
4.	a. Maintain lagoon pH between 6.5 and 7.5.
5.	a. Implement an alternative mitigation measure(s), not listed above.
Class Two Mitigation Measures	
6.	a. Use an aerobic lagoon, or b. Use an anaerobic treatment lagoon that is mechanically aerated.
7.	a. Maintain organic loading in the lagoon that is less than 3.5 mg (dry weight)/mL, or total volatile solids is less than 3.5 mg/mL.
8.	a. Use additional non-standard equipment or chemicals on the solid separator system, such as roller or screw presses or chemical coagulants and flocculants, that increase the percent of solid separation achieved by the separator and that is approved by the APCO, ARB, and EPA.
9.	a. Cover the lagoon and vent to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
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Table 3.3 – Other Cattle Phase I Mitigation Measure Requirements (continued)	
F.	Owners/operators who land apply dry or liquid manure to crop land on the facility shall incorporate at least (2) two of the following mitigation measures:
Class One Mitigation Measures	
1.	a. Land incorporate all manure within seventy-two (72) hours of removal from animal housing.
2.	a. Only apply manure that has been treated with an anaerobic or aerobic lagoon or digester system.
3.	a. Allow liquid manure to stand in the fields no more than twenty-four (24) hours after irrigation, or b. Apply no liquid manure.
4.	a. Apply no solid manure with a moisture content of more than 50%, or b. Apply no solid manure.
5.	a. Implement an alternative mitigation measure(s), not listed above.

5.5.4 Swine CAF: Owners/operators of a Large CAF that is a Swine Facility shall comply with the Phase I requirements in Table 3.4:

Table 3.4 – Swine Phase I Mitigation Measure Requirements	
A. Owners/operators shall incorporate at least five (5) of the following feed and silage mitigation measures:	
Class One Mitigation Measures	
1.	a. Feed according to National Research Council (NRC) guidelines.
2.	a. Feed animals probiotics designed to improve digestion according to manufacturer recommendations.
3.	a. Feed animals at least 5% cellulose.
4.	a. Feed animals a casein based diet.
5.	a. Feed animals an amino acid-supplemented diet with 2% sucrose thermal oligosaccharide caramel.
6.	a. Feed animals a diet with no more than ten percent (10%) crude protein with supplemented lysine, threonine, tryptophan, and methionine.
7.	a. Feed animals 10 ppm anthraquinone.
8.	a. Remove spilled from the facility at least once every fourteen (14) days.
9.	a. Remove uneaten wet feed from the housing within twenty-four (24) hours of a rain event.
10.	a. Feed or dispose of rations within forty-eight (48) hour of grinding and mixing rations.
11.	a. Store grain in a weatherproof storage structure from October through May.
12.	a. Implement an alternative mitigation measure(s), not listed above.
B. Owners/operators shall incorporate at least five (5) of the following mitigation measures in each animal housing unit:	
Class One Mitigation Measures	
1.	a. Clean manure from the housing at least twice every fourteen (14) days.
2.	a. Manage pens such that the manure depth in the pen does not exceed eighteen (18) inches at any time or point.
3.	a. Slope the surface of the pens at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the pens at least 1.5% where the available space for each animal is more than 400 square feet per animal.
4.	a. Install floats on the troughs or use drinkers that do not drip or another method approved by the APCO, ARB, and EPA to ensure that the water in the troughs does not intentionally or unintentionally overflow or spill onto an earthen ground.
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Table 3.4 – Swine Phase I Mitigation Measure Requirements (continued)	
5.	a. Inspect water pipes and troughs and repair leaks at least once every fourteen (14) days.
6.	a. Use a slatted floor system (slatted floors over deep pits or shallow flush alleys), with daily manure removal.
7.	a. Implement an alternative mitigation measure(s), not listed above.
Class Two Mitigation Measures	
8.	a. Use lime or a similar absorbent material in the pens according to the manufacturer's recommendations to minimize moisture in the pens.
9.	a. House animals in an enclosure vented to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%
10.	a. House animals in a tunnel ventilated house with mechanical ventilation.
C. Owners/operators that handle or store solid manure or separated solids outside the animal housing shall incorporate at least one (1) of the following mitigation measures:	
Class One Mitigation Measures	
1.	a. Cover dry manure and separated solids outside the pens with a weatherproof covering from October through May except for times, not to exceed twenty-four (24) hours per event, when wind events remove the covering.
2.	a. Remove manure from the facility within seventy-two (72) hours of removal from the pens or corrals.
3.	a. Use a dry manure handling system, such as stockpiles or solid land application, instead of a liquid system such as a flush system.
4.	a. Implement an alternative mitigation measure(s), not listed above.
Class Two Mitigation Measures	
5.	a. Compost manure removed from pens with an aerated static pile vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
6.	a. Store all removed manure in an enclosure vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
7.	a. Send at least 51% of the manure removed from site to a digester with a VOC control device with an overall VOC capture and VOC control efficiency of at least 80% control efficiency.
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Table 3.4 – Swine Phase I Mitigation Measure Requirements (continued)	
D. Owners/operators that handle manure in a liquid form shall incorporate at least one (1) of the following mitigation measures:	
Class One Mitigation Measures	
1.	a. Manage the facility such that there are no lagoons, as defined in Section 3.35, at the facility.
2.	a. Use phototropic lagoon, or b. Use an anaerobic treatment lagoon.
3.	a. Remove solids from the waste system with a solid separator system, prior to the waste entering the lagoon.
4.	a. Maintain lagoon pH between 6.5 and 7.5.
5.	a. Implement an alternative mitigation measure(s), not listed above.
Class Two Mitigation Measures	
6.	a. Use an aerobic lagoon, or b. Use a mechanically aerated lagoon.
7.	a. Maintain organic loading in the lagoon that is less than 3.5 mg (dry weight)/mL, or total volatile solids is less than 3.5 mg/mL.
8.	a. Use additional non-standard equipment or chemicals on the solid separator system, such as roller or screw presses or chemical coagulants and flocculants, that increase the percent of solid separation achieved by the separator and that is approved by the APCO, ARB, and EPA.
9.	a. Cover the lagoon and vent to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
E. Owners/operators who land apply dry or liquid manure to crop land on the facility shall incorporate at least (2) two of the following mitigation measures:	
Class One Mitigation Measures	
1.	a. Land incorporate all solid manure within seventy-two (72) hours of removal from animal housing, or
2.	a. Only apply manure that has been treated with an anaerobic or aerobic lagoon or digester system.
3.	a. Allow liquid manure to stand in the fields no more than twenty-four (24) hours after irrigation, or b. Apply no liquid manure.
4.	a. Apply no solid manure with a moisture content of more than 50%, or b. Apply no solid manure.
5.	a. Implement an alternative mitigation measure(s), not listed above.

5.5.5 Poultry CAF: Owners/operators of a large CAF that is a Poultry Facility shall comply with the Phase I requirements in Table 3.5:

Table 3.5 – Poultry Phase I Mitigation Measure Requirements	
A. Owners/operators shall incorporate at least five (5) of the following feed mitigation measures:	
Class One Mitigation Measures	
1.	a. Feed according to NRC guidelines.
2.	a. Feed animals probiotics designed to improve digestion according to manufacturer recommendations, or
3.	a. Feed animals an amino acid-supplemented diet to meet their nutrient requirements, or
4.	a. Feed animals feed additives such as amylase, xylanase, and protease, designed to maximize digestive efficiency according to manufacturer recommendations.
5.	a. Remove spilled feed from housing at least once every seven (7) days.
6.	a. Enclose grain in a weatherproof storage structure from October through May.
7.	a. Feed or dispose of feed within forty-eight (48) hour of grinding and mixing feed.
8.	a. Use feed additives designed to reduce feed decomposition or oxidization (the process were one or more electrons are removed from a molecule).
9.	a. Remove uneaten wet feed from the housing within twenty-four (24) hours of a rain event.
10.	a. Implement an alternative mitigation measure(s), not listed above.
B. Each poultry house shall incorporate at least four (4) of the following mitigation measures:	
Class One Mitigation Measures	
1.	a. Remove caked manure/litter at least once every fourteen (14) days.
2.	a. Clean under poultry cages at least once every fourteen (14) days.
3.	a. Use poultry litter additives designed to reduce air emissions or moisture content in litter, such as aluminum sulfate or sodium bisulfate, according to manufacturer recommendations.
4.	a. Use a dry housing cleaning method at all times, except when a wet cleaning method is required for animal health or biosecurity issues.
5.	a. Use drinkers that do not drip.
6.	a. Adjust the height, volume, and location of drinkers at least once every fourteen (14) days.
7.	a. Use no foggers in the house.
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Table 3.5 – Poultry Phase I Mitigation Measure Requirements (continued)	
8.	a. Only use fogger systems designed, operated and maintained according to manufacturer recommendations that provide water droplets with an average size of 50 microns or less.
9.	a. Slope the surface of the house at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the house at least 1.5% where the available space for each animal is more than 400 square feet per animal.
10.	a. Install mounds or berms up gradient to prevent the runoff of stormwater into pens (only an option for animals allowed to freely move between indoor housing structures and outdoor pens).
11.	a. Inspect water pipes and drinkers and repair leaks at least once every fourteen (14) days.
12.	a. Maintain the roof structure and manage roof runoff in accordance with the applicable standards in NRCS Field Office Technical Guide Code 558 or other applicable standards approved by the APCO, ARB, and EPA
13.	a. Implement an alternative mitigation measure(s), not listed above.
Class Two Mitigation Measures	
14.	a. Vent housing to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
15.	a. Use a belt litter removal system that dries the litter.
16.	a. House animals in a tunnel ventilated houses with mechanical ventilation.
17.	a. Use a litter drying system, such as a flat bed drying system.
C. Owners/operators that handle or store solid manure/litter or separated solids outside the animal housing shall incorporate at least one (1) of the following mitigation measures:	
Class One Mitigation Measures	
1.	a. Remove all manure/litter from the facility within seventy-two (72) hours of removal from housing, or b. Send all manure/litter to a lagoon within seventy-two (72) hours of removal from housing.
2.	a. Cover manure/litter outside the housing with a weatherproof covering from October through May, except for times, not to exceed twenty-four (24) hours per event, when wind events remove the covering.
3.	a. Use a solid manure/litter handling system in housing, such as stockpiles, solid land application, or a thin bed manure/litter drying system, instead of a liquid system such as flushing, manure/litter storage ponds, or manure/litter treatment lagoons.
4.	a. Implement an alternative mitigation measure(s), not listed above.
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Table 3.5 – Poultry Phase I Mitigation Measure Requirements (continued)	
Class Two Mitigation Measures	
5.	a. Send at least 51% of the manure/litter removed from site to a digester, with a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
6.	a. Compost manure/litter removed from the housing with an aerated static pile vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
D. Owners/operators that handle manure/litter in a liquid form shall incorporate at least one (1) of the following mitigation measures:	
Class One Mitigation Measures	
1.	a. Manage the facility such that there are no lagoons, as defined in Section 3.35, at the facility.
2.	a. Use phototropic lagoon, or b. Use an anaerobic treatment lagoon.
3.	a. Remove solids from the waste system with a solid separator system, prior to the waste entering the lagoon.
4.	a. Maintain lagoon pH between 6.5 and 7.5.
5.	a. Implement an alternative mitigation measure(s), not listed above.
Class Two Mitigation Measures	
6.	a. Use an aerobic lagoon, or b. Use a mechanically aerated lagoon.
7.	a. Maintain organic loading in the lagoon that is less than 3.5 mg (dry weight)/mL, or total volatile solids is less than 3.5 mg/mL.
8.	a. Use additional non-standard equipment or chemicals on the solid separator system, such as roller or screw presses or chemical coagulants and flocculants, that increase the percent of solid separation achieved by the separator and is approved by the APCO, ARB, and EPA.
9.	a. Cover the lagoon or storage pond and vent to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.

5.6 Phase II Mitigation Measures: Owners/operators of CAFs subject to the regulatory threshold in Table 2 shall comply with all applicable Phase II Mitigation Measures in accordance with the compliance schedule in Section 8.0.

5.6.1 Dairy CAF: An owner/operator of a medium or large Dairy CAF shall comply with the Phase II mitigation measures in Table 4.1.

Table 4.1 – Dairy CAF Phase II Mitigation Measure Requirements	
A. Feed: An owner/operator of a dairy CAF shall implement mitigation measures 1, 2, 3, and 4 and at least one (1) additional mitigation measure:	
1.	Feed according to National Research Council (NRC) guidelines.
2.	Push feed so that it is within three (3) feet of feedlane fence within two hours of putting out the feed or use a feed trough or other feeding structure designed to maintain feed within reach of the cows.
3.	Begin feeding total mixed rations within two (2) hours of grinding and mixing rations.
4.	Store grain in a weatherproof storage structure or under a weatherproof covering from October through May.
5.	Feed steam-flaked, dry rolled, cracked or ground corn or other steam-flaked, dry rolled, cracked or ground cereal grains.
6.	Remove uneaten wet feed from feed bunks within twenty-four (24) hours after the end of a rain event.
7.	For total mixed rations that contain at least 30% by weight of silage, feed animals total mixed rations that contain at least 45% moisture.
8.	Implement an alternative mitigation measure(s), not listed above.
B. Silage: An owner/operator of a dairy CAF that feeds silage shall implement at least one (1) of the following silage mitigation measures:	
1.	Operators selecting this option must choose mitigation measure 1a plus one (1) from mitigation measures 1b, 1c, 1d plus two (2) from mitigation measures 1e, 1f, 1g: a. Cover the surface of silage piles, except for the area where feed is being removed from the pile, with a plastic tarp that is at least five (5) mils thick (0.005 inches), multiple plastic tarps with a cumulative thickness of at least 5 mils (0.005 inches), or an oxygen barrier film covered with a UV resistant material, within seventy-two (72) hours of last delivery of material to the pile.
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Table 4.1 – Dairy CAF Phase II Mitigation Measure Requirements (continued)

Choose one of the following:

b. Build silage piles such that the average bulk density of silage piles is at least 44 lb/cu ft for corn silage and 40 lb/cu ft for other silage types, as measured in accordance with Section 7.11; or

c. When creating a silage pile, adjust filling parameters to assure a calculated average bulk density of at least 44 lb/cu ft for corn silage and at least 40 lb/cu ft for other silage types, using a spreadsheet approved by the District; or

d. Incorporate all of the following practices when creating silage piles:

   i. Harvest silage crop at ≥65% moisture for corn; and ≥60% moisture for alfalfa/ grass and other silage crops; and

   ii. Incorporate the following parameters for Theoretical Length of Chop (TLC) and roller opening, as applicable, for the crop being harvested.

Crop Harvested	TLC (inches)	Roller Opening (mm)
Corn with no processing	≤ 1/2 in	N/A
Processed Corn <35% dry matter	≤ 3/4 in	1 - 4 mm
Alfalfa/Grass	≤ 1.0 in	N/A
Wheat/Cereal Grains/Other	≤ 1/2 in	N/A

   iii. Manage silage material delivery such that no more than six (6) inches of material are un-compacted on top of the pile.

Choose two of the following:

e. Manage exposed silage (select one of the following):

   i. Manage silage piles such that only one silage pile has an uncovered face and the uncovered face has a total exposed surface area of less than 2,150 square feet; or

   ii. Manage multiple uncovered silage piles such that the total exposed surface area of all uncovered silage piles is less than 4,300 square feet.

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Table 4.1 – Dairy CAF Phase II Mitigation Measure Requirements (continued)	
	f. Maintain silage working face (select one of the following): i. Use a shaver/facer to remove silage from the silage pile; or ii. Maintain a smooth vertical surface on the working face of the silage pile. g. Silage Additives (select one of the following): i. Inoculate silage with homolactic lactic acid bacteria in accordance with manufacturer recommendations to achieve a concentration of at least 100,000 colony forming units per gram of wet forage; or ii. Apply propionic acid, benzoic acid, sorbic acid, sodium benzoate, or potassium sorbate at a rate specified by the manufacturer to reduce yeast counts when forming silage pile; or iii. Apply other additives at specified rates that have been demonstrated to reduce alcohol concentrations in silage and/or VOC emissions from silage and have been approved by the District and EPA.
2.	Utilize a sealed feed storage system (e.g., Ag-Bag) for silage.
3.	Implement an alternative mitigation measure(s), not listed above.
C. Milking Parlor: An owner/operator of a dairy CAF shall implement at least one (1) of the following mitigation measures in each milking parlor:	
1.	Flush or hose milking parlor immediately prior to, immediately after, or during each milking.
2.	Implement an alternative mitigation measure(s), not listed above.
D. Freestall Barn: An owner/operator of a dairy CAF that houses animals in freestalls shall implement mitigation measures 1 and 2 and at least one (1) additional mitigation measure in each freestall barn:	
1.	Pave feedlanes, where present, for a width of at least eight (8) feet along the corral side of the feedlane fence for milk and dry cows and at least six (6) feet along the corral side of the feedlane for heifers.
2.	Choose one of the following: a. Flush, scrape, or vacuum freestall flush lanes immediately prior to, immediately after, or during each milking; or b. Flush or scrape freestall flush lanes at least three (3) times per day.
3.	Use non-manure-based bedding and non-separated solids based bedding for at least 90% of the bedding material, by weight, for freestalls (e.g. rubber mats, almond shells, sand, or waterbeds).
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Table 4.1 – Dairy CAF Phase II Mitigation Measure Requirements (continued)	
4.	For a large dairy CAF, remove manure that is not dry from individual cow freestall beds or rake, harrow, scrape, or grade freestall bedding at least once every seven (7) days. For a medium dairy CAF, remove manure that is not dry from individual cow freestall beds or rake, harrow, scrape, or grade freestall bedding at least once every fourteen (14) days.
5.	Have no animals in exercise pens or corrals at any time.
6.	Implement an alternative mitigation measure(s), not listed above.
E.	Corrals: An owner/operator of a dairy CAF that houses animals in corrals shall implement mitigation measures 1, 2, 3, 4, 5, and 6 and at least one (1) additional mitigation measure in each corral where animals have been housed in the last thirty (30) days:
1.	Pave feedlanes, where present, for a width of at least 8 feet along the corral side of the feedlane fence for milk and dry cows and at least 6 feet along the corral side of the feedlane for heifers.-
2.	Choose one of the following: a. Clean manure from corrals at least four (4) times per year with at least sixty (60) days between cleaning; or b. Clean corrals at least once between April and July and at least once between September and December.–
3.	Choose one of the following: a. Scrape, vacuum, or flush concrete lanes in corrals at least once every day for mature cows and every seven (7) days for support stock; or b. Clean concrete lanes such that the depth of manure does not exceed twelve (12) inches at any point or time.
4.	Inspect water pipes and troughs and repair leaks at least once every seven (7) days.
5.	Choose one of the following: a. Slope the surface of the corrals at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the corrals at least 1.5% where the available space for each animal is more than 400 square feet per animal; or b. Maintain corrals to ensure proper drainage preventing water from standing more than forty-eight (48) hours; or c. Harrow, rake, or scrape corrals sufficiently to maintain a dry surface.
6.	If the CAF has shade structures, they must choose one of the following: a. Install shade structures such that they are constructed with a light permeable roofing material; or b. Install all shade structures uphill of any slope in the corral; or c. Clean manure from under corral shades at least once every fourteen (14) days, when weather permits access into the corral; or d. Install shade structure so that the structure has a North/South orientation.
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Table 4.1 – Dairy CAF Phase II Mitigation Measure Requirements (continued)	
7.	Manage corrals such that the manure depth in the corral does not exceed twelve (12) inches at any time or point, except for in-corral mounding. Manure depth may exceed 12 inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of 12 inches or lower immediately upon the corral becoming accessible.
8.	Knockdown fence line manure build-up prior to it exceeding a height of twelve (12) inches at any time or point. Manure depth may exceed 12 inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of 12 inches or lower immediately upon the corral becoming accessible.
9.	Choose one of the following: a. Use lime or a similar absorbent material in the corrals according to the manufacturer's recommendation; or b. Apply thymol to the feedlot soil in accordance with the manufacturer's recommendation.
10.	Implement an alternative mitigation measure(s), not listed above.
F.	Solid Manure/Separated Solids: Owners/operators of a large dairy CAF that handle or store solid manure or separated solids outside the animal housing shall implement at least one (1) of the following mitigation measures:
1.	Within seventy-two (72) hours of removal from housing, either: a. Remove dry manure from the facility; or b. Cover dry manure outside the housing with a weatherproof covering from October through May, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.
2.	Within seventy-two (72) hours of removal from the drying process, either: a. Remove separated solids from the facility; or b. Cover separated solids outside the housing with a weatherproof covering from October through May, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.
3.	Implement an alternative mitigation measure(s), not listed above.
G.	Liquid Manure: An owner/operator of a dairy CAF that handles manure in a liquid form shall implement at least one (1) of the following mitigation measures:
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Remove solids from the waste system with a solid separator system, prior to the waste entering the lagoon.
4.	Maintain lagoon pH between 6.5 and 7.5.
5.	Implement an alternative mitigation measure(s), not listed above.

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Table 4.1 – Dairy CAF Phase II Mitigation Measure Requirements (continued)	
H.	Land Application: An owner/operator of a dairy CAF who land applies manure to crop land on the facility shall implement the following applicable mitigation measures:
1.	If the CAF applies solid manure, choose one of the following: a. Incorporate all solid manure within seventy-two (72) hours of land application; or b. Only apply solid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or c. Apply no solid manure with a moisture content of more than 50%; or d. Implement an alternative mitigation measure(s), not listed above.
2.	If the CAF applies liquid manure, choose one of the following: a. Only apply liquid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or b. Allow liquid manure to stand in the fields for no more than twenty-four (24) hours after irrigation; or c. Apply liquid/slurry manure via injection with drag hose or similar apparatus; or d. Implement an alternative mitigation measure(s), not listed above.

5.6.2 Beef Feedlots: Owners/operators of a beef feedlot CAF shall comply with the Phase II mitigation measures in Table 4.2.

Table 4.2 – Beef Feedlot Phase II Mitigation Measure Requirements	
A.	Feed: An owner/operator of a beef feedlot CAF shall implement at least two (2) of the following feed mitigation measures:
1.	Feed according to National Research Council (NRC) guidelines.
2.	Feed steam-flaked, dry rolled, cracked or ground corn or other steam-flaked, dry rolled, cracked or ground cereal grains.
3.	Remove uneaten wet feed from feed bunks within twenty-four (24) hours after the end of a rain event.
4.	Implement an alternative mitigation measure(s), not listed above.
B.	Silage: An owner/operator of a beef feedlot CAF that feeds silage shall implement at least one (1) of the following silage mitigation measures:
1.	Operators selecting this option must choose mitigation measure 1a plus one (1) from mitigation measures 1b, 1c, 1d plus two (2) from mitigation measures 1e, 1f, 1g: a. Cover the surface of silage piles, except for the area where feed is being removed from the pile, with a plastic tarp that is at least five (5) mils thick (0.005 inches), multiple plastic tarps with a cumulative thickness of at least 5 mils (0.005 inches), or an oxygen barrier film covered with a UV resistant material, within seventy-two (72) hours of last delivery of material to the pile.
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Table 4.2 – Beef Feedlot Phase II Mitigation Measure Requirements (continued)

Choose one of the following:

b. Build silage piles such that the average bulk density of silage piles is at least 44 lb/cu ft for corn silage and 40 lb/cu ft for other silage types, as measured in accordance with Section 7.11; or

c. When creating a silage pile, adjust filling parameters to assure a calculated average bulk density of at least 44 lb/cu ft for corn silage and at least 40 lb/cu ft for other silage types, using a spreadsheet approved by the District; or

d. Incorporate all of the following practices when creating silage piles:

i. Harvest silage crop at ≥65% moisture for corn; and ≥60% moisture for alfalfa/ grass and other silage crops; and

ii. Incorporate the following parameters for Theoretical Length of Chop (TLC) and roller opening, as applicable, for the crop being harvested.

Crop Harvested	TLC (inches)	Roller Opening (mm)
Corn with no processing	≤ 1/2 in	N/A
Processed Corn <35% dry matter	≤ 3/4 in	1 - 4 mm
Alfalfa/Grass	≤ 1.0 in	N/A
Wheat/Cereal Grains/Other	≤ 1/2 in	N/A

iii. Manage silage material delivery such that no more than six (6) inches of material are un-compacted on top of the pile.

Choose two of the following:

e. Manage exposed silage (select one of the following):

i. Manage silage piles such that only one silage pile has an uncovered face and the uncovered face has a total exposed surface area of less than 2,150 square feet; or

ii. Manage multiple uncovered silage piles such that the total exposed surface area of all uncovered silage piles is less than 4,300 square feet.

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Table 4.2 – Beef Feedlot Phase II Mitigation Measure Requirements (continued)	
	f. Maintain silage working face (select one of the following): i. Use a shaver/facer to remove silage from the silage pile; or ii. Maintain a smooth vertical surface on the working face of the silage pile. g. Silage Additives (select one of the following): i. Inoculate silage with homolactic lactic acid bacteria in accordance with manufacturer recommendations to achieve a concentration of at least 100,000 colony forming units per gram of wet forage; or ii. Apply propionic acid, benzoic acid, sorbic acid, sodium benzoate, or potassium sorbate at a rate specified by the manufacturer to reduce yeast counts when forming silage pile; or iii. Apply other additives at specified rates that have been demonstrated to reduce alcohol concentrations in silage and/or VOC emissions from silage and have been approved by the District and EPA.
2.	Utilize a sealed feed storage system (e.g., Ag-Bag) for silage.
3.	Implement an alternative mitigation measure(s), not listed above.
C. Housing: An owner/operator of a beef feedlot CAF shall implement mitigation measures 1, 2, 3, and 4 and at least one (1) additional mitigation measure in each of the animal housing structures (e.g. each corral, etc.):	
1.	Scrape corrals twice a year with at least ninety (90) days between cleanings, excluding the removal of in-corral mounds.
2.	Inspect water pipes and troughs and repair leaks at least once every seven (7) days.
3.	Choose one of the following: a. Slope the surface of the corrals at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the corrals at least 1.5% where the available space for each animal is more than 400 square feet per animal. b. Maintain corrals to ensure proper drainage preventing water from standing more than forty-eight (48) hours; or c. Harrow, rake, or scrape corrals sufficiently to maintain a dry surface, unless the corrals have not held animals in the last thirty (30) days.
4.	If the CAF has shade structures, they must choose with one of the following: a. Install shade structures such that they are constructed with a light permeable roofing material; or b. Install all shade structures uphill of any slope in the corral; or c. Install shade structure so that the structure has a North/South orientation.
5.	Manage corrals and concrete lanes such that the dry manure depth in the pen does not exceed twelve (12) inches at any time or point, except for in-corral mounds. Manure depth may exceed twelve (12) inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of twelve (12) inches or lower immediately upon the corral becoming accessible.
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Table 4.2 – Beef Feedlot Phase II Mitigation Measure Requirements (continued)	
6.	Knockdown fence line manure build-up prior to it exceeding a height of twelve (12) inches at any time or point. Manure depth may exceed twelve (12) inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of twelve (12) inches or lower immediately upon the corral becoming accessible.
7.	Implement an alternative mitigation measure(s), not listed above.
D.	Solid Manure/Separated Solids: An owner/operator of a beef feedlot CAF that handles or stores solid manure or separated solids outside the animal housing shall implement at least one (1) of the following mitigation measures:
1.	Choose one of the following: a. Within 72 hours of removal from animal housing, either remove dry manure from the facility or, during the months of October through May, cover dry manure pile with a weatherproof covering, except for times, not to exceed twenty-four (24) hours per event, when wind events remove the covering.; or b. Manage moisture content of manure to less than 50%.
2.	Implement an alternative mitigation measure(s), not listed above.
E.	Liquid Manure: An owner/operator of a beef feedlot CAF that handles manure in a liquid form shall implement at least one (1) of the following mitigation measures:
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Remove solids from the waste system with a solid separator system, prior to the waste entering the lagoon.
4.	Maintain lagoon pH between 6.5 and 7.5.
5.	Implement an alternative mitigation measure(s), not listed above.
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Table 4.2 – Beef Feedlot Phase II Mitigation Measure Requirements (continued)	
F.	Land Application: An owner operator of a beef feedlot CAF who land applies manure to crop land on the facility shall implement the following applicable mitigation measures:
1.	If the CAF applies solid manure, choose one of the following: a. Incorporate all solid manure within seventy-two (72) hours of land application; or b. Only apply solid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or c. Apply no solid manure with a moisture content of more than 50%; or d. Implement an alternative mitigation measure(s), not listed above.
2.	If the CAF applies liquid manure, choose one of the following: a. Only apply liquid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or b. Allow liquid manure to stand in the fields for no more than twenty-four (24) hours after irrigation; or c. Apply liquid/slurry manure via injection with drag hose or similar apparatus; or d. Implement an alternative mitigation measure(s), not listed above.

5.6.3 Other Cattle CAF: Owners/operators of an other cattle CAF shall comply with the Phase II mitigation measures in Table 4.3.

Table 4.3 – Other Cattle Phase II Mitigation Measure Requirements	
A.	Feed: An owner/operator of an other cattle CAF shall implement at least two (2) of the following feed mitigation measures:
1.	Feed according to National Research Council (NRC) guidelines.
2.	Feed steam-flaked, dry rolled, cracked or ground corn or other steam-flaked, dry rolled, cracked or ground cereal grains.
3.	Remove uneaten wet feed from feed bunks within twenty-four (24) hours after the end of a rain event.
4.	Implement an alternative mitigation measure(s), not listed above.
B.	Silage: An owner/operator of an other cattle CAF that feeds silage shall implement at least one (1) of the following silage mitigation measures:
1.	Operators selecting this option must choose mitigation measure 1a plus one (1) from mitigation measures 1b, 1c, 1d plus two (2) from mitigation measures 1e, 1f, 1g: a. Cover the surface of silage piles, except for the area where feed is being removed from the pile, with a plastic tarp that is at least five (5) mils thick (0.005 inches), multiple plastic tarps with a cumulative thickness of at least 5 mils (0.005 inches), or an oxygen barrier film covered with a UV resistant material, within seventy-two (72) hours of last delivery of material to the pile.
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Table 4.3 – Other Cattle Phase II Mitigation Measure Requirements

Choose one of the following:

b. Build silage piles such that the average bulk density of silage piles is at least 44 lb/cu ft for corn silage and 40 lb/cu ft for other silage types as measured in accordance with Section 7.11; or

c. When creating a silage pile, adjust filling parameters to assure a calculated average bulk density of at least 44 lb/cu ft. for corn silage and at least 40 lb/cu ft for other silage types using a spreadsheet approved by the District; or

d. Incorporate all of the following practices when creating silage piles:

i. Harvest silage crop at ≥65% moisture for corn; and ≥60% moisture for alfalfa/ grass and other silage crops; and

ii. Incorporate the following parameters for Theoretical Length of Chop (TLC) and roller opening, as applicable, for the crop being harvested.

Crop Harvested	TLC (inches)	Roller Opening (mm)
Corn with no processing	≤ 1/2 in	N/A
Processed Corn <35% dry matter	≤ 3/4 in	1 - 4 mm
Alfalfa/Grass	≤ 1.0 in	N/A
Wheat/Cereal Grains/Other	≤ 1/2 in	N/A

iii. Manage silage material delivery such that no more than six (6) inches of material are un-compacted on top of the pile.

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Table 4.3 – Other Cattle Phase II Mitigation Measure Requirements (continued)	
	Choose one of the following: e Manage exposed silage (select one of the following): i. Manage silage piles such that only one silage pile has an uncovered face and the uncovered face has a total exposed surface area of less than 2,150 square feet; or ii. Manage multiple uncovered silage piles such that the total exposed surface area of all uncovered silage piles is less than 4,300 square feet. f. Maintain silage working face (select one of the following): i. Use a shaver/facer to remove silage from the silage pile; or ii. Maintain a smooth vertical surface on the working face of the silage pile. g. Silage Additives (select one of the following): i. Inoculate silage with homolactic lactic acid bacteria in accordance with manufacturer recommendations to achieve a concentration of at least 100,000 colony forming units per gram of wet forage; or ii. Apply propionic acid, benzoic acid, sorbic acid, sodium benzoate, or potassium sorbate at a rate specified by the manufacturer to reduce yeast counts when forming silage pile; or iii. Apply other additives at specified rates that have been demonstrated to reduce alcohol concentrations in silage and/or VOC emissions from silage and have been approved by the District and EPA.
2.	Utilize a sealed feed storage system (e.g., Ag-Bag) for silage.
3.	Implement an alternative mitigation measure(s), not listed above.
C.	Freestalls: An owner/operator of an other cattle CAF that houses animals in freestalls shall implement mitigation measures 1 and 2 and at least one (1) additional mitigation measure in each freestall barn:
1.	Vacuum, scrape, or flush freestalls at least once every seven (7) days.
2.	Pave feedlanes, where present, for a width of at least six (6) feet along the corral side of the feedlane.
3.	Use non-manure-based bedding and non-separated solids based bedding for at least 90% of the bedding material, by weight, for freestalls (e.g. rubber mats, almond shells, sand, or waterbeds).
4.	Remove manure that is not dry from individual cow freestall beds or rake, harrow, scrape, or grade bedding in freestalls at least once every seven (7) days.
5.	Implement an alternative mitigation measure(s), not listed above.
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Table 4.3 – Other Cattle Phase II Mitigation Measure Requirements (continued)	
D.	Corrals: An owner/operator of a other cattle CAF that houses animals in corrals shall implement mitigation measures 1, 2, 3, 4, and 5 and at least one (1) additional mitigation measure in each corral where animals have been housed in the last thirty (30) days:
1.	Scrape corrals twice a year with at least 90 days between cleanings, excluding in-corral mounds.
2.	Choose one of the following: a. Scrape, vacuum, or flush concrete lanes in corrals at least once every seven (7) days; or b. Clean concrete lanes such that the depth of manure does not exceed twelve (12) inches at any point or time.
3.	Inspect water pipes and troughs and repair leaks at least once every seven (7) days.
4.	Choose one of the following: a. Slope the surface of the corrals at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the corrals at least 1.5% where the available space for each animal is more than 400 square feet per animal. b. Maintain corrals to ensure proper drainage preventing water from standing more than forty-eight (48) hours; or c. Harrow, rake, or scrape corrals and corrals sufficiently to maintain a dry surface, unless the corrals have not held animals in the last thirty (30) days.
5.	If the CAF has shade structures, they must choose one of the following: a. Install shade structures such that they are constructed with a light permeable roofing material; or b. Install all shade structures uphill of any slope in the corral; or c. Install shade structure so that the structure has a North/South orientation.
6.	Manage corrals and concrete lanes such that the dry manure depth in the pen does not exceed twelve (12) inches at any time or point, except for in-corral mounds. Manure depth may exceed twelve (12) inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of twelve (12) inches or lower immediately upon the corral becoming accessible.
7.	Knockdown fence line manure build-up prior to it exceeding a height of twelve (12) inches at any time or point. Manure depth may exceed twelve (12) inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of twelve (12) inches or lower immediately upon the corral becoming accessible.
8.	Choose one of the following: a. Use lime or a similar absorbent material in the corrals according to the manufacturer's recommendation; or b. Apply thymol to the feedlot soil in accordance with the manufacturer's recommendation.
9.	Implement an alternative mitigation measure(s), not listed above.
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Table 4.3 – Other Cattle Phase II Mitigation Measure Requirements (continued)	
E.	Solid Manure/Separated Solids: An owner operator of an other cattle CAF that handles or stores solid manure or separated solids outside the animal housing shall implement at least one (1) of the following mitigation measures:
1.	Within seventy-two (72) hours of removal from housing, either: a. Remove dry manure from the facility; or b. Cover dry manure outside the housing with a weatherproof covering from October through May, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.
2.	Within seventy-two (72) hours of removal from the drying process, either: a. Remove separated solids from the facility; or b. Cover separated solids outside the housing with a weatherproof covering from October through May, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.
3.	Implement an alternative mitigation measure(s), not listed above.
F.	Liquid Manure: An owner/operator of an other cattle CAF that handles manure in a liquid form shall implement at least one (1) of the following mitigation measures:
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Remove solids from the waste system with a solid separator separation system.
4.	Maintain lagoon pH between 6.5 and 7.5.
5.	Implement an alternative mitigation measure(s), not listed above.
G.	Land Application: An owner/operator of an other cattle CAF who land applies manure to crop land on the facility shall implement the following applicable mitigation measures:
1.	If the CAF applies solid manure, choose one of the following: a. Incorporate all solid manure within seventy-two (72) hours of land application; or b. Only apply solid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or c. Apply no solid manure with a moisture content of more than 50%; or d. Implement an alternative mitigation measure(s), not listed above.
2.	If the CAF applies liquid manure, choose one of the following: a. Only apply liquid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or b. Allow liquid manure to stand in the fields for no more than twenty-four (24) hours after irrigation; or c. Apply liquid/slurry manure via injection with drag hose or similar apparatus; or d. Implement an alternative mitigation measure(s), not listed above.

5.6.4 Swine CAF: An owner/operator of a swine CAF shall comply with the Phase II mitigation measures in Table 4.4.

Table 4.4 – Swine Phase II Mitigation Measure Requirements	
A.	Feed: Owners/operators of a swine CAF shall implement at least two (2) of the following feed mitigation measures:
1.	Use grain with an average particle size diameter between 300-800 microns.
2.	Utilize phase feeding and split-sex feeding programs to more closely match the nutrient requirements of animals.
3.	Implement an alternative mitigation measure(s), not listed above.
B.	Housing: Owners/operators of a swine CAF shall implement at least three (3) of the following mitigation measures in each animal housing unit:
1.	Use a slatted floor system (slatted floors over deep pits or shallow flush alleys), with daily manure removal for shallow flush alleys and weekly removal from deep pits.
2.	Manage pens such that the manure depth in the pen does not exceed twelve (12) inches at any time or point.
3.	Inspect water pipes and troughs and repair leaks at least once every seven (7) days.
4.	Implement an alternative mitigation measure(s), not listed above.
C.	Liquid Manure: Owners/operators of a swine CAF that handle manure in a liquid form shall implement at least one (1) of the following mitigation measures:
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Maintain lagoon pH between 6.5 and 7.5.
4.	Implement an alternative mitigation measure(s), not listed above.
D.	Land Application: Owners/operators of a swine CAF who land apply liquid manure to crop land on the facility shall implement one (1) of the following mitigation measures:
1.	Allow liquid manure to stand in the fields for no more than twenty-four (24) hours after irrigation.
2.	Implement an alternative mitigation measure(s), not listed above.

5.6.5 Layer CAF: An owner/operator of a layer CAF shall comply with the Phase II mitigation measures in Table 4.5.

Table 4.5 – Layer Phase II Mitigation Measure Requirements	
A.	Feed: Owners/operators of a layer CAF shall implement at least one (1) of the following feed mitigation measures:
1.	Choose one of the following: a. Feed according to NRC guidelines; or b. Feed animals probiotics designed to improve digestion according to manufacturer recommendations; or c. Feed animals an amino acid supplemented diet to meet their nutrient requirements; or d. Feed animals feed additives such as amylase, xylanase, and protease, designed to maximize digestive efficiency according to manufacturer recommendations.
2.	Implement an alternative mitigation measure(s), not listed above.
B.	Housing: Owners/operators of a layer CAF shall implement at least two (2) of the following housing mitigation measures:
1.	Use drinkers that do not drip continuously.
2.	Inspect water pipes and drinkers and repair leaks daily.
3.	Implement an alternative mitigation measure(s), not listed above.
C.	Solid Manure/Separated Solids: Owners/operators of a layer CAF that handle or store solid litter/manure or separated solids outside the animal housing shall implement at least one (1) of the following mitigation measures:
1.	Within seventy-two (72) hours of removal from housing, either: a. Remove all litter/manure from the facility; or b. Cover litter/manure outside the housing with a weatherproof covering from October through May, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.
2.	Implement an alternative mitigation measure(s), not listed above.
D.	Liquid Manure: Owners/operators of a layer CAF that handle manure in a liquid form shall implement at least one (1) of the following mitigation measures:
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Maintain lagoon pH between 6.5 and 7.5.
4.	Implement an alternative mitigation measure(s), not listed above.

5.6.6 Broiler, Duck, or Turkey CAF: An owner/operator of a chicken broiler, duck, or turkey CAF shall comply with the Phase II mitigation measures in Table 4.6.

Table 4.6 – Broiler, Duck, or Turkey Phase II Mitigation Measure Requirements	
A. Feed: Owners/operators of a broiler, duck, or turkey CAF shall implement at least one (1) of the following feed mitigation measures:	
1.	Choose one of the following: a. Feed according to NRC guidelines; or b. Feed animals probiotics designed to improve digestion according to manufacturer recommendations; or c. Feed animals an amino acid supplemented diet to meet their nutrient requirements; or d. Feed animals feed additives such as amylase, xylanase, and protease, designed to maximize digestive efficiency according to manufacturer recommendations.
2.	Implement an alternative mitigation measure(s), not listed above.
B. Housing: Owners/operators of a broiler or duck CAF shall implement at least four (4) of the following housing mitigation measures: Owners/operators of a turkey CAF shall implement at least five (5) of the following housing mitigation measures:	
1.	Use a dry housing cleaning method at all times, except when a wet cleaning method is required for animal health or biosecurity issues, pursuant to Section 5.4.
2.	Use drinkers that do not drip continuously.
3.	Inspect drinkers at least once every seven (7) days and adjust the height, volume, and location of drinkers if necessary.
4.	Inspect water pipes and drinkers and repair leaks daily.
5.	If the facility houses turkeys in pens, install mounds or berms up gradient to prevent the runoff of storm water into pens.
6.	Implement an alternative mitigation measure(s), not listed above.
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Table 4.6 – Broiler, Duck, or Turkey Phase II Mitigation Measure Requirements (continued)	
C.	Solid Manure/Separated Solids: Owners/operators of a broiler, duck, or turkey CAF that handles or stores solid litter/manure or separated solids outside the animal housing shall implement at least one (1) of the following mitigation measures:
1.	Within seventy-two (72) hours of removal from housing, either: a. Remove all litter/manure from the facility; or b. Cover litter/manure outside the housing with a weatherproof covering from October through May, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.
2.	Implement an alternative mitigation measure(s), not listed above.
D.	Liquid Manure: Owners/operators of a broiler, duck, or turkey CAF that handles manure in a liquid form shall implement at least one (1) of the following mitigation measures:
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Maintain lagoon pH between 6.5 and 7.5.
4.	Implement an alternative mitigation measure(s), not listed above.

6.0 Monitoring Requirements

Owners/operators shall comply with the requirements of Section 6.1 when implementing all applicable Phase II Mitigation Measures in Section 5.6.

6.1 Lagoon Monitoring

Owners/operators using a mitigation measure for a lagoon in their approved emission mitigation plan shall monitor the lagoon for the required parameter(s), as determined by the APCO and EPA, at least once every calendar quarter, with at least 30 days between monitoring tests.

7.0 Administrative Requirements

7.1 Records for Exempt CAFs

An owner/operator claiming exemption pursuant to Section 4.0 shall maintain records on a quarterly basis of the number and type of animals and production group at the facility. Examples of records that may be used to show proof of exemption include, but are not limited to, Dairy Herd Improvement Association records and animal inventories maintained for financial purposes.

7.2 General Records for CAFs Subject to Section 5.0 Requirements

7.2.1 Permits: Owners/operators shall maintain copies of all facility permits.

7.2.2 Number of Animals: Owner/operators shall maintain records of the number of animals of each species and production group at the facility on a quarterly basis. Examples of records that may be used include, but are not limited to, Dairy Herd Improvement Association records and animal inventories done for financial purposes.

7.2.3 Owner/operators shall maintain records sufficient to demonstrate compliance with all applicable mitigation measures.

7.3. Records for Feed and Silage Mitigation Measures

7.3.1 Feed Content/Feed Additive: Records of feed content, formulation, and quantity of feed additive utilized, sufficient to verify compliance with approved feed content and feed additive mitigation measures. Records may include laboratory test results and other test results.

7.3.2 Feed Processing: Records sufficient to verify that feed was given to animals (for example, put in feed bunks) or disposed of within the time allowed by the approved mitigation measure.

7.3.3 Feed Removal: Records demonstrating that feed is removed within the specified time period.

7.3.4 Feed Storage: Records demonstrating that feed was kept in weatherproof storage for the required period. Records for feed storage shall be required when implementing the Phase II mitigation measures.

7.3.5 Feed Moisture Content: Records for annual testing to determine moisture content of mixed ration food that contains at least 30% by weight of silage. Records for feed moisture content shall be required when implementing the Phase II mitigation measures.

7.3.6 Silage Covers: Records demonstrating that silage was covered, including the thickness of the cover, in compliance with any silage mitigation measures chosen. Examples of records that show compliance include, but are not limited to, invoices demonstrating that silage covers were installed and maintained at the facility, cover thickness, records demonstrating the thickness of the silage cover, and maintenance records for repair or replacement of damaged covers.

7.3.7 Silage Pile Bulk Density at Pile Formation: Records of required practices used to ensure adequate bulk density of silage piles and/or measured bulk density of silage piles. Records for silage bulk density shall be required when implementing the Phase II mitigation measures.

7.3.8 Silage Pile Formation: Records demonstrating that silage piles were formed in compliance with any silage mitigation measures chosen. Examples of records that show compliance include, but are not limited to, moisture content of silage pile material, records of the length of cut for the crop being harvested, records of silage material delivery date, records that there are no more than six inches of material un-compacted on top of the pile of silage piles. Records for silage pile formation shall be required when implementing the Phase II mitigation measures.

7.3.9 Silage Leachate: Records demonstrating that the leachate was collected either by an active or passive system and the system was maintained in a manner approved by the APCO and EPA. Examples of records that show compliance include, but are not limited to, design specification for the system and a maintenance checklist for inspections and repairs.

7.3.10 Exposed Silage: Records demonstrating that silage piles are managed such that exposed surface area is in compliance with any silage mitigation measures chosen. Records for exposed silage shall be required when implementing the Phase II mitigation measures.

7.3.11 Silage Inoculation: Records demonstrating silage inoculation with either homolactic lactic acid bacteria, propionic acid, benzoic acid, sorbic acid sodium benzoate, or potassium sorbate. Records shall include rate specified by manufacturer and rate applied by operator/owner, date of inoculation and date of silage pile formation completion. Records for silage inoculation shall be required when implementing the Phase II mitigation measures.

7.3.12 VOC Emission Control Systems: Source test results, monitoring/inspection logs and maintenance logs.

7.3.13 Weatherproof Coverings: Records verifying that any covers used are installed, used, and maintained in accordance with manufacturer recommendations and any applicable standard approved by the APCO and EPA. For covers removed by wind events, an estimate of when the cover was removed and documentation of when the cover was replaced.

7.3.14 Alternative Feed or Silage Mitigation Measures: Records sufficient to verify compliance with each approved alternative mitigation measure to the satisfaction of the APCO and EPA.

7.4 Records for Milking Parlor Mitigation Measures

Records verifying that the milking parlor was flushed or hosed immediately prior to, immediately after, or during each milking.

7.5 Records for Freestall/Corral/Animal Housing

7.5.1 Bedding Material: Records of the material(s) used for animal bedding, including the percentage of non-manure. Records for bedding material shall be required when implementing the Phase II mitigation measures.

7.5.2 Clean/Scrape/Flush/Vacuum: Records sufficient to demonstrate that the removal of manure/bedding was performed as required in the approved mitigation measure. This may be a log when owners/operators initial that they performed all applicable practices.

7.5.3 Depth of Manure: Records demonstrating the measurement of the manure depth and measures taken to remove material greater than the amount allowed by the mitigation measure.

7.5.4 Foggers: Records, such as design specifications, demonstrating that foggers used to comply with rule requirements meet the required standards.

7.5.5 Lime, Thymol, and Eugenol: Records of the quantity of material applied and the area over which it was applied. Owners/operators shall also maintain manufacturer's product application recommendations to demonstrate compliance with the recommendations.

7.5.6 Litter Additives: Records, including a copy of the manufacturer's recommendations, which demonstrate litter additives used to comply with rule requirements are administered in accordance with manufacturer's specifications.

7.5.7 Roof Structure/Runoff: Records such as design specifications and maintenance logs demonstrating that any roof runoff structures used to comply with rule are in compliance with applicable standards in NRCS Field Office Technical Guide Code 558 or other applicable standards approved by the APCO and EPA.

7.5.8 Shade Structures: Records, such as design specifications, demonstrating that any shade structures used to comply with rule requirements meet the required standards.

7.5.9 Slope/Drainage: Records sufficient to verify that harrowing and sloping of corrals used to comply with rule requirements are implemented as required in the rule.

7.5.10 Vacuum/Land Apply Cattle Waste: Records showing time of vacuuming and time of land application of the vacuumed solids.

7.5.11 VOC Emission Control Systems: Source test results, monitoring/inspection logs and maintenance logs.

7.5.12 Water Pipes, Drinkers, and Water Troughs: Records of inspections performed and repairs completed.

7.5.13 Wet Feed Removal: Records verifying that animal housing was inspected for wet feed after a rain event/inspection and that the wet feed was removed.

7.5.14 Alternative Freestall/Corral/Animal Housing Mitigation Measure: Records that demonstrate compliance with each approved alternative mitigation measure to the satisfaction of the APCO and EPA.

7.6 Records for Solid Manure/Separated Solids Outside of Animal Housing

7.6.1 Aerated Static Pile: Records of monitoring/inspection logs and maintenance logs.

7.6.2 Removal of Manure/Separated Solids: Records sufficient to verify when the waste was removed from freestall/corral/animal housing and when the waste was either removed from the facility or land incorporated.

7.6.3 Storage of Manure/Separated Solids in an Aerobic/Anaerobic Digester

7.6.3.1 Records, such as design specifications and maintenance logs, demonstrating that any aerobic/anaerobic digesters used to comply with rule requirements meets the standards in NRCS Field Office Technical Guide Code 366 or 365 or other applicable standards approved by the APCO and EPA.

7.6.3.2 Records of the quantity of manure/separated solids, as needed, to comply with the approved Phase II mitigation measure.

7.6.4 VOC Emission Control Systems: Source test results, monitoring/inspection logs and maintenance logs.

7.6.5 Weatherproof Coverings: Records verifying that any covers used are installed, used, and maintained in accordance with manufacturer recommendations and any applicable standard approved by the APCO and EPA. For covers removed by wind events, an estimate of when the cover was removed and documentation of when the manure/separated solid piles were re-covered.

7.6.6 Alternative Solid Manure/Separated Solids Mitigation Measure: Records that demonstrate compliance with each approved alternative mitigation measure to the satisfaction of the APCO and EPA.

7.7 Records for Liquid Manure

7.7.1 Lagoons

7.7.1.1 Test results of the approved monitoring parameter and records of measures taken to bring the parameter within specified limits.

7.7.1.2 Design specifications demonstrating that the lagoon meets the requirements listed in the NRCS Field Office Technical Guide for the lagoon type or other applicable standards approved by the APCO and EPA.

7.7.2 Solids Separator System

7.7.2.1 Records, such as design specifications and maintenance logs, demonstrating that the solids separator system meets the approved mitigation measure specifications and is operated and maintained as recommended by the manufacturer.

7.7.2.2 Non-Standard Chemicals: Record the quantity of material used. Owners/operators shall also maintain manufacturer's product usage recommendations to demonstrate compliance with the manufacturer's recommendations.

7.7.2.3 Non-Standard Equipment for Solid Separator System: Records, such as design specifications and maintenance logs, demonstrating that the solids separator equipment meets the approved mitigation measure specifications and is operated and maintained as recommended by the manufacturer.

7.7.3 VOC Emission Control Systems, including biofilters and other VOC emission control systems: Source test results, monitoring/inspection logs and maintenance logs.

7.7.4 Alternative Liquid Manure Mitigation Measures: Records that demonstrate compliance with the approved alternative mitigation measure, to the satisfaction of the APCO and EPA.

7.8 Records for Land Application of Manure

7.8.1 Time to Incorporate Manure: Records indicating the time the manure was applied and when the waste was incorporated into the soil.

7.8.2 Lagoon-Treated or Digester-Treated Manure: Records that demonstrate that the applied manure came from an aerobic lagoon, an anaerobic treatment lagoon or a digester system.

7.8.3 Liquid Waste Standing in Field: Records that demonstrate that liquid manure does not remain in the field for longer than twenty-four (24) hours after application.

7.8.4 Moisture Content of Solid Manure: Records of the moisture content of applied solid manure.

7.9 Records Retention

Owners/operators of a CAF subject to the requirements of Section 5.0 shall keep and maintain the required in Sections 7.1 through 7.8.4, as applicable, for a minimum of five (5) years and the records shall be made available to the APCO and EPA upon request.

7.10 Source Testing Requirements

7.10.1 Owners/operators shall conduct an initial source test of all VOC control devices and aerated static piles used to comply with rule requirements not later than six (6) months after the date of installation, and at least once every twelve (12) months thereafter unless the APCO, ARB, and EPA determines more frequent testing is required to demonstrate compliance with rule requirements.

7.10.2 Owners/operators using phototropic lagoons as a mitigation measure in their emission mitigation plan shall test lagoons for bacteria concentration, bacteriochlorophyll concentration, or a surrogate parameter determined by the APCO, ARB, and EPA not later than six (6) months after the date of issuance of the permit, and least once every twelve (12) months thereafter unless the APCO, ARB, and EPA determines more frequent testing is required to demonstrate compliance with rule requirements.

7.10.3 Owners/operators using aerobic lagoons as a mitigation measure in their emission mitigation plan shall test lagoons for dissolved oxygen content not later than six (6) months after the date of issuance of the permit, and at least once every twelve (12) months thereafter, unless the APCO, ARB, and EPA determines more frequent testing is required to demonstrate compliance with rule requirements.

7.10.4 Owners/operators using mechanically aerated lagoons as a mitigation measure in their emission mitigation plan shall test lagoons for biological oxygen demand within six (6) months after the date of issuance of the permit, and at least once every twelve (12) months thereafter, unless the APCO, ARB, and EPA determines more frequent testing is required to demonstrate compliance with rule requirements.

7.10.5 Owners/operators using lagoon pH as a mitigation measure in their emission mitigation plan shall test lagoons for pH within six (6) months after the date of issuance of the permit, and at least once every twelve (12) months thereafter, unless the APCO, ARB, and EPA determines more frequent testing is required to demonstrate compliance with rule requirements.

7.10.6 Owners/operators shall test any other parameters determined necessary by the APCO, ARB, and EPA to demonstrate compliance with rule requirements as frequently as determined necessary by the APCO, ARB, and EPA.

7.11 Test Methods

Owners/operators shall conduct applicable testing using the following methods or any other alternative test method approved by the APCO and EPA. Test methods referenced shall be the latest approved version.

7.11.1 Bacterial Concentration – ASTM D4454 - 85(2009) Standard Test Method for Simultaneous Enumeration of Total and Respiring Bacteria in Aquatic Systems by Microscopy or ASTM D4455 - 85(2009) Standard Test Method for Enumeration of Aquatic Bacteria by Epifluorescence Microscopy Counting Procedure.

7.11.2 Bacteriochlorophyll a Concentration – ASTM D3731 – 87 (2004) Standard Practices for Measurement of Chlorophyll Content of Algae in Surface Waters.

7.11.3 Biological Oxygen Demand – EPA Method 405.1 (Biochemical Oxygen Demand (5 days, 20°C)).

7.11.4 Bulk Packing Density of Silage Piles – Remove representative samples of known volume using a forage probe or other instrument and weighing the samples. Bulk density is the weight of the sample divided by the volume of material removed from the pile. The bulk density shall be determined as the average of at least three representative samples per silage pile.

7.11.5 Biofilter Control Efficiency – The control efficiency of a biofilter shall be determined using SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources). The SCAQMD 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. Samples from more than one location may be combined (composited) per SCAQMD Rule 1133.2 Attachment A Section 8.

7.11.6 Non-Biofilter Control Efficiency – The control efficiency of a VOC emission control system that is not a biofilter shall be determined using:

7.11.6.1 EPA Methods 2 (Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)), 2A (Volume Meters), or 2D (Rate Meters) for measuring flow rates.

7.11.6.2 EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device.

7.11.6.3 EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

7.11.7 Dissolved Oxygen – EPA Method 360.1 (Oxygen, Dissolved (Membrane Electrode)) or 360.2 (Oxygen, Dissolved (Modified Winkler, Full-Bottle Technique)).

7.11.8 Moisture Content for Biofilters – Test Methods for the Examination of Compost and Composting (TMECC) Method 3.09 (Total Solids and Moisture at 70 ± 5 degrees Centigrade).

7.11.9 Moisture Content for Silage – Soil, Plant and Water Reference Methods for the Western Region [Third Edition, 2005] Test Method P1.10 (Dry Matter Content - Gravimetric), or American Association of Agricultural and Biological Engineers (ASABE) Standard S358.2, National Forage Testing Association (NFTA) Methods 2.1.3 and 2.1.4, AOAC Methods: 930.15, 934.01, 991.01, and 2001.12.

7.11.10 Organic Loading - Standard Methods of the Examination of Water and Wastewater Method 2540 G – Solids.

7.11.11 pH – EPA Method 150.2 (pH, Electrometric) or TMECC Method 04.11-A (1:5 Slurry pH)

7.11.12 Temperature – EPA Method 170.1 (Temperature – Thermometric)

7.11.13 Alternative Test Methods – An operator may use an alternative test method to those listed in Sections 7.11.1 through 7.11.13 for which written approval of the APCO and EPA has been obtained.

8.0 Compliance Schedule

8.1 Owners/operators of facilities subject to the Regulatory Threshold requirements of this rule under Table 2 shall submit a complete Permit-to-Operate or Authority-to-Construct application for the Phase II requirements in Section 5.6 by April 21, 2011 that complies with all applicable provisions of this rule.

8.1.1 Owners/operators shall comply with all provisions of Phase II requirements on and after 365 days from the Authority-to-Construct or Permit-to-Operate issuance date, whichever is earlier.

8.1.2 Owners/operators of Large CAFs shall comply with the Phase I requirements in Section 5.5 until demonstrating full compliance with Phase II requirements in Section 5.6.

8.2 Owners/operators of new or modified facilities that become subject to the Regulatory Threshold requirements of this rule under Table 2 shall comply with the Phase II requirements of Section 5.6.

RULE 4601 ARCHITECTURAL COATINGS (Adopted April 11, 1991; Amended December 17, 1992; Amended September 17, 1997; Amended October 31, 2001; Amended December 17, 2009; Amended April 16, 2020)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from architectural coatings. This rule specifies architectural coatings storage, cleanup, and labeling requirements.

2.0 Applicability

This rule is applicable to any person who supplies, markets, sells, offers for sale, applies, or solicits the application of any architectural coating, or who manufactures, blends or repackages any architectural coating for use within the District.

3.0 Definitions

3.1 Adhesive: Any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.

3.2 Aerosol Coating Product: 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.

3.3 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.4 Air Resources Board (ARB): as defined in Rule 1020 (Definitions).

3.5 Aluminum Roof Coating: A coating labeled and formulated exclusively for application to roofs and containing at least 84 grams of elemental aluminum pigment per liter of coating (at least 0.7 pounds per gallon). Pigment content shall be determined in accordance with SCAQMD Method 318-95, incorporated by reference in Section 6.3.9.

3.6 Appurtenance: Any accessory to a stationary structure coated at the site of installation, whether installed or detached, including but not limited to: bathroom and kitchen fixtures; cabinets; concrete forms; doors; elevators; fences; hand railings; heating equipment, air conditioning equipment, and other fixed mechanical equipment or stationary tools; lampposts; partitions; pipes and piping systems; rain gutters and downspouts; stairways, fixed ladders, catwalks, and fire escapes; and window screens.

3.7 Architectural Coating: A coating to be applied to stationary structures or their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. Coatings applied in shop applications or to non-stationary structures such as airplanes, ships, boats, railcars, and automobiles, and adhesives are not considered architectural coatings for the purposes of this rule.

3.8 Basement Specialty Coating: A clear or opaque coating that is labeled and formulated for application to concrete and masonry surfaces to provide a hydrostatic seal for basements and other below-grade surfaces. Basement Specialty Coatings must meet the following criteria:

3.8.1 Coating must be capable of withstanding at least 10 psi of hydrostatic pressure, as determined in accordance with ASTM D7088-417, which is incorporated by reference in Section 6.3.17.

3.8.2 Coating must be resistant to mold and mildew growth and must achieve a microbial growth rating of 8 or more, as determined in accordance with ASTM D3273-16 and ASTM D3274-09 (2017), incorporated by reference in Section 6.3.243.

3.9 Bitumens: Black or brown materials including, but not limited to, asphalt, tar, pitch, and asphaltite that are soluble in carbon disulfide, consist mainly of hydrocarbons, and are obtained from natural deposits or as residues from the distillation of crude petroleum or coal.

3.10 Bituminous Roof Coating: A coating which incorporates bitumens that is labeled and formulated exclusively for roofing.

3.11 Bituminous Roof Primer: A primer which incorporates bitumens that is labeled and formulated exclusively for roofing and intended for the purpose of preparing a weathered or aged surface or improving adhesion of subsequent surface components.

3.12 Bond Breaker: A coating labeled and formulated for application between layers of concrete to prevent a freshly poured top layer of concrete from bonding to the layer over which it is poured.

3.13 Building Envelope: The ensemble of exterior and demising partitions of a building that enclose conditioned space.

3.14 Building Envelope Coating: The fluid applied coating 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 strand board (OSB), gypsum board, and wood substrates and must meet the following performance criteria:

3.14.1 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/ft2 @ 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 E2178-13, incorporated by reference in subsection 6.3.28; and/or

3.14.2 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:

3.14.2.1 Passes water resistance testing accordance to ASTM E331-00 (2016), incorporated by reference in subsection 6.3.29 and

3.14.2.2 Water vapor permeance is classified in accordance with ASTM E96/96M-16, incorporated by reference in subsection 6.3.30.

3.15 Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.16 Colorant: A concentrated pigment dispersion in water, solvent, and/or binder that is added to an architectural coating after packaging in sale units to produce the desired color. Colorants must be labeled in accordance with Section 6.1.12.

3.17 Concrete Curing Compound: A coating labeled and formulated for application to freshly poured concrete to retard the evaporation of water, or harden or dustproof the surface of freshly poured concrete.

3.18 Concrete/Masonry Sealer: A clear or opaque coating that is labeled and formulated primarily for application to concrete and masonry surfaces to prevent penetration of water, provide resistance against abrasion, alkalis, acids, mildew, staining, or ultraviolet light, or harden or dustproof the surface of aged or cured concrete.

3.19 Driveway Sealer: A coating labeled and formulated for application to worn asphalt driveway surfaces to fill cracks, seal the surface to provide protection, or to restore or preserve the appearance.

3.20 Dry Fog Coating: A coating labeled and formulated only for spray application such that overspray droplets dry before subsequent contact with incidental surfaces in the vicinity of the surface coating activity.

3.21 EPA: United States Environmental Protection Agency.

3.22 Exempt Compound: A compound identified as exempt under the definition of Volatile Organic Compound (VOC), as defined in Rule 1020 (Definitions).

3.23 Faux Finishing Coating: A coating labeled and formulated to meet one or more of the following criteria:

3.23.1 A glaze or textured coating used to create artistic effects, including, but not limited to: dirt, suede, old age, smoke damage, and simulated marble and wood grain; or

3.23.2 A decorative coating used to create a metallic, iridescent, or pearlescent appearance and that contains 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); or

3.23.3 A decorative coating used to create a metallic appearance and that contains less than 48 grams of elemental metallic pigment per liter of coating as applied (less than 0.4 pounds per gallon) when tested in accordance with SCAQMD Method 318-95, incorporated by reference in Section 6.3.9; or

3.23.4 A decorative coating used to create a metallic appearance and that contains greater than 48 grams of elemental metallic pigment per liter of coating as applied (greater than 0.4 pounds per gallon) and which requires a clear topcoat to prevent the degradation of the finish under normal use conditions. The metallic pigment content shall be determined in accordance with SCAQMD Method 318-95, incorporated by reference in Section 6.3.9; or

3.23.5 A clear topcoat to seal and protect a Faux Finishing coating that meets the requirements of Sections 3.23.1, 3.23.2, 3.23.3, or 3.23.4. These clear topcoats must be sold and used solely as part of a Faux Finishing coating system, and must be labeled in accordance with Section 6.1.4.

3.24 Fire-Resistive Coating: A coating labeled and formulated to protect structural integrity by increasing the fire endurance of interior or exterior steel and other structural materials. The Fire-Resistive coating category includes sprayed fire resistive materials and intumescent fire resistive coatings that are used to bring structural materials into compliance with federal, state, and local building code requirements. The fire-resistant coatings shall be tested in accordance with ASTM E119-18ce1, incorporated by reference in Section 6.3.7. Fire Resistive coatings and testing agencies must be approved by building code officials.

3.25 Fire-Retardant Coating: A coating labeled and formulated to retard ignition and flame spread, that has been fire tested and rated by a testing agency approved by building code officials for use in bringing building and construction materials into compliance with federal, state and local building code requirements. The fire-retardant coating and the testing agency must be approved by building code officials. The fire-retardant coating shall be tested in accordance with ASTM E84-18b incorporated by reference in Section 6.3.6. Effective January 1, 2010, the Fire Retardant coating category is eliminated and coatings with fire retardant properties will be subject to the VOC limit of their primary category (e.g., Flat, Nonflat, etc.).

3.26 Flat Coating: A coating that is not defined under any other definition in this rule and that registers gloss less than 15 on an 85-degree meter or less than 5 on a 60-degree meter according to ASTM D523-14 (2018), incorporated by reference in Section 6.3.8.

3.27 Floor Coating: An opaque coating that is labeled and formulated for application to flooring, including, but not limited to, decks, porches, steps, garage floors, and other horizontal surfaces which may be subject to foot traffic.

3.28 Form-Release Compound: A coating labeled and formulated for application to a concrete form to prevent the freshly poured concrete from bonding to the form. The form may consist of wood, metal, or some material other than concrete.

3.29 Graphic Arts Coating or Sign Paint: A coating labeled and formulated for hand-application by artists using brush, airbrush, or roller techniques to indoor and outdoor signs (excluding structural components) and murals including lettering enamels, poster colors, copy blockers, and bulletin enamels.

3.30 High-Temperature Coating: A high performance coating labeled and formulated for application to substrates exposed continuously or intermittently to temperatures above 204°C (400°F).

3.31 Industrial Maintenance Coating: A high performance architectural coating, including primers, sealers, undercoaters, intermediate coats, and topcoats, formulated for application to substrates including floors, exposed to one or more of the following extreme environmental conditions listed in Sections 3.31.1 through 3.31.5 and labeled as specified in Section 6.1:

3.31.1 Immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposure of interior surfaces to moisture condensation; or

3.31.2 Acute or chronic exposure to corrosive, caustic or acidic agents, or to chemicals, chemical fumes, or chemical mixtures or solutions; or

3.31.3 Frequent exposure to temperatures above 121°C (250°F); or

3.31.4 Frequent heavy abrasion, including mechanical wear and frequent scrubbing with industrial solvents, cleansers, or scouring agents; or

3.31.5 Exterior exposure of metal structures and structural components.

3.32 Interior Stain: A stain labeled and formulated exclusively for use on interior surfaces.

3.33 Intumescent: A material that swells as a result of heat exposure, thus increasing in volume and decreasing in density.

3.34 Lacquer: A clear or opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and to provide a solid, protective film.

3.35 Low Solids Coating: A coating containing 0.12 kilogram or less of solids per liter (1 pound or less of solids per gallon) of coating material as recommended for application by the manufacturer. The VOC content for low solids coatings shall be calculated pursuant to VOC Actual.

3.36 Magnesite Cement Coating: A coating labeled and formulated for application to magnesite cement decking to protect the magnesite cement substrate from erosion by water.

3.37 Manufacturer's Maximum Thinning Recommendation: The maximum recommendation for thinning that is indicated on the label or lid of the coating container.

3.38 Market: 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.

3.39 Mastic Texture Coating: A coating labeled and formulated to cover holes and minor cracks and to conceal surface irregularities, and is applied in a single coat of at least 10 mils (at least 0.010 inch) dry film thickness.

3.40 Medium Density Fiberboard: A composite wood product, panel, molding, or other building material composed of cellulosic fibers (usually wood) made by dry forming and pressing of a resinated fiber mat.

3.41 Metallic Pigmented Coating: A coating that is labeled and formulated to provide a metallic appearance. Metallic Pigmented coatings must contain at least 48 grams of elemental metallic pigment (excluding zinc) per liter of coating as applied (at least 0.4 pounds per gallon), when tested in accordance with SCAQMD Method 318-95, incorporated by reference in Section 6.3.9. The metallic Pigmented Coating category does not include coatings applied to roofs, or Zinc-Rich Primers.

3.42 Multi-Color Coating: A coating that is packaged in a single container and that is labeled and formulated to exhibit~~s~~ more than one color when applied in a single coat.

3.43 Nonflat Coating: A coating that is not defined under any other definition in this rule and that registers a gloss of 15 or greater on an 85-degree meter and 5 or greater on a 60-degree meter according to ASTM D523-14 (2018), incorporated by reference in Section 6.3.8.

3.44 Particleboard: A composite wood product panel, molding, or other building material composed of cellulosic material (usually wood) in the form of discrete particles, as distinguished from fibers, flakes, or strands, which are pressed together with resin.

3.45 Pearlescent: Exhibiting various colors depending on the angles of illumination and viewing, as observed in mother-of-pearl.

3.46 Plywood: A panel product consisting of layers of wood veneers or composite core pressed together with resin. Plywood includes panel products made by either hot or cold pressing (with resin) veneers to a platform.

3.47 Post-Consumer Coating: Finished coatings generated by a business or consumer that have served their intended end uses, and are recovered from or otherwise diverted from the waste stream for the purpose of recycling.

3.48 Pre-Treatment Wash Primer: A primer that contains a minimum of 0.5 percent acid, by weight, when tested in accordance with ASTM D1613-17 incorporated by reference in Section 6.3.10, that is labeled and formulated for application directly to bare metal surfaces to provide corrosion resistance and to promote adhesion of subsequent topcoats.

3.49 Primer, Sealer, and Undercoater: A coating labeled and formulated to provide a firm bond between the substrate and the subsequent coatings, prevent subsequent coatings from being absorbed by the substrate, prevent harm to subsequent coatings by materials in the substrate, provide a smooth surface for the subsequent application of coatings, provide a clear finish coat to seal the substrate, or to block materials from penetrating into or leaching out of a substrate.

3.50 Reactive Penetrating Sealer: A clear or pigmented coating that is 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 penetrate into concrete and masonry substrates and chemically react to form covalent bonds with naturally occurring minerals in the substrate. Reactive Penetrating Sealers line the pores of concrete and masonry substrates with a hydrophobic coating, but do not form a surface film. Reactive Penetrating Sealers must meet all of the following criteria:

3.50.1 The Reactive Penetrating Sealer must 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, incorporated by reference in Section 6.3.24: ASTM C67/C67M-18, or ASTM C97/97M-18, or ASTM C140/C140M-18a; and

3.50.2 The Reactive Penetrating Sealer must 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 E96/96M-16 or ASTM D6490-99 (2014), incorporated by reference in Section 6.3.25; and

3.50.3 Products labeled and formulated for vehicular traffic surface chloride screening applications must meet the performance criteria listed in the National Cooperative Highway Research Report 244 (1981) incorporated by reference in Section 6.3.26.

3.50.4 Reactive Penetrating Sealers must be labeled in accordance with Section 6.1.8.

3.51 Recycled Coating: An architectural coating formulated such that it contains a minimum of 50 percent by volume post-consumer coating, with a maximum of 50 percent by volume secondary industrial materials or virgin materials.

3.52 Residential: Areas where people reside or lodge, including, but not limited to, single and multiple family dwellings, condominiums, mobile homes, apartment complexes, motels, and hotels.

3.53 Roof Coating: A non-bituminous coating labeled and formulated for application to roofs for the primary purpose of preventing water penetration, reflecting ultraviolet light, or reflecting solar radiation.

3.54 Rust Preventative Coating: A coating formulated to prevent the corrosion of metal surfaces for direct-to-metal coating or a coating intended for application over rusty, previously coated surfaces. The Rust Preventative category does not include coatings that are required to be applied as a topcoat over a primer; or coatings that are intended for use on wood or any other nonmetallic surface. Rust preventative coatings are for metal substrates only and must be labeled as such, in accordance with the labeling requirements in Section 6.1.6.

3.55 Sanding Sealer: A clear or semi-transparent wood coating labeled and formulated for application to bare wood to seal the wood and to provide a coat that can be abraded to create a smooth surface for subsequent applications of coatings.

3.56 Secondary Industrial Materials: Products or by-products of the paint manufacturing process that are of known composition and have economic value but can no longer be used for their intended purpose.

3.57 Semitransparent Coating: A coating that contains binders and colored pigments and is formulated to change the color of the surface, but not conceal the grain pattern or texture.

3.58 Shellac: A clear or opaque coating formulated solely with the resinous secretions of the lac beetle (*Laciffer lacca*) and formulated to dry by evaporation without a chemical reaction.

3.59 Shop Application: Application of a coating to a product or a component of a product in or on the premises of a factory or a shop as part of a manufacturing, production, or repairing process (e.g., original equipment manufacturing coatings).

3.60 Solicit: To require for use or to specify, by written or oral contract.

3.61 Specialty Primer, Sealer, and Undercoater:

3.61.1 A coating that is formulated for application to a substrate to block water-soluble stains resulting from: fire damage, smoke damage, or water

damage. Specialty Primers, Sealers, and Undercoaters must be labeled in accordance with Section 6.1.7.

3.62 Stain: A semitransparent or opaque coating labeled and formulated to change the color of a surface but not conceal the grain pattern or texture.

3.63 Stone Consolidant: A coating that is 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 penetrate into stone substrates to create bonds between particles and consolidate deteriorated material. Stone Consolidants must be specified and used in accordance with ASTM E2167-01 (2008), incorporated by reference in Section 6.3.27. Stone Consolidants are for professional use only and must be labeled as such, in accordance with the labeling requirements in Section 6.1.9.

3.64 Swimming Pool Coating: A coating labeled and formulated to coat the interior of swimming pools and to resist swimming pool chemicals. Swimming pool coatings include coatings used for swimming pool repair and maintenance.

3.65 Tile and Stone Sealers: A clear or pigmented sealer that is used for sealing tile, stone or grout to provide resistance against water, alkalis, acids, ultraviolet light or straining and which meets one of the following subcategories:

3.65.1 Penetrating sealers are polymer solutions that cross-link in the substrate and must meet the following criteria:

3.65.1.1 Qualify as a fine particle structure to penetrate dense tile such as porcelain with absorption as low as 0.10 percent per ASTM C373-18, ASTM C97/97M-18, or ASTM C642-13, incorporated by reference in subsection 6.3.31;

3.65.1.2 Retain or increase static coefficient of friction per ANSI A137.1 (2012), incorporated by reference in subsection 6.3.32;

3.65.1.3 Not create a topical surface film on the tile or stone; and

3.65.1.4 Allow vapor transmission per ASTM E96/96M-16, incorporated by subsection 6.3.33.

3.65.2 Film forming sealers which leave a protective film on the surface.

3.66 Tint Base: An architectural coating to which colorant is added after packaging in sale units to produce a desired color.

3.67 Traffic Marking Coating: A coating labeled and formulated for marking and striping streets, highways, or other traffic surfaces including, but not limited to, curbs, berms, driveways, parking lots, sidewalks, and airport runways. This coating category also includes Methacrylate Multicomponent Coatings used as traffic marking coatings. The VOC content of Methacrylate Multicomponent Coatings used as traffic marking coatings shall be analyzed by the procedures in 40 CFR Part 59, Subpart D, Appendix A, incorporated by reference in subsection 6.3.16.

3.68 Tub and Tile Refinish Coating: A clear or opaque coating that is labeled and formulated exclusively for refinishing the surface of a bathtub, shower, sink, or countertop. Tub and Tile Refinish coatings must meet all of the following criteria:

3.68.1 The coating must have a scratch hardness of 3H or harder and a gouge hardness of 4H or harder. This must be determined on bonderite 1000, in accordance with ASTM D3363-05 (2011)e2, incorporated by reference in Section 6.3.19; and

3.68.2 The coating must have a weight loss of 20 milligrams or less after 1,000 cycles. This must be determined with CS-17 wheels on bonderite 1000, in accordance with ASTM D4060-14, incorporated by reference in Section 6.3.20; and

3.68.3 The coating must withstand 1,000 hours or more of exposure with few or no #8 blisters. This must be determined on unscribed bonderite, in accordance with ASTM D4585/D4585M-18, and ASTM D714-02~~e1~~ (2017), incorporated by reference in Section 6.3.21; and

3.68.4 The coating must have an adhesion rating of 4B or better after 24 hours of recovery. This must be determined on unscribed bonderite, in accordance with ASTM D4585/D4585M-18 and ASTM D3359-17, incorporated by reference in Section 6.3.18.

3.69 Veneer: Thin sheets of wood peeled or sliced from logs for use in the manufacture of wood products such as plywood, laminated veneer lumber, or other products.

3.70 Virgin Materials: Materials that contain no post-consumer coatings or secondary industrial materials.

3.71 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.72 VOC Actual: The weight of VOC per volume of coating. VOC Actual applies to coatings or colorants in the Low Solids Coatings category and it is calculated with the following equation:

$$\text{VOC Actual} = \frac{(Ws - Ww - Wec)}{(Vm)}$$

Where:

VOC Actual	=	the grams of VOC per liter of coating (also known as "Material VOC")
Ws	=	weight of volatiles, in grams
Ww	=	weight of water, in grams
Wec	=	weight of exempt compounds, in grams
Vm	=	volume of coating or colorant, in liters

3.73 VOC Content: The weight of VOC per volume of coating or colorant. VOC Content is VOC Regulatory, as defined in Section 3.74, for all coatings or colorants except those in the Low Solids category. For coatings or colorants in the Low Solids category, the VOC Content is VOC Actual, as defined in Section 3.72. If the coating is a multi-component product, the VOC content is VOC Regulatory as mixed or catalyzed. If the coating contains silanes, siloxanes, or other ingredients that generate ethanol or other VOCs during the curing process, the VOC content must include the VOCs emitted during curing.

3.74 VOC Regulatory: VOC Regulatory is the weight of VOC per volume of coating or colorant, less the volume of water and exempt compounds. It is calculated with the following equation:

$$\text{VOC Regulatory} = \frac{(Ws - Ww - Wec)}{(Vm - Vw - Vec)}$$

Where:

VOC Regulatory	=	grams of VOC per liter of coating or colorant, less water and exempt compounds (also known as "Coating VOC")
Ws	=	weight of volatiles, in grams
Ww	=	weight of water, in grams
Wec	=	weight of exempt compounds, in grams
Vm	=	volume of coating or colorant, in liters
Vw	=	volume of water, in liters
Vec	=	volume of exempt compounds, in liters

3.75 Waterproofing Membrane: A clear or opaque coating that is labeled and formulated for application to concrete and masonry surfaces to provide a seamless waterproofing membrane that prevents any penetration of liquid water into the substrate. Waterproofing Membranes are intended for the following waterproofing applications: below-grade surfaces, between concrete slabs, inside

tunnels, inside concrete planters, and under flooring materials. The Waterproofing Membrane category does not include topcoats that are included in the Concrete/Masonry Sealer category (e.g., parking deck topcoats, pedestrian deck topcoats, etc.). Waterproofing Membranes must meet the following criteria:

3.75.1 Coating must be applied in a single coat of at least 25 mils (at least 0.025 inch) dry film thickness; and

3.75.2 Coatings must meet or exceed the requirements contained in ASTM C836/C836M-18, incorporated by reference in Section 6.3.22.

3.76 Wood Coatings: Coatings labeled and formulated for application to wood substrates only. The Wood Coatings category includes the following clear and semitransparent coatings: lacquers; varnishes; sanding sealers; penetrating oils; clear stains; wood conditioners used as undercoats; and wood sealers used as topcoats. The Wood Coatings category also includes the following opaque wood coatings: opaque lacquers; opaque sanding sealers; and opaque lacquer undercoaters. The Wood Coatings category does not include clear sealers that are labeled and formulated for use on concrete/masonry surfaces; or coatings intended for substrates other than wood. Wood Coatings must be labeled "For Wood Substrates Only", in accordance with Section 6.1.10.

3.77 Wood Preservative: A coating labeled and formulated to protect exposed wood from decay or insect attack, that is registered with both the U.S. EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code (U.S.C.) Section 136, *et seq.*) and with the California Department of Pesticide Regulation.

3.78 Wood Substrate: A substrate made of wood, particleboard, plywood, medium density fiberboard, rattan, wicker, bamboo, or composite products with exposed wood grain. Wood Products do not include items comprised of simulated wood.

3.79 Zinc-Rich Primer: A coating that contains at least 65 percent metallic zinc powder or zinc dust by weight of total solids, and is formulated for application to metal substrates to provide a firm bond between the substrate and subsequent applications of coatings. Zinc-Rich Primers are intended for professional use only and are labeled as such, in accordance with the labeling requirements in Section 6.1.11.

4.0 Exemptions

4.1 The provisions of this rule shall not apply to:

4.1.1 Any architectural coating that is supplied, sold, offered for sale, or manufactured for use outside of the District or for shipment to other manufacturers for reformulation or repackaging.

4.1.2 Any aerosol coating product.

4.2 With the exception of Section 6.2 and Section 4.3, the provisions of this rule shall not apply to any architectural coating that is sold in a container with a volume of one liter (1.057 quarts) or less, provided the following requirements are met:

4.2.1 The coating container is not bundled together with other containers of the same specific coating category (listed in Table 1) to be sold as a unit that exceeds one liter (1.057 quart), excluding containers packed together for shipping to a retail outlet, and

4.2.2 The label or any other product literature does not suggest combining multiple containers of the same specific category (listed in Table 1) so that the combination exceeds one liter (1.057 quart).

4.3 On and after sixty days following the effective date of EPA final rulemaking that the conditions described in Clean Air Act Sections 172(c)(9) and 182(c)(9) have occurred in the San Joaquin Valley regarding the 2008 8-hour Ozone National Ambient Air Quality Standard, the categories of coatings listed below shall no longer be exempt from the provisions of Table 1 of this rule when sold in containers having capacities of one liter (1.057 quarts) or less:

4.3.1 Bituminous Roof Coatings;
4.3.2 Flat Coatings that are sold in containers having capacities greater than eight fluid ounces;
4.3.3 Magnesite Cement Coatings;
4.3.4 Multi-Color Coatings;
4.3.5 Nonflat Coatings that are sold in containers having capacities greater than eight fluid ounces;
4.3.6 Pre-Treatment Wash Primers;
4.3.7 Reactive Penetrating Sealers;
4.3.8 Shellacs (Clear and Opaque);
4.3.9 Stone Consolidants;
4.3.10 Swimming Pool Coatings;
4.3.11 Tub and Tile Refinishing Coatings;
4.3.12 Wood Coatings, including Lacquers, Varnishes, and Sanding Sealers; and

4.3.13 Wood Preservatives.

4.4 Colorant added at the factory or at the worksite is not subject to the VOC limits in Table 2. In addition, containers of colorant sold at the point of sale for use in the field or on a job site are also not subject to the VOC limit in Table 2.

5.0 Requirements

5.1 VOC Content Limits: Except as provided in Sections 5.2 and 5.3, no person shall: manufacture, blend, or repackage for use within the District; or supply, sell, market or offer for sale within the District; or solicit for application or apply within the District any architectural coating or colorant with a VOC content in excess of the corresponding limit specified in Table 1 or Table 2, after the specified effective date in Table 1 or Table 2. Limits are expressed as VOC Regulatory, thinned to the manufacturer's maximum thinning recommendation, excluding any colorant added to tint bases.

5.2 Most Restrictive VOC Limit: If a coating meets the definition in Section 3.0 for one or more specialty coating categories listed in Table 1 or, then that coating is not required to meet the VOC limits for Flat or Nonflat coatings, but is required to meet the VOC limit for the applicable specialty coating listed in Table 1 or . With the exception of the specialty coating categories specified in Sections 5.2.1 through 5.2.12, if a coating is recommended for use in more than one of the specialty coating categories listed in Table 1, then the most restrictive (or lowest) VOC content limit shall apply. This requirement applies to: usage recommendations that appear anywhere on the coating container, anywhere on any label or sticker affixed to the container, or in any sales, advertising, or technical literature supplied by a manufacturer or anyone acting on their behalf.

5.2.1 Metallic pigmented coatings;
5.2.2 Shellacs;
5.2.3 Pretreatment wash primers;
5.2.4 Industrial maintenance coatings;
5.2.5 Low-solids coatings;
5.2.6 Wood preservatives;
5.2.7 High temperature coatings;
5.2.8 Bituminous roof primers;
5.2.9 Specialty primers, sealers and undercoaters;
5.2.10 Aluminum roof coatings;
5.2.11 Zinc-rich primers; and
5.2.12 Wood Coatings.

5.3 Sell-Through of Coatings:

5.3.1 A coating manufactured prior to January 1, 2022, may be sold, supplied, or offered for sale for up to three years after January 1, 2022. In addition, a coating manufactured before January 1, 2022 may be applied at any time, both before and after January 1, 2022, so long as the coating complied with the standards in effect at the time the coating was manufactured. This subsection 5.3.1 does not apply to any coating that does not display the date or date-code required by subsection 6.1.1.

5.3.2 A colorant manufactured prior to January 1, 2022, may be sold, supplied, or offered for sale for up to three years after January 1, 2022. In addition, a colorant manufactured before January 1, 2022 may be applied at any time, both before and after January 1, 2022, so long as the colorant complied with the standards in effect at the time the colorant was manufactured. This subsection 5.3.2 does not apply to any colorant that does not display the date or date-code required by subsection 6.1.1.

5.4 Painting Practices: All architectural coating containers used to apply the contents therein to a surface directly from the container by pouring, siphoning, brushing, rolling, padding, ragging or other means, shall be closed when not in use. These architectural coating containers include, but are not limited to, drums, buckets, cans, pails, trays or other application containers. Containers of any VOC-containing materials used for thinning and cleanup shall also be closed when not in use.

5.5 Thinning: No person who applies or solicits the application of any architectural coating shall apply a coating that is thinned to exceed the applicable VOC limit specified in Table 1.

5.6 Coatings Not Listed in Table 1: For any coating that does not meet any of the definitions for the specialty coatings categories listed in Table 1, the VOC content limit shall be determined by classifying the coating as Flat or Nonflat, based on its gloss, and the corresponding Flat or Nonflat VOC limit in Table 1 shall apply.

5.7 Colorants: No person within the District shall, at the point of sale of any architectural coating subject to subsection 5.1, add to such coating any colorant that contains VOCs in excess of the corresponding applicable VOC limit specified in Table 2. The point of sale includes retail outlets that add colorant to a coating container to obtain a specific color.

Table 1 VOC Content Limits for Coatings[1]

COATING CATEGORY	*Current VOC Limit (g/l)*	*VOC Limit (g/l) Effective on and after 1/1/2022*
Flat Coatings	50	50
Nonflat Coatings	100	50
Specialty Coatings	-	-
Aluminum Roof Coatings	400	100
Basement Specialty Coatings	400	400
Bituminous Roof Coatings	50	50
Bituminous Roof Primers	350	350
Bond Breakers	350	350
Building Envelope Coatings	-	50
Concrete Curing Compounds	350	350
Concrete/Masonry Sealers	100	100
Driveway Sealers	50	50
Dry Fog Coatings	150	50
Faux Finishing Coatings	350	350
Fire Resistive Coatings	350	150
Floor Coatings	100	50
Form-Release Compounds	250	100
Graphic Arts Coatings (Sign Paints)	500	500
High Temperature Coatings	420	420
Industrial Maintenance Coatings	250	250
Low Solids Coatings[2]	120	120
Magnesite Cement Coatings	450	450
Mastic Texture Coatings	100	100
Metallic Pigmented Coatings	500	500
Multi-Color Coatings	250	250
Pre-Treatment Wash Primers	420	420
Primers, Sealers, and Undercoaters	100	100
Reactive Penetrating Sealers	350	350
Recycled Coatings	250	250

Table 1 VOC Content Limits for Coatings (continued)[1]

COATING CATEGORY	*Current VOC Limit (g/l)*	*VOC Limit (g/l) Effective on and after 1/1/2022*
Roof Coatings	50	50
Rust Preventative Coatings	250	250
Shellacs:		
Clear	730	730
Opaque	550	550
Specialty Primers, Sealers, and Undercoaters	100	100
Stains	250	100
Interior Stains		250
Stone Consolidants	450	450
Swimming Pool Coatings	340	340
Tile and Stone Sealers		100
Traffic Marking Coatings	100	100
Tub and Tile Refinish Coatings	420	420
Waterproofing Membranes	250	100
Wood Coatings	275	275
Wood Preservatives	350	350
Zinc-Rich Primers	340	340

1 Limits are expressed as VOC Regulatory (except where noted otherwise), thinned to the manufacturer's maximum thinning recommendation, excluding any colorant added to tint bases.
2 Units are grams of VOC per liter of coating, including water and exempt compounds, in accordance with Section 3.72.

Table 2 VOC Content Limits for Colorants[1]

Colorants Added To	*VOC Limit (g/l) Effective on and after 1/1/2022*
Architectural Coatings, excluding Industrial Maintenance Coatings	50
Solvent Based Industrial Maintenance Coatings	600
Waterborne Industrial Maintenance Coatings	50
Wood Coatings	600

1 Limits are expressed as VOC Regulatory.

6.0 Administrative Requirements

6.1 Labeling Requirements: Each manufacturer of any architectural coating subject to this rule shall display the information listed in Sections 6.1.1 through 6.1.12 on the coating container (or label) in which the coating is sold or distributed.

6.1.1 Date Code: The date the coating was manufactured, or a date code representing the date, shall be indicated on the label, lid or bottom of the container. If the manufacturer uses a date code for any coating, the manufacturer shall file an explanation of each code with the Executive Officer of the ARB.

6.1.2 Thinning Recommendations: A statement of the manufacturer's recommendation regarding thinning of the coating shall be indicated on the label or lid of the container. This requirement does not apply to the thinning of architectural coatings with water. If thinning of the coating prior to use is not necessary, the recommendation must specify that the coating is to be applied without thinning.

6.1.3 VOC Content: Each container of any coating subject to this rule shall display one of the following values, in grams of VOC per liter of coating:

6.1.3.1 Maximum VOC Content, as determined from all potential product formulations; or

6.1.3.2 VOC Content, as determined from actual formulation data; or

6.1.3.3 VOC Content, as determined using the test methods in Section 6.3.2.

If the manufacturer does not recommend thinning, the container must display the VOC Content, as supplied. If the manufacturer recommends thinning, the container must display the VOC Content, including the maximum amount of thinning solvent recommended by the manufacturer. If the coating is a multicomponent product, the container must display the VOC content as mixed or catalyzed. If the coating contains silanes, siloxanes, or other ingredients that generate ethanol or other VOCs during the curing process, the VOC content must include the VOCs emitted during curing. VOC Content shall be determined as defined in subsections 3.72, 3.73, and 3.74.

6.1.4 Faux Finishing Coatings: The labels of all clear topcoat Faux Finishing coatings shall prominently display the statement "This product can only be sold or used as part of a Faux Finishing coating system".

6.1.5 Industrial Maintenance Coatings: Each manufacturer of any industrial maintenance coating subject to this rule shall display on the label or lid of the container in which the coating is sold or distributed one or more of the following descriptions listed in Section 6.1.5.1 through 6.1.5.2.

6.1.5.1 "For industrial use only"
6.1.5.2 "For professional use only"

6.1.6 Rust Preventative Coatings: The labels of all rust preventative coatings shall prominently display the statement "For Metal Substrates Only".

6.1.7 Specialty Primers, Sealers and Undercoaters: The labels of all specialty primers, sealers, and undercoaters shall prominently display the statement "Specialty Primer, Sealer, Undercoater".

6.1.8 Reactive Penetrating Sealers: The labels of all Reactive Penetrating Sealers shall prominently display the statement "Reactive Penetrating Sealer."

6.1.9 Stone Consolidants: The labels of all Stone Consolidants shall prominently display the statement "Stone Consolidant - For Professional Use Only."

6.1.10 Wood Coatings: The labels of all Wood Coatings shall prominently display the statement "For Wood Substrates Only."

6.1.11 Zinc Rich Primers: The labels of all Zinc Rich Primers shall prominently display the statement "For professional use only."

6.1.12 Colorants: Effective January 1, 2022, each manufacturer of any colorant subject to this rule shall display the information listed in subsections 6.1.12.1 and 6.1.12.2 on the container (or label) in which the colorant is sold or distributed.

6.1.12.1 Date Code: The date the colorant was manufactured, or a date code representing the date, shall be indicated on the label, lid, or bottom of the container. If the manufacturer uses a date code for any colorant, the manufacturer shall file an explanation of each code with the APCO.

6.1.12.2 VOC Content: Each container of any colorant subject to this rule shall display one of the following values in grams of VOC per liter of colorant:

6.1.12.2.1 Maximum VOC Content as determined from all potential product formulations; or

6.1.12.2.2 VOC Content as determined from actual formulation data; or

6.1.12.2.3 VOC Content as determined using the test methods in subsection 6.3.2.

If the colorant contains silanes, siloxanes, or other ingredients that generate ethanol or other VOCs during the curing process, the VOC content must include the VOCs emitted during curing. VOC Content shall be determined as defined in subsections 3.72, 3.73, and 3.74.

6.2 Reporting Requirements

6.2.1 Sales Data: All sales data listed in Sections 6.2.1.1 through 6.2.1.14 shall be maintained on-site by the responsible official for a minimum of three years. A responsible official from each manufacturer shall upon request of the Executive Officer of the ARB, or his or her delegate, provide data concerning the distribution and sales of architectural coatings. Sales data submitted by the responsible official to the Executive Officer of CARB may be claimed as confidential, and such information shall be handled in accordance with the procedures specified in Title 17, California Code of Regulations Sections 91000-91022. The responsible official shall within 180 days provide information, including, but not limited to the data listed in Sections 6.2.1.1 through 6.2.1.14:

6.2.1.1 The name and mailing address of the manufacturer;

6.2.1.2 The name, address and telephone number of a contact person;

6.2.1.3 The name of the coating product as it appears on the label and the applicable coating category;

6.2.1.4 Whether the product is marketed for interior or exterior use or both;

6.2.1.5 The number of gallons sold in California in containers greater than one liter (1.057 quart) and equal to or less than one liter (1.057 quart);

6.2.1.6 The VOC Actual content and VOC Regulatory content in grams per liter. If thinning is recommended, list the VOC Actual content and VOC Regulatory content after maximum recommended thinning. If containers less than one liter have a different VOC content than containers greater than one liter, list separately. If the coating is a multi-component product, provide the VOC content as mixed or catalyzed;

6.2.1.7 The names and CAS numbers of the VOC constituents in the product;

6.2.1.8 The names and CAS numbers of any compounds in the product specifically exempted from the VOC definition;

6.2.1.9 Whether the product is marketed as solvent-borne, waterborne, or 100% solids;

6.2.1.10 Description of resin or binder in the product;

6.2.1.11 Whether the coating is a single-component or multi-component product;

6.2.1.12 The density of the product in pounds per gallon;

6.2.1.13 The percent by weight of: solids, all volatile materials, water, and any compounds in the product specifically exempted from the VOC definition; and

6.2.1.14 The percent by volume of: solids, water, and any compounds in the product specifically exempted from the VOC definition.

6.3 Test Methods

The test methods listed below shall be used to demonstrate compliance with this rule. Alternate equivalent test methods may be used provided the test methods have been approved by the APCO and EPA.

6.3.1 Calculation of VOC Content: For the purpose of determining compliance with the VOC content limits in Table 1 or Table 2, the VOC content of a coating or colorant shall be determined as defined in Section 3.71, 3.72, or 3.73 as appropriate. The VOC content of a tint base shall be determined without colorant that is added after the tint base is manufactured. If the manufacturer does not recommend thinning, the VOC Content must be calculated for the product as supplied. If the manufacturer recommends

thinning, the VOC Content must be calculated including the maximum amount of thinning solvent recommended by the manufacturer. If the coating is a multi-component product, the VOC content must be calculated as mixed or catalyzed. If the coating contains silanes, siloxanes, or other ingredients that generate ethanol or other VOC during the curing process, the VOC content must include the VOCs emitted during curing.

6.3.2 VOC Content of Coatings or Colorants: To determine the physical properties of a coating or colorant in order to perform the calculations in Section 3.71 and 3.73, the reference method for VOC content is EPA Method 24, except as provided in Sections 6.3.3 and 6.3.15. An alternative method to determine the VOC content of coatings or colorants is SCAQMD Method 304-91 (Revised February 1996). The exempt compounds content shall be determined by SCAQMD Method 303-91 (Revised 1996), BAAQMD Method 43 (Revised 2005), or BAAQMD Method 41 (Revised 2005), as applicable. To determine the VOC content of a coating or colorant, the manufacturer may use EPA Method 24, or an alternative method as provided in Section 6.3.4, formulation data, or any other reasonable means for predicting that the coating or colorant has been formulated as intended (e.g., quality assurance checks, recordkeeping). However, if there are any inconsistencies between the results of EPA Method 24 test and any other means for determining VOC content, the EPA Method 24 test results will govern, except when an alternative method is approved as specified in Section 6.3.4. The District Air Pollution Control Officer (APCO) may require the manufacturer to conduct an EPA Method 24 analysis.

6.3.3 To determine the VOC content of a coating or colorant with a VOC content of 150 g/l or less, the manufacturer may use SCAQMD Method 313, incorporated by reference in subsection 6.3.34, ASTM D6886-18, incorporated by reference in subsection 6.3.35, or any other reasonable means for predicting that the coating or colorant has been formulated as intended (e.g., quality assurance checks, record keeping).

6.3.4 Alternative Test Methods: Other test methods demonstrated to provide results that are acceptable for purposes of determining compliance with Section 6.3.2, after review and approved in writing by the staffs of the District, CARB and EPA, may also be used.

6.3.5 Methacrylate Traffic Marking Coatings: Analysis of methacrylate multicomponent coatings used as traffic marking coatings shall be conducted according to a modification of EPA Method 24 (40 CFR 59, subpart D, Appendix A). This method has not been approved for methacrylate multicomponent coatings used for other purposes than as

traffic marking coatings or for other classes of multicomponent coatings.

6.3.6 Flame Spread Index: The flame spread index of a fire-retardant coating shall be determined by ASTM E84-18b, "Standard Test Method for Surface Burning Characteristics of Building Materials" (see Section 3.0, Fire-Retardant Coating).

6.3.7 Fire Resistance Rating: The fire resistance rating of a fire-resistive coating shall be determined by ASTM E119-18ce1, "Standard Test Methods for Fire Tests of Building Construction and Materials" (see Section 3.0, Fire-Resistive Coating).

6.3.8 Gloss Determination: The gloss of a coating shall be determined by ASTM D523-14 (2018), "Standard Test Method for Specular Gloss" (see Section 3.0, Flat Coating and Nonflat Coating).

6.3.9 Metal Content of Coatings: The metallic content of a coating shall be determined by SCAQMD Method 318-95, Determination of Weight Percent Elemental Metal in Coatings by X-Ray Diffraction, *SCAQMD Laboratory Methods of Analysis for Enforcement Samples* (see Section 3.0, Metallic Pigmented Coating, Aluminum Roof Coating and Faux Finish).

6.3.10 Acid Content of Coatings: The acid content of a coating shall be determined by ASTM D1613-17, "Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer and related products" (see Section 3.0, Pre-Treatment Wash Primer).

6.3.11 Exempt Compounds—Siloxanes: Exempt compounds that are cyclic, branched, or linear completely methylated siloxanes, shall be analyzed as exempt compounds for compliance with Section 6 by BAAQMD Method 43, "Determination of Volatile Methylsiloxanes in Solvent-Based Coatings, Inks, and Related Materials," *BAAQMD Manual of Procedures*, Volume III,revised 2005, (see Section 3.0, Volatile Organic Compound, and Section 6.3.2).

6.3.12 Exempt Compounds—Parachlorobenzotrifluoride (PCBTF): The exempt compound parachlorobenzotrifluoride, shall be analyzed as an exempt compound for compliance with Section 6 by BAAQMD Method 41, "Determination of Volatile Organic Compounds in Solvent Based Coatings and Related Materials Containing Parachlorobenzotriflouride," *BAAQMD Manual of Procedures*, Volume III, revised 2005, (see Section 3.0, Volatile Organic Compound, and Section 6.3.2).

6.3.13 Exempt Compounds: The content of compounds exempted under U.S. EPA Method 24 shall be analyzed by SCAQMD Method 303-91 (Revised 1996), "Determination of Exempt Compounds," *SCAQMD Laboratory Methods of Analysis for Enforcement Samples* (see Section 3.0, Volatile Organic Compound, and Section 6.3.2).

6.3.14 VOC Content of Coatings: The VOC content of a coating shall be determined by EPA Method 24 as it exists in appendix A of 40 *Code of Federal Regulations* (CFR) part 60, "Determination of Volatile Matter Content, Water Content, Density, Volume Solids and Weight Solids of Surface Coatings" (see Section 6.3.2).

6.3.15 Alternative VOC Content of Coatings: The VOC content of coatings may be analyzed either by U.S. EPA Method 24 or SCAQMD Method 304-91 (Revised 1996), "Determination of Volatile Organic Compounds (VOC) in Various Materials," *SCAQMD Laboratory Methods of Analysis for Enforcement Samples*.

6.3.16 Methacrylate Traffic Marking Coatings: The VOC content of methacrylate multicomponent coatings used as traffic marking coatings shall be analyzed by the procedures in 40 CFR part 59, subpart D, appendix A, "Determination of Volatile Matter Content of Methacrylate Multicomponent Coatings Used as Traffic Marking Coatings" (September 11, 1998).

6.3.17 Hydrostatic Pressure for Basement Specialty Coatings: The hydrostatic pressure resistance for basement specialty coatings shall be analyzed using ASTM D7088-17, "Standard Practice for Resistance to Hydrostatic Pressure for Coatings Used in Below Grade Applications Applied to Masonry".

6.3.18 Tub and Tile Refinish Coating Adhesion: The adhesion of tub and tile coating shall be determined by ASTM D4585/4585M-18, "Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation" and ASTM D3359-17, "Standard Test Methods for Measuring Adhesion by Tape Test".

6.3.19 Tub and Tile Refinish Coating Hardness: The hardness of tub and tile refinish coating shall be determined by ASTM D3363-05 (2011)e2, "Standard Test Method for Film Hardness by Pencil Test".

6.3.20 Tub and Tile Refinish Coating Abrasion Resistance: Abrasion resistance of tub and tile refinish coating shall be analyzed by ASTM D4060-14,

"Standard Test Methods for Abrasion Resistance of Organic Coatings by the Taber Abraser".

6.3.21 Tub and Tile Refinish Coating Water Resistance: Water resistance of tub and tile refinish coatings shall be determined by ASTM D4585/4585M-18, "Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation" and ASTM D714-02 (2017), "Standard Test Method for Evaluating Degree of Blistering of Paints".

6.3.22 Waterproofing Membrane: Waterproofing membrane shall be tested by ASTM C836/836M-18, "Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course".

6.3.23 Mold and Mildew Growth for Basement Specialty Coatings: Mold and mildew growth resistance for basement specialty coatings shall be determined by ASTM D3273-16, "Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber" and ASTM D3274-09 (2017), "Standard Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Fungal or Algal Growth or Soil and Dirt Accumulation".

6.3.24 Reactive Penetrating Sealer Water Repellency: Reactive penetrating sealer water repellency shall be analyzed by ASTM C67/C67M-18, "Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile"; or ASTM C97/97M-18, "Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone"; or ASTM C140-140M-18a, "Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units".

6.3.25 Reactive Penetrating Sealer Water Vapor Transmission: Reactive penetrating sealer water vapor transmission shall be analyzed ASTM E96/E96M-16, "Standard Test Method for Water Vapor Transmission of Materials" or ASTM D6490-99 (2014), "Standard Test Method for Water Vapor Transmission of Nonfilm Forming Treatments Used on Cementitious Panels".

6.3.26 Reactive Penetrating Sealer - Chloride Screening Applications: Reactive penetrating sealers shall be analyzed by National Cooperative Highway Research Report 244 (1981), "Concrete Sealers for the Protection of Bridge Structures".

6.3.27 Stone Consolidants: Stone consolidants shall be tested using ASTM

E2167-01 (2008), "Standard Guide for Selection and Use of Stone Consolidants".

6.3.28 Building Envelope Coating Air Permeance of Building Materials: ASTM E2178-13, "Standard Test Method for Air Permeance of Building Materials".

6.3.29 Building Envelope Coating Water Penetration Testing: ASTM E331-00 (2016), "Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference".

6.3.30 Building Envelope Coating Water Vapor Transmission: ASTM E96/96M-16, "Standard Test Methods for Water Vapor Transmission of Materials".

6.3.31 Tile and Stone Sealers Absorption: ASTM C373-18, "Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tile and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products"; or ASTM C97/97M-18, "Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone"; or ASTM C642-13, "Standard Test Method for Density, Absorption, and Voids in Hardened Concrete".

6.3.32 Tile and Stone Sealers – Static Coefficient of Friction: ANSI A137.1 (2012), "American National Standard of Specifications for Ceramic Tile".

6.3.33 Tile and Stone Sealers Water Vapor Transmissions: ASTM E96/96M-16, "Standard Test Methods for Water Vapor Transmission of Materials".

6.3.34 VOC Content of Coatings: South Coast AQMD Method 313, "Determination of Volatile Organic Compounds (VOC) by Gas Chromatography/Mass Spectrometry/Flame Ionization Detection (GS/MS/FID)".

6.3.35 VOC Content of Coatings: ASTM D6886-18, "Standard Test Method for Determination of the Weight Percent Individual Volatile Organic Compounds in Waterborne Air-Dry Coatings by Gas Chromatography".

7.0 Compliance Schedule

Persons subject to this rule shall be in compliance with this rule by the dates specified within the rule.

RULE 4602 MOTOR VEHICLE ASSEMBLY COATINGS (Adopted April 11, 1991; Amended September 19, 1991; Amended December 17, 1992; Amended December 15, 1994; Amended June 15, 1995; Amended September 17, 1997; Amended December 20, 2001; Amended September 21, 2006; Amended September 17, 2009)

1.0 Purpose

Limit the emissions of volatile organic compounds (VOCs) from motor vehicle assembly coating operations.

2.0 Applicability

This rule is applicable to any person who applies VOC-containing coatings to new automobiles, light-duty trucks, heavier vehicles, and other parts coated along with these bodies or body parts during the assembly process, and associated solvent cleaning activities.

3.0 Definitions

3.1 Adhesion Promoter: a coating applied over both an existing non-sanded topcoat, and the coated area immediately adjacent to the non-sanded topcoat, to promote the adhesion of a subsequent topcoat. No topcoat, primer, primer sealer, or primer surfacer shall be classified as an adhesion promoter.

3.2 Adhesive: any chemical substance, including glass bonding adhesive, used at a motor vehicle coating facility, that is applied for the purpose of bonding two surfaces together without regard to the substrates involved.

3.3 Air-Dried Coatings: a coating that is cured at a temperature below 90ºC (194º).

3.4 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.5 Anti-glare/safety Coatings: a coating which minimizes light reflection for safety purposes.

3.6 Application Equipment: a device, including, but not limited to, a spray gun, brush, and roller, used to apply adhesives, coatings, or inks.

3.7 Application Line: 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.

3.8 ARB: California Air Resources Board.

3.9 Assembly Line: 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.

3.10 Automobile: a motor vehicle designed to carry up to eight passengers, excluding vans, sport utility vehicles, and motor vehicles designed primarily to transport light loads of property.

3.11 Basecoat: a pigmented topcoat which is the first topcoat applied as part of a multi-stage topcoat system.

3.12 Bedliner: a multi-component coating, used at an automobile or light-duty truck assembly coating facility, applied to a cargo bed after the application of topcoat and outside of the topcoat operation to provide additional durability and chip resistance.

3.13 Bright Metal Trim Repair Coating: a coating applied directly to chrome-plated metal surfaces for the purpose of appearance.

3.14 Brush Coating: the manual application of coatings using brushes or rollers.

3.15 Capture Efficiency: the percentage of VOC used, emitted, evolved, or generated by the operation, that are collected and directed to an air pollution control device.

3.16 Catalyst: a substance whose presence enhances the reaction between chemical compounds.

3.17 Cavity Bedliner: a multi-component coating, used at a motor vehicle assembly coating facility, applied to a cargo bed after the application of a topcoat and outside of the topcoat operation to provide additional durability and chip resistance.

3.18 Cavity Wax: a coating, used at a motor vehicle assembly coating facility, applied into the cavities of the vehicle primarily of the purpose of enhancing corrosion protection.

3.19 Clearcoat: a topcoat which contains no pigments or only transparent pigments, and which is the final topcoat applied as a part of a multi-stage topcoat system.

3.20 Clear Coating: a colorless coating which contains binders, but no pigment, and is formulated to form a transparent film.

3.21 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes.

3.22 Composite Vapor Pressure: the sum of the partial pressure of each pure volatile organic compound in a blended solvent. VOC composite partial pressure is calculated as follows:

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

Where:

W_i	Weight of the "i"th VOC compound, in grams
W_w	Weight of water, in grams
W_e	Weight of the "e"th exempt compound, in grams
MW_e	Molecular weight of the "e"th exempt VOC compound, in grams per gram-mole
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
Pp_c	VOC composite vapor pressure at 20°C, in mm Hg
VP_i	Vapor pressure of the "i"th VOC compound at 20°C, in mm Hg

3.23 Continuous Coating: an enclosed coating system where spray nozzles coat parts and products as they are conveyed through the enclosure. Water wash zones control the inlet and outlet of the enclosure. Excess coating drains into a recirculation system.

3.24 Deadener: a coating, used at a motor vehicle assembly coating facility, applied to selected vehicle surfaces primarily for the purpose of reducing the sound of road noise in the passenger compartment.

3.25 Dip Coating: the process in which a substrate is immersed in a solution (or dispersion) containing the coating material, and then withdrawn.

3.26 Elastomeric Materials: a coating which is specifically formulated for adhesion to a flexible substrate, and applied over coated or uncoated flexible plastic substrates.

3.27 Electrodeposition: a dip coating application method where the coating solids are given an electrical charge which is then attracted to a substrate.

3.28 Electrodeposition Primer: a process of applying a protective, corrosion-resistant waterborne primer on exterior and interior surfaces that provides thorough coverage of recessed areas. It is a dip coating method that uses an electrical field to apply or deposit the conductive coating onto the part. The object being painted acts as an electrode that is oppositely charged from the particles of paint in the dip tank.

3.29 Electrostatic Application: a method of spray application of coatings where an electrostatic potential is created between the part to be coated and the paint particles.

3.30 EPA: United States Environmental Protection Agency.

3.31 Exempt Compound: an organic compound not classified as a volatile organic compound (VOC), as listed in the definition of volatile organic compound in Rule 1020 (Definitions).

3.32 inal Repair: the operations performed and coating(s) applied to completely-assembled motor vehicles or to parts that are not yet on a completely assembled vehicle to correct damage or imperfections in the coating. The curing of the coatings applied in these operations is accomplished at a lower temperature than that used for curing primer-surfacer and topcoat. This lower temperature cure avoids the need to send parts that are not yet on a completely assembled vehicle through the same type of curing process used for primer-surfacer and topcoat and is necessary to protect heat sensitive components on completely assembled vehicles.

3.33 low Coating: a coating application system, with no air supplied to the nozzle, where coatings flow over the part and the excess coating drains back into the collection system.

3.34 Gasket/Gasket Sealing Material: a fluid, used at an automobile or light-duty truck assembly coating facility, applied to coat a gasket or replace and perform the same function as a gasket. Gasket/gasket sealing material includes room temperature vulcanization (RTV) seal material.

3.35 Glass Bonding Primer: a primer, used at a motor vehicle assembly coating facility, applied to windshield or other glass, or to body openings, to prepare the glass or body opening for the application of glass bonding adhesives or the installation of adhesive bonded glass. Motor vehicle glass bonding primer includes glass bonding/cleaning primers that perform both functions (cleaning and priming of the windshield or other glass, or body openings) prior to the application of adhesive or the installation of adhesive bonded glass.

3.36 Grams of VOC per Liter of Coating Excluding Water and Exempt Compounds: the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating Excluding Water and Exempt Compounds} = \frac{Ws - Ww - Wec}{Vm - Vw - Vec}$$

Where:

Ws	weight of volatile compounds, in grams
Ww	weight of water, in grams
Wec	weight of exempt compounds, in grams
Vm	volume of material, in liters
Vw	volume of water, in liters
Vec	volume of exempt compounds, in liters

3.37 Grams of VOC per liter of Material: the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{Ws - Ww - Wec}{Vm}$$

Where:

Ws	weight of volatile compounds, in grams
Ww	weight of water, in grams
Wec	weight of exempt compounds, in grams
Vm	volume of material, in liters

3.38 Heat Resistant Coating: coatings which, during normal use, must withstand temperatures of at least 400° .

3.39 Heavier Vehicles: a self-propelled vehicle designed for transporting persons or property on a street or highway that has a gross vehicle weight rating over 8,500 pounds.

3.40 High-Volume, Low-Pressure (HVLP) Spray Equipment: equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure.

3.41 Impact Resistant Coating: any coating which is applied to a rocker panel for the purpose of chip resistance to road debris.

3.42 In-line Repair: the operation performed and coating(s) applied to correct damage or imperfections in the topcoat on parts that are not yet on a completely assembled vehicle. The curing of the coatings applied in these operations is accomplished at essentially the same temperature as that used for curing the previously applied topcoat. Also referred to as high bake repair or high bake reprocess. In-line repair is considered a part o the topcoat operation.

3.43 Light-Duty Truck: vans, sport utility vehicles, and motor vehicles designed primarily to transport light loads of property with gross vehicle weight rating of 8,500 pounds or less.

3.44 Lubricating Wax/Compound: a protective lubricating material, used at a motor vehicle assembly coating facility, applied to vehicle hubs and hinges.

3.45 Motor Vehicle: automobiles, light-duty trucks, and heavier vehicles as defined in Section 3.0.

3.46 Motor Vehicle Assembly Coating Operation: any person who applies coatings to new automobiles, light-duty trucks, heavier vehicles, or body parts for new automobiles, light-duty trucks, or heavier vehicles, and other parts coated along with these bodies or body parts during the assembly process, and associated solvent cleaning activities.

3.47 Multi-Stage Topcoat System: any basecoat/clearcoat topcoat system or any three-stage topcoat system, manufactured as a system, and used as specified by the manufacturer.

3.48 Organic Solvent Cleaning: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.49 Primary Coatings: coatings that include electrodeposition primer, primer-surfacer, topcoat, and final repair.

3.50 Primer: any coating applied prior to the application of a topcoat for the purpose of corrosion resistance and adhesion of the topcoat.

3.51 Primer Sealer: any coating applied for the purpose of sealing the underlying metal or coating system prior to the application of a topcoat for corrosion resistance, adhesion of the topcoat, color uniformity, and to promote the ability of an undercoat to resist penetration by the topcoat.

3.52 Primer-Surfacer: an intermediate protective coating applied over the electrodeposition primer and under the topcoat. Primer-surfacer provides adhesion, protection, and appearance properties to the total finish. Primer-surfacer may also be called guide coat or surfacer. Primer-surfacer operations may include other coating(s) (e.g., anti-chip, lower-body anti-chip, chip-resistant edge primer, spot primer, blackout, deadener, interior color, basecoat replacement coating, etc.) that is (are) applied in the same spray booth(s).

3.53 Propellant: any gas, including air, in a pressure container for expelling the contents when the pressure is released.

3.54 Reducer/Thinner: the solvent used to thin a coating.

3.55 Roll Coating: the application of coatings from a paint trough to a flat surface by a mechanical series of rollers.

3.56 Sealer: a high viscosity material, used at a motor vehicle assembly coating facility, generally, but not always, applied in the paint shop after the body has received and electrodeposition primer coating and before the application of subsequent coatings (e.g., primer-surfacer). The primary purpose of motor vehicle sealer is to fill body joints completely so that there is no intrusion of water, gases or corrosive materials into the passenger area of the body compartment. Such materials are also referred to as sealant, sealant primer, or caulk.

3.57 Solids Turnover Ratio (R_T): the ratio of total volume of coating solids that is added to the electrodeposition primer (EDP) system in a calendar month divided by the total volume design capacity of the EDP system.

3.58 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.59 Solvent lushing: the use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of equipment by flushing solvent, by a non-atomized solvent flow, through the equipment.

3.60 Specialty Coatings: unique coatings and compliant coatings with additives which are necessary due to unusual job performance requirements. Said coatings include, but are not limited to, adhesion promoters, uniform finish blenders, elastomeric materials, gloss flatteners, bright metal trim repair, heat resistant, water hold-out, weld-thru, impact resistant, rubberized asphaltic underbody, anti-glare/safety, and multi-color coatings.

3.61 Surface Preparation: The removal of contaminants from a surface prior to the application of coatings, inks, or adhesives or before proceeding to the next step of a manufacturing process.

3.62 Thinner: a solvent that is added to an adhesive, coating, or ink to make it more fluid.

3.63 Three-Stage Topcoat System: a topcoat system composed of a basecoat portion, a midcoat portion, and a transparent clearcoat portion.

3.64 Topcoat: the final coating system applied to provide the final color and/or a protective finish. The topcoat may be a monocoat color or basecoat/clearcoat system. In-line repair and two-tone are part of topcoat. Topcoat operations may include other coating(s) (e.g., blackout, interior color, etc.) that is (are) applied in the same spray booth(s).

3.65 Transfer Efficiency: a ratio of the amount of coating solids adhering to the object being coated to the total amount of coating solids used in the application process, expressed as a percentage.

3.66 Trunk Interior Coating: a coating, used at a motor vehicle assembly coating facility outside of the primer-surfacer and topcoat operations, applied to the trunk interior to provide chip protection.

3.67 Underbody Coating: a coating, used at a motor vehicle assembly coating facility, applied to the undercarriage or firewall to prevent corrosion and/or provide chip protection.

3.68 Uniform inish Blenders: a coating which is applied in spot repairs for the purpose of blending a paint overspray area of a repaired topcoat to match the appearance of an adjacent existing topcoat.

3.69 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.70 Waste Solvent Material: any solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

3.71 Weatherstrip Adhesive: an adhesive used at a motor vehicle assembly coating facility, applied to weather-stripping materials for the purpose of bonding the weatherstrip material to the surface of the vehicle.

3.72 Wipe Cleaning: a solvent cleaning activity performed by hand rubbing an absorbent material such as a rag, paper, sponge, brush, or cotton swab containing solvent.

4.0 Exemptions

4.1 The provisions of this rule shall not apply to materials supplied in containers with a net volume of 16 fluid ounces or less, or a net weight of one pound or less.

4.2 Except record keeping requirements in Section 6.1, the provisions of this rule shall not apply to an operation where the total actual VOC emissions from all motor vehicle assembly coating operations, including related cleaning activities, at that facility are less than 6.5 kg/day (15 lb/day) before consideration of controls.

5.0 Requirements

5.1 An operator of a motor vehicle assembly operation shall use coatings with a VOC content that does not exceed the limits in Table 1 and Table 2.

Table 1 VOC Emission Limits for Motor Vehicle Assembly Coatings

Assembly Coating Process	VOC Emission Limit		
Electrodeposition primer operations (including application area, spray/rinse stations, and curing oven)	When solids turnover ratio (R_T)>0.16:	When 0.040< R_T <0.160:	When R_T <.040:
	0.084 kg VOC /liter (0.7 lb/gal) coating solids applied	0.084x350 $^{0.160- R_T}$ kg VOC/liter (0.084x350 $^{0.160- R_T}$ x 8.34 lb/gal) coating solids applied	No VOC emission limit
Primer-surfacer operations (including application area, flash off area, and oven)	1.44 kg of VOC/liter of deposited solids (12.0 lb VOC/gal deposited solids) on a daily weighted average basis as determined by following the procedures in the revised Automobile Topcoat Protocol.		
Topcoat operations (including application area, flash-off area, and oven)	1.44 kg of VOC/liter of deposited solids (12.0 lb VOC/gal deposited solids) on a daily weighted average basis as determined by following the procedures in the revised Automobile Topcoat Protocol.		
inal repair operations	0.58 kg VOC/liter (4.8 lb VOC/gallon of coating) less water and less exempt solvents on a daily weighted average basis or as an occurrence weighted average.		
Combined primer-surfacer and topcoat operations	1.44 kg of VOC/liter of deposited solids (12.0 lb VOC/gal deposited solids) on a daily weighted average basis as determined by following the procedures in the revised Automobile Topcoat Protocol.		

Table 2 VOC Content Limits for Miscellaneous Materials Used at Motor Vehicle Assembly Coating Operations (grams of VOC per liter of coating excluding water and exempt compounds, as applied)

Material	VOC Emission Limit (g VOC/liter)
Glass bonding primer	900
Adhesive	250
Cavity wax	650
Sealer	650
Deadener	650
Gasket/gasket sealing material	200
Underbody coating	650
Trunk interior coating	650
Bedliner	200
Weatherstrip adhesive	750
Lubricating wax/compound	700

5.2 VOC Emission Control System Requirements

In lieu of complying with the requirements in Sections 5.1, 5.3, or 5.4 an operator may use a VOC emission control system that meets all of the requirements of Section 5.2.1 through 5.2.3.

5.2.1 The VOC emission control system shall be approved, in writing by the APCO.

5.2.2 The VOC emission control system shall achieve an overall capture and control efficiency of at least 90 percent by weight as calculated according to Section 5.2.3.

5.2.3 Use of a VOC emission control system shall result in VOC emissions equal to or less than VOC emissions which would result from compliance with the applicable requirements of Section 5.1, 5.3, or 5.4.

5.2.4 The minimum required 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:

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

Where:

CE	Control Efficiency, percent
VOC_{LWc}	VOC Limit less water and less exempt compounds
$VOC_{LWn,Max}$	Maximum VOC content of noncompliant 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 noncompliant coating, containing the maximum VOC content of the multi-component coating
D_c	Density of corresponding solvent, reducer, or thinner used in the compliant coating system.

5.3 Coating Application Methods

The operator shall apply coatings using one of the following methods:

5.3.1 Brush, dip, or roll coating; or

5.3.2 Electrostatic application; or

5.3.3 Electrodeposition; or

5.3.4 low coating; or

5.3.5 Continuous Coating; or

5.3.6 High-Volume, Low-Pressure (HVLP) spray equipment operated in accordance with the manufacturer's recommendations.

5.3.6.1 or HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.3.6.2 A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Section 3.0.

5.3.7 Any other coating application method which is demonstrated to the APCO to be capable of achieving at least 65 percent transfer efficiency. The transfer efficiency shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User," May 24, 1989, as contained in Section 6.5. Prior written approval from the APCO shall be obtained for each coating application method to be used pursuant to Section 5.3.7.

5.3.8 In lieu of compliance with Sections 5.3.1 through 5.3.7 an operator may control emissions from application equipment with a VOC emission control system that meets the requirements of Section 5.2.

5.4 Organic Solvent Cleaning

5.4.1 or solvent cleaning operations other than for bug and tar removal the operator shall use solvents that have VOC content equal to or less than 25 grams VOC per liter of cleaning material, as calculated using the equation listed in Section 3.0.

5.4.2 or bug and tar removal, a person shall not use any material other than bug and tar remover regulated under the Consumer Products Regulation (California Code of Regulations Section 94507 et seq.).

5.4.3 Cleaning activities that use solvents shall be performed by one or more of the following methods:

5.4.3.1 Wipe cleaning; or

5.4.3.2 Application of solvent from hand-held spray bottles from which solvents are dispensed without a propellant-induced force: or

5.4.3.3 Non-atomized solvent flow method in which 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

5.4.3.4 Solvent flushing method in which the cleaning solvent is discharged into a container that 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.

5.4.4 Solvent shall not be atomized into the open air unless it is vented to an APCO-approved VOC emission control system that complies with Section 5.2. This provision shall not apply to the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with spray bottles or containers described in Section 5.4.3.2.

5.4.5 An operator shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use.

5.4.6 In lieu of complying with Section~~s~~ 5.4.1, or 5.4.3 through 5.4.5 an operator may control VOC emissions from solvent cleaning with an APCO-approved VOC emission control system for the solvent cleaning operation that meets the requirements of Section 5.2.

5.5 Organic Solvent Disposal and Storage

The operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc., coatings, adhesives, catalysts, and thinners in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

6.0 Administrative Requirements

The records kept in compliance with Sections 6.1, 6.2, 6.3, and 6.4 shall be retained on site for a minimum of five (5) years and made available to the APCO, ARB, or EPA upon request.

6.1 Recordkeeping for Coatings

The operator shall maintain records on a daily basis, and have available at all times, a current list of coatings in use which provides all of the coating data necessary to evaluate compliance.

6.1.1 Maintain a current list of coatings and solvents in use which contains all of the coating data necessary to evaluate compliance, including the following information, as applicable:

6.1.1.1 mix ratio of components used,

6.1.1.2 VOC content and specific chemical constituents of coatings as applied, and

6.1.1.3 VOC content and specific chemical constituents of solvents used for surface preparation and cleanup.

6.1.2 Maintain daily records which include the following information:

6.1.2.1 volume coating/solvent mix ratio,

6.1.2.2 VOC content (lb/gal or grams/liter) and, for dip coating operations, viscosity (cSt) of coating,

6.1.2.3 volume of each coating used (gallons), and

6.1.2.4 quantity of cleanup solvent used (gallons).

6.2 Recordkeeping for VOC Emission Control Systems

An operator using a VOC emission control system as a means of complying with the provisions in Section 5.2 shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. Key system operating parameters are those necessary to ensure compliance with VOC limits. The parameters include, but are not limited to, temperatures, pressures, and flowrates.

6.3 Work Practice Plan

The operator shall develop and implement a work practice plan to minimize VOC emissions from cleaning and from purging of equipment associated with new motor vehicle assembly coating operations for which emission limits are required by this rule. The plan specify practices and procedures to ensure VOC emissions from the operations pursuant to Section 6.3.1 through 6.3.6.

6.3.1 Vehicle Body wiping;

6.3.2 Coating line purging;

6.3.3 lushing of coating systems;

6.3.4 Cleaning of spray booth grates, walls, and equipment;

6.3.5 Cleaning external spray booth areas; and

6.3.6 Other housekeeping measures.

6.3.7 If an operator has a 2004 National Emission Standard for Hazardous Pollutants (NESHAP) (40 C R, part 63, subpart III) work practice plan in place, instead of creating another work practice plan to address VOC emissions, the operator shall add to its NESHAP work practice plan procedures for minimizing non-hazardous air pollutants (HAP) VOC emissions.

6.4 Compliance Statement Requirement

6.4.1 The manufacturer of coatings subject to this rule shall include a designation of VOC as supplied, including coating components, expressed in grams per liter or pounds per gallon, excluding water and exempt compounds, on material safety data sheets or product data sheets.

6.4.2 Manufacturers of solvents subject to this rule shall indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, the VOC content, density, and VOC composite partial vapor pressure, as defined in the rule, of the solvent, as supplied. The VOC content and VOC composite vapor pressure shall be expressed in units of gm/liter or lb/gallon and mm Hg at 20ºC (68º), respectively.

6.5 Test Methods

The following test methods are incorporated by reference herin, and shall be used to determine compliance with the provisions of this rule. Alternate test methods may be used provided they are approved by APCO, ARB, and EPA.

6.5.1 VOC content of coatings, other than reactive adhesives, used at motor vehicle assembly coatings facilities shall be determined using EPA Method 24, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 432.

6.5.2 The procedure for reactive adhesives in appendix A of the NESHAP for surface coating of plastic parts (40 C R Part 63, subpart PPPP) shall be used to determine the VOC content of reactive adhesives.

6.5.3 The manufacturer's formulation data shall be accepted as an alternative to these methods. If there is a disagreement between manufacturer's formulation data and the results of a subsequent test, use the test method results unless the facility can make a demonstration to the APCO's satisfaction that the manufacturer's formulation data are correct.

6.5.4 Acid Content: Measurement of acid content shall be determined by using ASTM D1613-03 "Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates used in Paint, Varnish, Lacquer, and Related Products," October 2003.

6.5.5 Determination of emissions of VOC from spray gun cleaning systems shall be made using South Coast Air Quality Management District "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," October 3, 1989.

6.5.6 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.

6.5.7 Determination of Overall Capture and Control Efficiency of VOC Emission Control Systems

6.5.7.1 The capture efficiency for a VOC emission control system's collection device(s) shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 C R 51, Appendix M, Methods 204-204 , as applicable, or any other method approved by EPA, ARB, and the APCO.

6.5.7.2 The control efficiency of a VOC emission control system's control device(s) shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.5.8 or VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$CE_{CAPTURE\ AND\ CONTROL}$ [$CE_{CAPTURE}$ x $CE_{CONTROL}$] / 100

Where:

$CE_{CAPTURE\ AND\ CONTROL}$ Overall Capture and Control Efficiency, in percent

$CE_{CAPTURE}$ Capture Efficiency of the collection device, in percent, as determined in Section 6.5.7.1

$CE_{CONTROL}$ Control Efficiency of the control device, in percent, as determined in Section 6.5.7.2

6.6 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.

6.7 Version of Test Methods

All ASTM test methods referenced in Section 6.0 are the most recently EPA-approved version that appears in the Code of ederal Regulations as Materials Approved for Incorporation by Reference.

7.0 Compliance Schedule

Operators of facilities subject to Rule 4602 shall be in compliance with rule requirements on and after January 1, 2011.

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RULE 4603 SURFACE COATING OF METAL PARTS AND PRODUCTS, PLASTIC PARTS AND PRODUCTS, AND PLEASURE CRAFTS (Adopted April 11, 1991; Amended September 19, 1991; Amended May 21, 1992; Amended December 17, 1992; Amended May 20, 1993; Amended September 21, 2000; Amended December 20, 2001; Amended May 18, 2006; Amended September 20, 2007; Amended October 16, 2008; Amended September 17, 2009)

1.0 Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOC) from the coating of metal parts and products, large appliances parts or products, metal furniture, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure crafts, and from the organic solvent cleaning and storage and disposal of solvents and waste solvent materials associated with such coating. This rule also specifies the administrative and recordkeeping requirements and the test methods for determining the VOC content, the VOC emissions, the VOC capture efficiency, the acid content, the metallic or iridescent quality of coatings, and the VOC emissions from spray gun cleaning systems.

2.0 Applicability

The provisions of this rule shall apply to the surface coating of metal parts or products, large appliances parts or products, metal furniture, and plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure crafts, and to the organic solvent cleaning, and the storage and disposal of all solvents and waste solvent materials associated with such coating.

3.0 Definitions

3.1 Aerospace Vehicles: the completed unit of any aircraft, helicopter, missile or space vehicle.

3.2 Air Dried: a process whereby the coated object is cured or dried at ambient temperature or at a temperature below 194°F.

3.3 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.4 Antifoulant Coating: any coating applied to the underwater portion of a pleasure craft to prevent the attachment of biological organisms, and registered with the EPA as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code Section 136).

3.5 Application Equipment: a device, including, but not limited to, a spray gun, brush, and roller, used to apply adhesives, coatings, or inks.

3.6 ARB: California Air Resources Board.

3.7 ASTM: means ASTM International.

3.8 Baked: a process whereby the coated object is heated above ambient temperature to a temperature at or above 194°F for the purpose of curing or drying.

3.9 Basecoat/Clearcoat: a two-step topcoat system in which a highly pigmented, often metallic, basecoat is followed by a clearcoat, resulting in a finish with high gloss

3.10 Bench Scale Project: a project (other than at a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top.

3.11 Brush Coating: the manual application of coatings using brushes or rollers.

3.12 Business Machine: a device that uses electronic or mechanical methods to process information, perform calculations, print or copy information or convert sound into electrical impulses for transmission, including devices listed in standard industrial classification numbers 3572, 3573, 3574, 3579, and 3661 and photocopy machines, a subcategory of standard industrial classification number 3861.

3.13 Camouflage Coating: a coating used primarily by the military to conceal equipment from detection.

3.14 CFR: Code of Federal Regulations.

3.15 Clearcoat: a transparent coating usually applied over a colored, opaque coat to improve gloss and provide protection to the colorcoat below.

3.16 Clear Coating: a colorless coating which contains binders, but no pigment, and is formulated to form a transparent film.

3.17 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.18 Coating of Plastic Parts of Automobiles and Trucks: the coating of any plastic part that is or shall be assembled with other parts to form an automobile or truck.

3.19 Coating of Plastic Parts of Business Machines: the coating of any plastic part that is or shall be assembled with other parts to form a business machine.

3.20 Coils: metal sheets or strips which are rolled into coils for further industrial or commercial use.

3.21 Continuous Coating: an enclosed coating system where spray nozzles coat metal parts and products as they are conveyed through the enclosure. Water wash zones control the inlet and outlet of the enclosure. Excess coating drains into a recirculation system.

3.22 Cured Adhesive, Cured Coating, or Cured Ink: an adhesive, coating, or ink that is dry to the touch.

3.23 Degreaser: a tank, tray, drum or other container in which objects to be cleaned are exposed to a solvent or solvent vapor in order to remove contaminants. The objects to be cleaned include, but are not limited to, parts, products, tools, machinery, and equipment. An enclosed spray application equipment cleaning system is not a degreaser.

3.24 Dip Coating: the process in which a substrate is immersed in a solution (or dispersion) containing the coating material, and then withdrawn.

3.25 Dissolver: an organic solvent that is added to an adhesive, coating, or ink in order to melt or to liquefy solid particles.

3.26 Electric Dissipating Coating: a coating that rapidly dissipates a high-voltage electric charge.

3.27 Electrodeposition: a dip coating application method where the paint solids are given an electrical charge which is then attracted to a substrate.

3.28 Electrostatic Application: a method of spray application of coatings where an electrostatic potential is created between the parts to be coated and the paint particles.

3.29 EMI/RFI Shielding: a coating used on electrical or electronic equipment to provide shielding against electromagnetic interference, radio frequency interference, or static discharge.

3.30 EPA: United States Environmental Protection Agency.

3.31 Exempt Organic Compounds: all organic compounds not classified as volatile organic compounds (VOC), as listed in Rule 1020 (Definitions).

3.32 Extreme High Gloss Coating: any coating which achieves at least 95% reflectance on a 60 degree gloss meter when tested by ASTM D-523-89.

3.33 Extreme Performance Coating: a coating used on a metal surface where the coated surface is, in its intended use, exposed to any of the following:

3.33.1 Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleaners, or abrasive scouring agents; or

3.33.2 Unprotected shipboard conditions; or

3.33.3 Temperatures consistently in excess of 250°F; or

3.33.4 Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solutions.

3.34 Flow Coating: a coating application system, with no air supplied to the nozzle, where paint flows over the part and the excess coating drains back into the collection system.

3.35 Fog Coating: a coating that is applied to a plastic part for the purpose of color matching without masking in a molded-in texture. A fog coat shall be applied to a thickness of more than 0.5 mils of coating solids.

3.36 Finish Primer/Surfacer: a coating applied with a wet film thickness of less than 10 mils or more prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, or moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections.

3.37 Grams of VOC per Liter of Coating Applied, Excluding Water and Exempt Compounds: the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating Applied Excluding Water and Exempt Compounds} = \frac{Ws - Ww - Wec}{Vm - Vw - Vec}$$

Where:

Ws	weight of volatile compounds, in grams
Ww	weight of water, in grams
Wec	weight of exempt compounds, in grams
Vm	volume of material, in liters
Vw	volume of water, in liters

Vec volume of exempt compounds, in liters

3.38 Grams of VOC per liter of Material: the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{Ws - Ww - Wec}{Vm}$$

Where:

Ws weight of volatile compounds, in grams
Ww weight of water, in grams
Wec weight of exempt compounds, in grams
Vm volume of material, in liters

3.39 Heat Resistant Coating: any coating, which during normal use, must withstand temperatures of at least 400°F.

3.40 High Build Primer/Surfacer: 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 or subsequent coatings, or a moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections.

3.41 High Gloss Coating: any coating which achieves at least 85% reflectance on a 60 degree gloss meter when tested by ASTM Method D-523-89.

3.42 High Performance Architectural Coating: a coating used to protect architectural subsections and which meets the requirements of the Architectural Aluminum Manufacturers Association publication number AAMA 605.2-1980.

3.43 High Temperature Coating: any coating that is certified to withstand temperatures of at least 1,000°F for 24 hours.

3.44 High-Volume, Low-Pressure (HVLP) Spray Equipment: equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure, measured dynamically at the center of the air cap and the air horns.

3.45 Large Appliance Part: any organic surface-coated metal lid, door, casing, or other interior or exterior metal part or accessory that is assembled to form a large appliance product.

3.46 Large Appliance Product: any organic surface-coated metal range, microwave oven, refrigerator, freezer, washer, dryer, dishwasher, water heater, or trash compactor manufactured for household, commercial, or recreational use.

3.47 Light-Duty Truck: any truck having a manufacturer's maximum gross vehicle weight rating of under 6,001 pounds.

3.48 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.49 Magnet Wire: wire used in electromagnetic field application in electrical machinery and equipment such as transformers, motors, generators, and magnetic tape recorders.

3.50 Maintenance Cleaning: the cleaning of tools, forms, molds, jigs, machinery, and equipment (except coating application equipment, ink application equipment, or adhesive application equipment), and the cleaning of work areas where maintenance or manufacturing occurs.

3.51 Manufacturing Process: the process of making goods or articles by hand or by machine.

3.52 Marine Vessel: any tugboat, tanker, freighter, passenger ship, barge, or other boat, ship, or watercraft. This includes both salt water and fresh water vessels.

3.53 Mask Coating: a thin film coating applied through a template to coat a small portion of a substrate.

3.54 Metal Containers or Closures: the interior or the exterior of formed metal cans, drums, pails, or crowns; or flat metal sheets which are intended to be formed into cans, drums, pails, lids, or crowns.

3.55 Metal Furniture: includes, but is not limited to, the following types of products: household, office, institutional, laboratory, hospital, public building, restaurants, barber and beauty shop, and dental furniture, as well as components of these products. It also includes office and store fixtures, partitions, shelving, lockers, lamps, and lighting fixtures, and wastebaskets

3.56 Metal Parts and Products: any component or complete unit fabricated from metal, except those subject to the coating provisions of other source specific rules.

3.57 Metallic/iridescent Coating: any coating which contains more than 0.042 lb/gal or 5 grams/liter of metal or iridescent particles, as applied, where such particles are visible in the dried film.

3.58 Military Specification Coating: a coating which has a formulation approved by the United States Military Agency for use on military equipment.

3.59 Mold Seal Coating: the initial coating applied to a mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.

3.60 Motor Vehicle: a vehicle which is self-propelled and is a device by which any person or property may be propelled, moved or drawn upon a highway, excepting a device moved by human power or used exclusively upon stationary rails or tracks.

3.61 Multi-Colored Coating: a coating which exhibits more than one color when applied, and which is packaged in a single container and applied in a single coat.

3.62 Multi-Component Coating: 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.

3.63 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.64 Non-Atomized Solvent Flow: solvents in the form of a liquid stream without the introduction of any propellant.

3.65 Non-Leaking Container: a container without liquid leak.

3.66 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.67 One-Component Coating: 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.

3.68 Optical Coating: a coating applied to optical lenses.

3.69 Organic Solvent: the same as "Solvent."

3.70 Organic Solvent Cleaning: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.71 Plastic Part: a piece made from a substance that has been formed from resin through the application of pressure or heat or both.

3.72 Pleasure Craft: marine 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 vessel shall be responsible for certifying that the intended use is for recreational purposes.

3.73 Pleasure Craft Coating: any marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, or roller, or other means to a pleasure craft.

3.74 Polyester Resin Materials: materials including, but not limited to, unsaturated polyester resins such as isophthalic, orthophthalic, halogenated, biphenol-A, vinyl-ester, or furan resins, cross-linking agents, catalysts, gel coats, inhibitors, accelerators, promoters, and any other VOC containing materials in polyester resin coating operations.

3.75 Polyester Resin Operations: methods used for the production or rework of products by mixing, pouring, hand-layup, impregnating, injecting, forming, winding, spraying, and/or curing unsaturated polyester resin materials with fiberglass, fillers, or any other reinforcement materials and associated cleanup.

3.76 Pretreatment Coating or Pretreatment Wash Primer: any coating which contains no more than 12 percent solids by weight, and a minimum of one-half (0.5) percent acid by weight, is necessary to provide surface etching, and is applied directly to bare metal or fiberglass surfaces to provide corrosion resistance and adhesion.

3.77 Propellant: any gas, including air, in a pressure container for expelling the contents when the pressure is released.

3.78 Repair: recoating portions of previously coated product to cover mechanical damage to the coating following normal painting operations.

3.79 Repair Cleaning: a solvent cleaning operation or activity carried out during a repair process.

3.80 Repair Process: the process of returning a damaged object or an object not operating properly to good condition.

3.81 Research and Development: a facility or portion thereof used to further the development of useful materials, devices, systems, or methods, including, but not limited to, design, development, and improvement of prototypes and processes. Research and development does not include the manufacturing process itself.

3.82 Roll Coating: the application of coatings from a paint trough to a flat surface by a mechanical series of rollers.

3.83 Rolling, Consecutive 365-Day Period: any given date plus the immediate, previous 364 days.

3.84 SCAQMD: South Coast Air Quality Management District.

3.85 Scientific Instruments: instruments (including the components, assemblies, and subassemblies used in their manufacture) and associated accessories and reagents which are used for the detection, measurement, analysis, separation, synthesis, or sequencing of various compounds.

3.86 Shock-Free Coating: a coating applied to electrical components to protect the user from electric shock. The coating has characteristics of having a low capacitance and high resistance, and being resistance to breaking down under a high voltage.

3.87 Silicone Release: a coating which contains silicone resin and has as its primary function the release of food products from metal surfaces such as baking pans.

3.88 Solar Absorbent Coating: a coating which has as its primary purpose the absorption of solar radiation.

3.89 Solid Film Lubricant: a very thin coating consisting of a binder system containing as its chief pigment material one (1) or more of the following: molybdenum disulfide, graphite, polytetrafluoroethylene (PTFE) or other solids that act as a dry lubricant between closely-fitting surfaces.

3.90 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.91 Solvent Flushing: the use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of equipment by flushing solvent, by a non-atomized solvent flow, through the equipment.

3.92 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.93 Stencil Coating: a coating that is applied over a stencil to a plastic part at a thickness of 1 mil or less of coating solids. Stencil coat is most frequently letters, numbers, or decorative designs.

3.94 Stripping: the use of solvent to remove material such as cured adhesives, cured inks, cured or dried paint, cured or dried paint residue or temporary protective coating.

3.95 Surface Preparation: the removal of contaminants from a surface prior to the application of coatings, inks, or adhesives or before proceeding to the next step of a manufacturing process.

3.96 Transfer Efficiency: a ratio of the amount of coating solids adhering to the object being coated to the total amount of coating solids used in the application process, expressed as a percentage.

3.97 Thinner: a solvent that is used to dilute coatings to reduce viscosity, color strength, and solids, or to modify drying conditions.

3.98 Texture coating: a coating that is applied to a plastic part which, in its finished form, consists of discrete raised spots of the coating.

3.99 Topcoat: any final coating applied to a substrate. Several layers of topcoat maybe applied in some cases.

3.100 Touch Up: that portion of the coating operation which is incidental to the main coating process but necessary to cover minor imperfections or to achieve coverage as required.

3.101 Vacuum Metalizing/Physical Vapor Deposition (PVD): a process whereby metal is vaporized and deposited on a substrate in a vacuum chamber.

3.102 Viscosity Reducer: an organic solvent which is added to an adhesive, coating or ink to make it more fluid.

3.103 Volatile Organic Compounds (VOC): as defined in Rule 1020 (Definitions).

3.104 Waste Solvent Material: any solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOC including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

3.105 Wipe Cleaning: a solvent cleaning activity performed by hand rubbing an absorbent material such as a rag, paper, sponge, brush, or cotton swab containing solvent.

4.0 Exemptions

4.1 Except for large appliance parts and products, metal furniture, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations subject to Section 5.4.1, Section 5.5.1, Section 5.6.1, and Section 5.7.1, respectively, an operator at a given

stationary source may use up to a total of 55 gallons of non-compliant coatings per rolling, consecutive 365-day period. All other provisions of the rule, including application methods and administrative requirements shall apply to the use of the non-compliant coatings.

4.1.1 A non-compliant coating is a coating with VOC content, as applied, in excess of the applicable VOC content limits in Sections 5.1, or 5.2.

4.1.2 The 55-gallon exemption limit is the total amount of non-compliant coatings, as applied, for all operations that would otherwise be subject to Section 5.1, or Section 5.2 VOC content limits.

4.1.3 The 55-gallon exemption limit does not apply to non-compliant coatings used in a coating operation with an APCO-approved VOC emission control system that meets the requirements of Section 5.8.

4.2 Effective until December 31, 2010, the requirements of this rule shall not apply to metal parts and products touch-up and repair coating operation. On and after January 1, 2011, touch and repair coating used on metal parts and products shall comply with the applicable VOC limit specified in Section 5.2 Table 1.

4.3 Any source which is in full compliance with the provisions of this rule shall be exempt from otherwise applicable portions of Rule 4661 (Organic Solvents).

4.4 The requirements of this rule shall not apply to the application of coatings to aircraft, aerospace vehicles, marine vessels, can, coils, and magnetic wire.

4.5 The provisions of this rule shall not apply to an operation subject to the requirements of Rule 4602 (Motor Vehicle Assembly Coatings).

4.6 The provisions of this rule shall not apply to an operation subject to the requirements of Rule 4612 (Motor Vehicle and Mobile Equipment Operations Phase II).

4.7 The provisions of this rule shall not apply to polyester resin operations and the application of polyester resin materials to metal parts and products that are subject to Rule 4684 (Polyester Resin Operations).

4.8 For plastic parts and products coating operations (except for automotive/transportation and business machine plastic parts as specified in Section 4.10), the VOC limits of Section 5.5 Table 3 and the solvent cleaning requirements of Section 5.10 shall not apply to the types of coatings and coating operations specified in Sections 4.8.1 through 4.8.9, provided the operator

complies with the work practice standards in Section 5.9 and coating application methods in Section 5.12 of this rule.

4.8.1 Touch-up and repair coatings.

4.8.2 Stencil coatings applied on clear or transparent substrates.

4.8.3 Clear or translucent coatings.

4.8.4 Coatings applied at a paint manufacturing facility while conducting performance tests on coatings.

4.8.5 Any individual coating category used in volumes less than 50 gallons in any one calendar year, if substitute compliance coatings are not available, and the total usage of all such coatings does not exceed 200 gallons per calendar year, per stationary source.

4.8.6 Reflective coatings used on highway cones.

4.8.7 Mask coatings that are less than 0.5 millimeter thick (dried) and the area coated is less than 25 square inches.

4.8.8 Electro-Magnetic Interference (EMI)/Radio Frequency Interference (RFI) shielding coatings.

4.8.9 Heparin-bezalkonium chloride (HBAC)-containing coatings applied to medical devices, provided that the total usage of all such coatings does not exceed 100 gallons per calendar year, per stationary source.

4.9 For plastic parts and products coating operations (except for automotive/transportation and business machine plastic parts as specified in Section 4.10), the coating application methods in Section 5.12 shall not apply to airbrush operations using five (5) gallons or less of coating per calendar year, provided the operator complies with the applicable VOC limits in Table 3, work practice standards in Section 5.9 and applicable recordkeeping requirement of Section 6.2.

4.10 For automotive/transportation and business machine plastic parts and products coating operations, the VOC limits of Section 5.6 Table 4 and the solvent cleaning requirements of Section 5.10 shall not apply to the types of coatings and coating operations specified in Sections 4.10.1 through 4.10.8, provided the operator complies with the work practice standards in Section 5.9 and coating application methods in Section 5.12 of this rule.

4.10.1 Texture Coatings.

4.10.2 Texture Topcoats.

4.10.3 Gloss Reducers.

4.10.4 Vacuum Metalizing Coatings.

4.10.5 Adhesion Primers.

4.10.6 Electrostatic Preparation Coatings.

4.10.7 Resist Coatings.

4.10.8 Stencil Coatings.

4.11 For pleasure craft surface coating operations, the application method in Section 5.12 shall not apply to extreme gloss coating provided the operator complies with the extreme gloss coating VOC limit in Table 5 and the work practice standards in Section 5.9 of this rule.

4.12 The provisions of this rule shall not apply to stripping of cured coatings, cured adhesives, and cured inks, except the stripping of such materials from spray application equipment.

4.13 The VOC content limits of Table 6 shall not apply to the following applications:

4.13.1 Cleaning of solar cells, laser hardware, scientific instruments, or high precision optics.

4.13.2 Cleaning in laboratory tests and analyses, or bench scale or research and development projects.

4.13.3 Cleaning of paper-based gaskets.

4.13.4 Cleaning of clutch assemblies where rubber is bonded to metal by means of an adhesive.

4.14 The VOC content limit of Table 6, Category C, shall not apply to the cleaning of application equipment used to apply coatings on satellites or to the cleaning of application equipment used to apply radiation effect coatings.

5.0 Requirements

5.1 General Coating Limits for Metal Parts and Products, Except for Large Appliance Parts or Products, and Metal Furniture Subject to Section 5.4.1

Except as otherwise provided by this rule, no operator shall apply to any metal part or product any coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter (or pounds per gallon) of coating, less water and exempt compounds, as applied.

5.1.1 Baked Coating: 275 grams/liter (2.3 pounds/gallon)

5.1.2 Air-Dried Coating: 340 grams/liter (2.8 pounds/gallon)

5.1.3 VOC Content Limit for Dip coating of steel joists (SIC 3441), air-dried.

5.1.3.1 340 grams of VOC/liter (2.8 pounds of VOC/gallon) for coatings with a viscosity, as applied, of more than 45.6 centistokes at 78°F or an average dry-film thickness of greater than 2.0 mils;

5.1.3.2 400 grams of VOC/liter (3.32 pounds of VOC/gallon) for coatings with a viscosity, as applied, of less than or equal to 45.6 centistokes at 78°F and an average dry-film thickness of less than or equal to 2.0 mils.

5.2 Specialty Coating for Metal Parts and Products, Except for Large Appliance Parts or Products, and Metal Furniture Subject to Section 5.4.1

An operator subject to Section 5.2 shall not apply to any metal part or product any specialty coating with a VOC content in excess of the limits in Table 1.

Table 1 - VOC Content Limits for Specialty Coatings, except for Large Appliance Parts or Products, and Metal Furniture subject to Section 5.4.1 Limits are expressed as grams of VOC /liter (or pounds of VOC/gallon) of coating, less water and less exempt compounds, as applied.		
Coating Type	VOC Limit	
	Baked	Air-Dried
Camouflage	360 (3.0)	420 (3.5)
Extreme Performance	420 (3.5) Effective until December 31, 2010. 360 (3.0) Effective on and after January 1, 2011.	420 (3.5)
Heat Resistant	360 (3.0)	420 (3.5)
Extreme High Gloss	360 (3.0)	420 (3.5)
High Performance Architectural	420 (3.5)	420 (3.5)
High Temperature	420 (3.5)	420 (3.5)
Metallic Coating	360 (3.0)	420 (3.5)
Pretreatment Coating	420 (3.5)	420 (3.5)
Touch Up and Repair Coating	360 (3.0) Effective on and after January 1, 2011.	420 (3.5) Effective on and after January 1, 2011.
Silicone Release	420 (3.5)	420 (3.5)
Solar Absorbent	360 (3.0)	420 (3.5)
Solid Film Lubricant	880 (7.3)	880 (7.3)

5.3 In lieu of complying with the applicable VOC content limits of Section 5.1, or Table 1, an operator may control emissions from coating operations with an APCO-approved VOC emission control system that meets the requirements of Section 5.8.

5.4 Coating Limits for Large Appliance Parts or Products Coating Operation and Metal Furniture Coating Operation

5.4.1 An operator whose total actual VOC emissions from all large appliance parts or products coating operations, or metal furniture coating operations, including related cleaning activities, at a stationary source are equal to or greater than three (3) tons of VOC per 12-month rolling period, before consideration of controls, shall not apply to any large appliance parts or products or metal furniture any coating with a VOC content in excess of the applicable limits in Table 2. In lieu of complying with the VOC content limits in Table 2, an operator may comply with Section 5.4.1.2.

5.4.1.1 An operator shall comply with the applicable recordkeeping requirements of Section 6.2 to demonstrate if the VOC emissions from all large appliance parts or products coating operations, or metal furniture coating operations, including related cleaning activities, are equal to or greater than three (3) tons of VOC per 12-month rolling period.

5.4.1.2 In lieu of complying with the VOC content limits in Table 2, an operator may operate a VOC control system that meets the applicable requirements of Section 5.8.

5.4.2 An operator of large appliance parts or products coating operations, or metal furniture coating operations whose total actual VOC emissions from all large appliance parts or products coating operations, or metal furniture coating operations, including related cleaning activities, at a stationary source are less than three (3) tons of VOC per 12-month rolling period, before consideration of controls, shall comply with the applicable VOC content limits of coatings specified in Sections 5.1 and 5.2. An operator shall comply with the applicable recordkeeping requirements of Section 6.2 to demonstrate if the VOC emissions from all large appliance parts or products coating operations, or metal furniture coating operations, including related cleaning activities are less than three (3) tons of VOC per 12-month rolling period.

Table 2 - VOC Content Limits for Large Appliance Parts or Products, and Metal Furniture Coating Operations subject to Section 5.4.1
Limits are expressed as grams of VOC/liter (or pounds of VOC/gallon) of coating, less water and less exempt compounds, as applied.

Coating Type	VOC Limit	
	Baked	Air-dried
General, One Component	275 (2.3)	275 (2.3)
General, Multi-Component	275 (2.3)	340 (2.8)
Extreme High Gloss	360 (3.0)	340 (2.8)
Extreme Performance	360 (3.0)	420 (3.5)
Heat Resistant	360 (3.0)	420 (3.5)
Metallic	420 (3.5)	420 (3.5)
Pretreatment Coating	420 (3.5)	420 (3.5)
Solar Absorbent	360 (3.0)	420 (3.5)

5.5 Plastic Parts and Products Coating Operations (Except for Automotive/Transportation and Business Machine Plastic Parts and Products Coating Operations that are subject to Section 5.6)

On and after January 1, 2011, an operator of plastic parts and products coating operations, except for automotive/transportation and business machine plastic parts and products coating operations that are subject to Section 5.6, shall comply with the applicable requirements of Section 5.5.1 or Section 5.5.2.

5.5.1 An operator whose total actual VOC emissions from all metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities, at a stationary source are equal to or greater than 2.7 tons of VOC per 12-month rolling period, before consideration of controls, shall not apply to any plastic parts and products any coating with a VOC content in excess of the applicable limits in Table 3.

5.5.1.1 An operator shall comply with the applicable recordkeeping requirements of Section 6.2 and calculate the VOC emission metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, to demonstrate if the VOC emissions from all, including related cleaning activities, are equal to or greater than 2.7 tons of VOC per 12-month rolling period.

5.5.1.2 In lieu of complying with the VOC content limits in Table 3, an operator may operate a VOC control system that meets the applicable requirements of Section 5.8.

5.5.2 An operator of plastic parts and products coating operations whose total actual VOC emissions from all metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities, at a stationary source are less than 2.7 tons of VOC per 12-month rolling period, before consideration of controls, are not subject to the coating limits in Table 3. However, the operator shall comply with the applicable recordkeeping requirements of Section 6.2 and calculate the VOC emission to demonstrate if the VOC emissions from all metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities are less than 2.7 tons of VOC per 12-month rolling period.

Table 3 - VOC Content Limits for Plastic Parts and Products Coating Operations Subject to Section 5.5.1, except for Automotive/Transportation and Business Machine Plastic Parts and Products that are subject to Section 5.6. Limits are expressed as grams of VOC/liter (or pounds of VOC/gallon) of coating, less water and less exempt compounds, as applied.	
Coating Type	VOC Limit
General One-Component	280 (2.3)
General Multi-Component	420 (3.5)
Electric Dissipating Coatings and Shock-Free Coatings	800(6.7)
Extreme Performance	420 (3.5) for 2-pack coating
Metallic	420 (3.5)
Military Specification	340 (2.8) for 1 pack 420 (3.5) for 2-pack coating
Mold-Seal	760(6.3)
Multi-colored Coatings	680 (5.7)
Optical Coatings	800 (6.7)
Vacuum-Metalizing	800 (6.7)

5.6 Automotive/Transportation and Business Machine Plastic Parts and Products Coating Operations

On and after January 1, 2011, an operator of automotive/transportation and business machine plastic parts and products coating operations shall comply with the applicable requirements of Section 5.6.1 or Section 5.6.2.

5.6.1 An operator whose total actual VOC emissions from all metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities, at a stationary source are equal to or greater than 2.7 tons of VOC per 12-month rolling period, before consideration of controls, shall not apply to any automotive/transportation and business machine plastic parts and products any coating with a VOC content in excess of the applicable limits in Table 4.

5.6.1.1 An operator shall comply with the applicable recordkeeping requirements of Section 6.2 calculate the VOC emission to demonstrate if the VOC emissions from all metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities, are equal to or greater than 2.7 tons of VOC per 12-month rolling period.

5.6.1.2 In lieu of complying with the VOC content limits in Table 3, an operator may operate a VOC control system that meets the applicable requirements of Section 5.8.

5.6.2 An operator of automotive/transportation and business machine plastic parts and products coating operations whose total actual VOC emissions from all metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities, at a stationary source are less than 2.7 tons of VOC per 12-month rolling period, before consideration of controls, are not subject to the coating limits in Table 4. However, the operator shall comply with the applicable recordkeeping requirements of Section 6.2 and calculate the VOC emission to demonstrate if the VOC emissions from all metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities are less than 2.7 tons of VOC per 12-month rolling period.

Table 4 - VOC Content Limits for Automotive/Transportation and Business Machine Plastic Parts and Products Coating Operations Subject to Section 5.6.1 Limits are expressed as grams of VOC/liter (or pounds of VOC/gallon) of coating, less water and less exempt compounds, as applied.	
VOC Content Limit For Automotive/Transportation Plastic Parts and Products Coatings	
Coating Type	VOC Limit
I. High Baked Coatings - Interior and Exterior	
Flexible Primer	540 (4.5)
Non-flexible Primer	420 (3.5)
Basecoat	520 (4.3)
Clearcoat	480 (4.0)
Non-basecoat/clearcoat	520 (4.3)
II. Low Bake/Air-Dried Coatings - Exterior Parts	
Primers	580 (4.8)
Basecoat	600 (5.0)
Clearcoat	540 (4.5)
Non-basecoat/clearcoat	600 (5.0)
III. Low Bake/Air-Dried Coatings - Interior parts	600 (5.0)
IV.Touch-up and Repair Coatings	620 (5.2)
VOC Content Limit For Business Machine Plastic Parts and Products Coatings	
Coating Type	VOC Limit
Primer	350 (2.9)
Topcoat	350 (2.9)
Texture Coat	350 (2.9)
Fog Coat	260 (2.2)
Touch-up and Repair	350 (2.9)

5.7 Pleasure Craft Coating Operations

On and after January 1, 2011, an operator of pleasure craft coating operations shall comply with the applicable requirements of Section 5.7.1 or Section 5.7.2.

5.7.1 An operator whose total actual VOC emissions from all metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities, at a stationary source are equal to or greater than 2.7 tons of VOC per 12-month rolling period, before consideration of controls, shall not apply any coatings on pleasure crafts with a VOC content in excess of the applicable limits in Table 5.

5.7.1.1 An operator shall comply with the applicable recordkeeping requirements of Section 6.2 to demonstrate if the VOC emissions from all metal parts and products, plastic parts and products,

automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities, are equal to or greater than 2.7 tons of VOC per 12-month rolling period.

5.7.1.2 In lieu of complying with the VOC content limits in Table 5, an operator may operate a VOC control system that meets the applicable requirements of Section 5.8.

5.7.2 An operator of pleasure craft coating operations whose total actual VOC emissions from all metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities, at a stationary source are less than 2.7 tons of VOC per 12-month rolling period, before consideration of controls, are not subject to the coating limits in Table 5. However, the operator shall comply with the applicable recordkeeping requirements of Section 6.2 calculate the VOC emission to demonstrate if the VOC emissions from all metal parts and products, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure craft coating operations, including related cleaning activities are less than 2.7 tons of VOC per 12-month rolling period.

Table 5 - VOC Content Limits for Pleasure Craft Coating Operations Subject to Section 5.7.1
Limits are expressed as grams of VOC/liter (or pounds of VOC/gallon) of coating, less water and less exempt compounds, as applied.

Coating Type	VOC Limit
Extreme High Gloss Topcoat	490 (4.1)
High Gloss Topcoat	420 (3.5)
Pretreatment Wash Primer	780 (6.5)
Finish Primer Surfacer	420 (3.5)
High Build Primer Surfacer	340 (2.8)
Aluminum Substrate Antifoulant Coating	560 (4.7)
Other Substrate Antifoulant Coating	330 (2.8)
All other pleasure craft surface coatings for metal or plastic	420 (3.5)

5.8 VOC Emission Control System Requirements

In lieu of complying with applicable provisions of Sections 5.1, 5.2, 5.4, 5.5, 5.6, 5.7, 5.10, or 5.12, an operator may use a VOC emission control system that controls emissions from the source operation and meets the requirements of Sections 5.8.1 through 5.8.4.

5.8.1 The VOC emission control system shall be under District permit.

5.8.2 The VOC emission control system shall comply with the requirements of Sections 5.8.3 and 5.8.4 during periods of emission-producing activities.

5.8.3 The VOC emission control system shall be operated with an overall capture and control efficiency of at least 90 percent by weight as determined in Section 6.3.

5.8.4 Use of a VOC emission control system shall not result in emissions in excess of those that would have been emitted had the operator complied with the applicable provisions of Sections 5.1, 5.2, 5.4, 5.5, 5.6, 5.7, 5.10 or 5.12.

5.8.4.1 The following equation shall be used to determine if the minimum required overall capture and control efficiency of an emission control system is at an equivalent or greater level of VOC reduction as would be achieved using compliant materials, equipment, or work practices, as stated in Section 5.8.

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

Where:

CE Minimum Required Control Efficiency, percent

VOC_{LWc} VOC Limit of Rule 4603, less water and less exempt compounds

$VOC_{LWn,Max}$ Maximum VOC content of coating (or solvent) 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 noncompliant coating (or cleaning solvent), containing the maximum VOC content of the multi-component (or cleaning solvent)

D_c Density of corresponding solvent, reducer, or thinner used in the compliant coating (or cleaning solvent) system 880 gm/liter.

5.9 Work Practice Standards

5.9.1 An operator of large appliance parts and products, and metal furniture coating operations shall minimize VOC emissions by complying with the work practice standards specified in Sections 5.9.3 through 5.9.6.

5.9.2 Effective on and after January 1, 2011, an operator of metal parts and products coating operations, plastic parts and products coating operations, automotive/transportation and business machine plastic parts and products coating operations, and pleasure craft coating operations shall minimize VOC emissions by complying with work practice standards specified in Sections 5.9.3 through 5.9.6.

5.9.3 Store all VOC-containing coatings, thinners, cleaning materials, and waste materials in closed non-absorbent and non-leaking containers. The containers shall remain closed at all times, except when specifically in use.

5.9.4 Close mixing vessels that contain VOC coatings and other materials, except when specifically in use.

5.9.5 Minimize spills of any VOC-containing materials and clean up spills immediately.

5.9.6 Convey VOC-containing materials in closed containers or pipes.

5.10 Organic Solvent Cleaning Requirements

5.10.1 An operator shall not use organic solvents for cleaning operations that exceed the VOC content limits specified in Table 6.

5.10.2 An operator shall perform all solvent cleaning operations with cleaning material having VOC content of 25 g/L or less, unless such cleaning operations are performed within the control of an APCO-approved VOC emission control system that meets the requirements of Section 5.8.

Table 6 - VOC Content Limits for Organic Solvents Used in Cleaning Operations Limits are expressed as grams of VOC/liter (or pounds of VOC/gallon) of material	
Type of Solvent Cleaning Operation	VOC Content Limit
A. Product Cleaning During Manufacturing Process or Surface Preparation for Coating Application	25 (0.21)
B. Repair and Maintenance Cleaning	25 (0.21)
C. Cleaning of Coating Application Equipment	25 (0.21)

5.11 Solvent Storage and Disposal Requirements

An operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc, coatings, adhesives, catalysts, and thinners in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

5.12 Application Equipment Requirements: An operator shall not use or operate any coating application equipment on any metal parts and products, large appliances parts and products, metal furniture, plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure crafts subject to the provisions of this rule unless one of the following methods is used:

5.12.1 Electrostatic application;

5.12.2 Electrodeposition;

5.12.3 High-Volume, Low-Pressure (HVLP) spray,

5.12.3.1 High-Volume, Low-Pressure (HVLP) spray equipment shall be operated in accordance with the manufacturer's recommendations.

5.12.3.2 For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of manufacturer's published technical material or by a demonstration using a certified air pressure

tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.12.3.3 A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Section 3.0.

5.12.4 Flow coating;

5.12.5 Roll coating;

5.12.6 Dip coating;

5.12.7 Brush coating; or

5.12.8 Continuous coating;

5.12.9 Any other coating application method which is demonstrated to the APCO to be capable of achieving at least 65 percent transfer efficiency. The transfer efficiency shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User," May 24, 1989, as contained in Section 6.3.8. Prior written approval from the APCO shall be obtained for each coating application method to be used pursuant to Section 5.12.9.

5.12.10 In lieu of compliance with Sections 5.12.1 through 5.12.9 an operator may control emissions from application equipment with a VOC emission control system that meets the requirements of Section 5.8.

5.12 Prohibition of Specification

No person shall solicit or require for use or specify the application of a coating subject to this rule if such use or application results in a violation of any of the provisions of this rule. The prohibition of this Section shall apply to all written or oral contracts under the terms of which any coating is to be applied to any metal part or product at any physical location within the District.

6.0 Administrative Requirements

6.1 Labeling Requirements

6.1.1 Coating VOC Content

Each container or accompanying data sheet of any coating subject to this rule shall display the maximum VOC content of the coating, as applied, and after any thinning as recommended by the manufacturer. VOC content shall be displayed as grams of VOC per liter of coating (less water and exempt compounds). VOC content displayed may be calculated using product formulation data, or may be determined using the test method in Section 6.3. For determination of compliance and enforcement of the limits specified in Section 5.0 of this rule, the VOC content of any coating determined to exceed its applicable limit through the use of either product formulation data or the test method in Section 6.3.1 shall constitute a violation of this rule.

6.1.2 Thinning Recommendations

Each container or accompanying data sheet of any coating subject to this rule shall display a statement of the manufacturer's recommendation regarding thinning of the coating. This requirement shall not apply to the thinning of coatings with water.

6.1.3 Solvent Compliance Statement Requirements

Manufacturers of any solvents subject to this rule shall indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, the VOC content, and density of the solvent, as supplied. The VOC content shall be expressed in units of gm/liter or lb/gallon.

6.2 Recordkeeping

An operator subject to Section 5.0 or exempt by Sections 4.1, 4.8.5, 4.8.9 and 4.9 shall comply with the following requirements:

6.2.1 Maintain a current list of coatings and solvents in use which contains all of the coating data necessary to evaluate compliance, including the following information, as applicable:

6.2.1.1 mix ratio of components used,

6.2.1.2 VOC content and specific chemical constituents of coatings as applied, and

6.2.1.3 VOC content and specific chemical constituents of solvents used for surface preparation and cleanup.

6.2.2 Maintain daily records which include the following information:

6.2.2.1 volume coating/solvent mix ratio,

6.2.2.2 VOC content (lb/gal or grams/liter) and, for dip coating operations, viscosity (cSt) of coating,

6.2.2.3 volume of each coating used (gallons), and

6.2.2.4 quantity of cleanup solvent used (gallons).

6.2.3 VOC Emission Control System Records

An operator using a VOC emission control system pursuant to Section 5.8 as a means of complying with this rule shall maintain records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. Key system operating parameters are those necessary to ensure compliance with VOC limits. The parameters include, but are not limited to, temperatures, pressures, and flowrates.

6.2.4 Consistent records may be kept in grams/liter and liters instead of pounds/gallon and gallons. An operator of a stationary source subject to this rule shall maintain such records on a daily basis. An operator that is subject to the exemption of Section 4.1 shall maintain usage records of non-compliant coatings on the days that such non-compliant coatings are used.

6.2.5 The operator shall retain the records specified in Sections 6.2.1 through 6.2.4, as applicable, on site for a period of five years, make the records available on site during normal business hours to the APCO, ARB, or EPA and submit the records to the APCO, ARB, or EPA upon request.

6.3 Test Methods

The following test methods shall be used to determine compliance with the provisions of this rule. Alternate test methods may be used provided they are approved by the APCO, ARB, and EPA.

6.3.1 VOC content of coatings and solvents shall be analyzed by EPA Method 24 and analysis of halogenated exempt compounds shall be analyzed by ARB Method 422.

6.3.2 Emissions of VOC shall be measured by EPA Method 25, 25A, or 25B, as applicable, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 422.

6.3.3 The viscosity of coatings used for dip coating of steel joists as specified in Section 5.1.3 of this rule, shall be determined by using ASTM D5478-98 or ASTM D5125-97.

6.3.4 The quantification of coating as a metallic/iridescent topcoat shall be determined by SCAQMD Method 318 (Determination of Weight Percent of Elemental Metal in Coatings by X-ray Diffraction Method), July 1996.

6.3.5 Acid Content: Measurement of acid content of pre-treatment wash primers shall be conducted and reported in accordance with ASTM D1613-96, Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products.

6.3.6 Determination of emissions of VOC from spray gun cleaning systems shall be made using SCAQMD "General Method for Determining Solvent Losses from Spray Gun Cleaning Systems," dated October 3, 1989.

6.3.7 Determination of Overall Capture and Control Efficiency of VOC Emission Control Systems shall be made using the following methods:

6.3.7.1 The capture efficiency of a VOC emission control system's collection device shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable.

6.3.7.1.1 Capture Efficiency, in percent, is the ratio of the weight of VOC in the effluent stream entering the control device to the weight of VOC emitted from coating operations that are subject to this rule, both measured simultaneously, shall be calculated by the following equation:

Capture Efficiency (%) (Wc --; We) x 100

Where:

Wc weight of VOC entering the control device

We weight of VOC emitted

6.3.7.2 The control efficiency of a VOC emission control system's VOC control device shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.3.7.2.1 Control Efficiency, in percent, is the ratio of the weight of 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, shall be calculated by the following equation:

Control Device Efficiency (%) [(Wc-Wa) --; Wc] x 100

Where:

Wc weight of VOC entering the control device

Wa weight of VOC discharged from the control device

6.3.7.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{Capture\ and\ Control} = [\ CE_{Capture} \times CE_{Control}\ ] / 100$$

Where:

$CE_{Capture\ and\ Control}$ Overall Capture and Control Efficiency, in percent

$CE_{Capture}$ Capture Efficiency of the collection device, in percent, as determined in Section 6.3.7.1

$CE_{Control}$ Control Efficiency of the control device, in percent, as determined in Section 6.3.7.2.

6.3.8 The transfer efficiency of alternative coating application methods pursuant to Section 5.12.9 shall be determined in accordance with the SCAQMD Method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User," May 24, 1989.

6.4 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.

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

RULE 4604 - CAN AND COIL COATING OPERATIONS

(Adopted April 11, 1991) (Amended September 19, 1991; May 21, 1992; December 17, 1992; December 20, 2001; January 15, 2004; September 20, 2007)

1.0 Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from can and coil coating operations, and from organic solvent cleaning, storage and disposal associated with can coating and coil coating operations.

2.0 Applicability

This rule applies to can and coil coating operations, and to organic solvent cleaning, storage and disposal associated with can and coil coating operations.

3.0 Definitions

3.1 Aerosol Product: a hand-held, non-refillable container that expels a pressurized solvent-containing product by means of a propellant-induced force.

3.2 APCO: as defined in Rule 1020 (Definitions).

3.3 Application Equipment: a device, including, but not limited to, a spray gun, brush, or roller, used to apply adhesives, coatings, or inks.

3.4 ARB: California Air Resources Board.

3.5 Bench Scale Project: a project (other than at a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top.

3.6 Can and Coil Coating: a coating containing organic materials and applied by spray, roller or other means to the inside and/or outside surfaces of metal cans, drums, pails, or lids, or to the surface of flat metal sheets, strips, rolls, or coils for further industrial or commercial use.

3.7 CFR: Code of Federal Regulations

3.8 Closure: a component which is used to close or seal a container.

3.9 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.10 Coating Applicator: an apparatus used to apply a surface coating.

3.11 Coating Line: an operation or process for applying, drying, or baking and/or curing surface coatings, together with associated equipment including, but not limited to, a coating applicator, flash-off area, and oven.

3.12 Coil: a flat metal sheet or strip that is rolled or wound in concentric rings.

3.13 Container: a two-piece can, three-piece can, drum, pail, or tube.

3.14 Cured Adhesive, Cured Coating, or Cured Ink: an adhesive, coating, or ink that is dry to the touch.

3.15 Degreaser: as defined in Rule 4662 (Organic Solvent Degreasing Operations). An enclosed spray application equipment cleaning system is not a degreaser.

3.16 Dissolver: an organic solvent that is added to an adhesive, coating, or ink in order to melt or to liquefy solid particles.

3.17 Drum: a cylindrical metal shipping container larger than 12 gallons capacity but no larger than 110 gallons capacity.

3.18 End Coating: a coating applied to a container end or closure to provide protection to the metal, to provide a protective lining between the product and the container, or to provide a background for a lithographic or printing operation

3.19 End Seal Compound: a compound that is applied to can ends and functions as a gasket when the end is assembled onto the can.

3.20 EPA: United States Environmental Protection Agency.

3.21 Exempt Compound: as defined in Rule 1020 (Definitions).

3.22 Exterior Body Spray Coating: a coating sprayed on the exterior of the can body to provide a decorative or protective finish

3.23 Grams of VOC per liter of Material: the weight of VOC per volume of material and can be calculated by the following equation:

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

Where:

W_s = Weight of volatile compounds, in grams
W_w = Weight of water, in grams
W_{ec} = Weight of exempt compounds, in grams
V_m = Volume of material, in liters

3.24 Grams of VOC per liter of Material Less Water and Exempt Compounds: the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material Excluding water and exempt compounds} = \frac{W_s - W_w - W_{ec}}{V_m - V_w - V_{ec}}$$

Where:

W_s = Weight of volatile compounds, in grams
W_w = Weight of water, in grams
W_{ec} = Weight of exempt compounds, in grams
V_m = Volume of material, in liters
V_w = Volume of water, in liters
V_{ec} = Volume of exempt compounds, in liters

3.25 Hand Application Method: an application of coatings using manually held, non-automatic equipment. Examples of this method include, but are not limited to, application by paintbrush, hand roller, trowel, spatula, dauber, rag, and sponge.

3.26 High-Volume, Low-Pressure (HVLP) Spray: 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, measured dynamically at the center of the air cap and the air horns.

3.27 Interior Body Spray: a coating sprayed on the interior of the can body to provide a protective film between the product and the can.

3.28 Key System Operating Parameter: a parameter necessary to ensure compliance of the VOC emission control system with VOC emission limits. Examples of key system operating parameters include, but are not limited to, temperatures, pressures, and flow rates.

3.29 Lid: a container's cap, or closure.

3.30 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.31 Maintenance Cleaning: the cleaning of tools, forms, molds, jigs, machinery, and equipment (except coating application equipment, ink application equipment, or adhesive application equipment), and the cleaning of work areas where maintenance or manufacturing occurs.

3.32 Manufacturing Process: the process of making goods or articles by hand or by machine.

3.33 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.34 Non-Atomized Solvent Flow: a solvent in the form of a liquid stream without the introduction of any propellant.

3.35 Non-Leaking Container: a container without liquid leak.

3.36 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.37 Organic Solvent: the same as "Solvent."

3.38 Organic Solvent Cleaning: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.39 Over-varnish: a coating applied directly over a design coating to fulfill one or more of the following functions: reduce the coefficient of friction, provide gloss or protect the finish against abrasion and corrosion.

3.40 Pail: a metal container from one (1) gallon capacity to twelve (12) gallon capacity and constructed of 29 gauge or heavier material.

3.41 Permanent Total Enclosure (PTE): a permanently installed enclosure that completely surrounds a source of emissions such that all VOC emissions are captured and contained for discharge to a control device.

3.42 Propellant: a gas, including air, in a pressure container for expelling the contents when the pressure is released.

3.43 Repair Cleaning: a solvent cleaning operation or activity carried out during a repair process.

3.44 Repair Coating: a coating for post-formed convenience ends (easy-open) to provide additional protection in the scored areas by covering breaks at the score location or to provide an additional layer of protective coating on the interior or exterior of the end for corrosion resistance.

3.45 Repair Process: the process of returning a damaged object or an object not operating properly to good condition.

3.46 Research and Development: a facility or portion thereof used to further the development of useful materials, devices, systems, or methods, including, but not limited to, design, development, and improvement of prototypes and processes. Research and development does not include the manufacturing process itself.

3.47 SCAQMD: South Coast Air Quality Management District.

3.48 Sheet Base Coating: a coating applied to a flat sheet to provide protection to the metal, to provide a protective lining between the product and the container, or to provide a background for a lithographic or printing operation.

3.49 Side Seam Coating: a coating applied on the interior and/or exterior of a welded, cemented, or soldered seam to protect the exposed metal.

3.50 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.51 Solvent Flushing: the use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of equipment by flushing solvent, by a non-atomized solvent flow, through the equipment.

3.52 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.53 Stripping: the use of solvent to remove material such as cured adhesives, cured inks, cured or dried paint, cured or dried paint residue or temporary protective coating.

3.54 Surface Preparation: the removal of contaminants from a surface prior to the application of coatings, inks, or adhesives or before proceeding to the next step of a manufacturing process.

3.55 Thinner: a solvent that is used to dilute coatings to reduce viscosity, color strength, or to modify drying conditions.

3.56 Viscosity Reducer: an organic solvent that is added to an adhesive, coating or ink to make it more fluid.

3.57 Volatile Organic Compound (VOC): defined in Rule 1020 (Definitions).

3.58 Waste Solvent Material: a solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

3.59 Wipe Cleaning: a solvent cleaning activity performed by hand rubbing with an absorbent material such as a rag, paper, sponge, brush, or cotton swab containing solvent.

4.0 Exemptions

4.1 The provisions of Section 5.1 through Section 5.2 of this rule shall not apply to stationary sources that use 55 gallons or less of the aggregate of coatings (as applied) and cleaning solvent (as applied) per rolling 12-month period. The provisions of Section 5.3 through Section 5.5 and the applicable provisions of Section 6.0 shall still apply.

4.2 The lubricants applied by the spray mister to the can end seal compound application nozzle and the lubricants applied to the can body during the can body forming process shall be exempt from all the provisions of this rule.

4.3 The provisions of this rule shall not apply to stripping of cured coatings, cured adhesives, and cured inks, except the stripping of such materials from spray application equipment.

4.4 The cleaning solvent VOC limit provisions of Table 5 shall not apply to the cleaning in laboratory tests and analyses, or bench scale or research and development projects.

5.0 Requirements

5.1 On any coating line, an operator shall not use or apply any coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter of coating, as applied, excluding water and exempt compounds:

Table 1 – Two-Piece Can Coating Operations

Coating Type	Application Method	Effective until January 31, 2006 g/l	Effective on and after February 1, 2006 g/l
Interior Sheet Base Coating	Any	225	225
Interior Body Spray	Spray	510	420
Exterior Sheet Base Coating	Any	250	250
Exterior Body Spray	Spray	510	420
Interior Overvarnish	Any	225	225
Exterior Overvarnish	Any	250	250
End Coating (Interior or Exterior)	Spray or roll coat	510	420
End Seal Compound	Any	440	20
Repair Coating	Spray	750	750

Table 2 – Three Piece Can Coating Operations

Coating Type	Application Method	Effective until January 31, 2006 g/l	Effective on and after February 1, 2006 g/l
Sheet Base Coating (Interior or Exterior)	Any	225	225
Interior Body Spray	Spray	510	360
Exterior Body Spray	Spray	510	420
Overvarnish (Interior or Exterior)	Any	225	225
End Coating (Interior or Exterior)	Spray or roll coat	510	225
Side Seam Coating	Spray	660	660
End Seal Compound	Any	440	20
Repair Coating	Spray	750	750

Table 3 – Drums, Pails and Lids Coating Operations

Coating Type	Application Method	Effective until January 31, 2006 g/l	Effective on and after February 1, 2006 g/l
Sheet Base Coating (Interior or Exterior)	Any	225	225
Interior Body Spray	Spray		
New		510	420
Reconditioned		510	510
Exterior Body Spray	Spray		
New		510	340
Reconditioned		510	420
Overvarnish (Interior or Exterior)	Any	225	225
Interior End Coating	Spray or roll coat		
New		510	420
Reconditioned		510	510
Exterior End Coating	Spray or roll coat		
New		510	340
Reconditioned		510	420
Side Seam Coating	Spray	660	660
End Seal Compound	Any	440	60

Table 4 Coil Coating Operations

Coating Type	g/l
Prime and topcoat or single coat operation	200

5.2 Approved VOC Emission Control System

5.2.1 The use of coatings with VOC contents in excess of the applicable limits specified in Table 1, Table 2, Table 3, or Table 4, or alternatives to applicable provisions of Sections 5.4 or 5.6, shall be allowed, provided emissions of VOC to the atmosphere are controlled by an APCO-approved VOC emission control system that complies with the requirements of Sections 5.2.2 through 5.2.9.

5.2.2 The VOC emission control system shall have an overall capture and control efficiency of at least 90 percent by weight; and

5.2.3 The VOC emission control system shall reduce VOC emissions, at all times, to a level that is not greater than the emission level which would have been achieved through the use of materials compliant with the applicable requirements of Section 5.1 and Section 5.4.

5.2.4 The VOC emission control system shall comply with the requirements of Sections 5.2.2 and 5.2.3 during periods of emission-producing activities.

5.2.5 The VOC emission control system used to comply with the provisions of this rule shall be under District permit.

5.2.6 An operator using a VOC emission control system to comply with provisions of this rule shall monitor key system operating parameters.

5.2.7 An operator using a VOC emission control system to comply with the provisions of this rule shall implement an Operation and Maintenance Plan pursuant to Section 6.5 within 10 days of APCO approval of the plan.

5.2.8 Source Testing Requirements for VOC Emission Collection Devices and VOC Emission Control Devices

An operator using collection devices and control devices of a VOC emission control system used as a means of complying with this rule shall comply with the following source testing requirements:

5.2.8.1 Source Testing of VOC Emission Collection Devices that are Permanent Total Enclosures (PTEs)

5.2.8.1.1 An operator shall source test/certify initially a PTE to demonstrate that the PTE complies with the requirements of a PTE pursuant to Section 6.7.2.

5.2.8.1.2 A VOC emission collection device used to comply with this rule that has already been tested or certified

as compliant with the requirements of a PTE as of February 1, 2004 does not need to be retested or re-certified to comply with the requirements of Section 5.2.8.1.1, except if the collection device has undergone a change that would affect the collection device's ability to comply with the requirements of a PTE since the initial source test/certification or if a re-test/re-certification is requested by the APCO.

5.2.8.2 Source Testing of VOC Emission Collection Devices that are not PTEs (non-PTEs)

5.2.8.2.1 An operator shall source test each non-PTE at least once every twelve (12) months to determine the capture efficiency of the collection device. Source testing shall use the appropriate test method listed in Section 6.7.2.

5.2.8.2.2 A non-PTE shall be source tested under conditions representative of normal operating conditions using non-compliant coating and under conditions specified in the Permit-To-Operate, and

5.2.8.2.3 The source test for a non-PTE shall occur within 24 hours of the source test for the VOC control device to which the non-PTE is connected.

5.2.8.3 Source Testing of VOC Emission Control Devices

5.2.8.3.1 An operator shall source test each VOC emission control device at least once every twelve (12) months to determine the control efficiency of the VOC emission control device. Source testing shall use the appropriate test method listed in Section 6.7.2.

5.2.8.3.2 The source test for a VOC emission control device connected exclusively to one or more PTEs shall be conducted under conditions representative of normal operating conditions using non-compliant coating and under conditions specified in the Permit-To-Operate.

5.2.8.3.3 The source test for a VOC emission control device connected to one or more non-PTE collection devices shall be conducted under conditions representative of normal operating conditions using non-compliant

coating and under conditions specified in the Permit-To-Operate, and

5.2.8.3.4 The source test for a VOC emission control device connected to one or more non-PTE collection devices shall occur within 24 hours of the source test for the connected non-PTE collection devices.

5.2.8.4 A source test of the VOC emission control system is not required for an inactive VOC emission control system until 180 days before start-up. A period of shorter than 180 days may be allowed if it can be shown that the equipment will be started up sooner than expected.

5.2.8.5 An operator shall demonstrate that the overall capture and control efficiency of the VOC emission control system as calculated using the capture efficiency and control efficiency determined pursuant to Section 5.2.8.1 through Section 5.2.8.3 complies with the requirements of Section 5.2.2 and Section 5.2.3.

5.2.9 For a VOC emission control system that consists of a single VOC control device and a single VOC collection point and the operation includes a single coating only, one way to calculate the minimum overall capture and control efficiency of a VOC emission control system at which an equivalent or greater level of VOC emissions reduction will be achieved is by using the following equation:

$$CE = \left\langle 1 - \left[\frac{VOC_{LWc}}{VOC_{LWn,Max}} \times \frac{\left[1 - \left(\frac{VOC_{LWn,Max}}{D_{n,Max}} \right) \right]}{\left[1 - \left(\frac{VOC_{LWc}}{D_c} \right) \right]} \right] \right\rangle \times 100$$

Where:

CE	=	Overall Capture and Control Efficiency, percent
VOC_{LWc}	=	VOC Limit less water and less exempt compounds in g/l
$VOC_{LWn,Max}$	=	Maximum VOC content of noncompliant coating used in conjunction with a control device, less water and less exempt compounds in g/l
$D_{n,Max}$	=	Density of solvent, reducer, or thinner contained in the noncompliant coating, containing the maximum VOC content of the multi-component coating in g/l
D_c	=	Density of corresponding solvent, reducer, or thinner used in the compliant coating system in g/l.

5.3 Prohibition of Specification and Sale

5.3.1 A person shall not solicit or require an operator in the District to use any can and coil coating or combination of can and coil coatings subject to the provisions of this rule that does not meet the limits and requirements of Section 5.1 through Section 5.2 or that causes the operation utilizing the coating or combination of coatings to be out of compliance with this rule.

5.3.2 A person shall not sell or offer for sale for use within the District any coating that contains VOCs 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, either with compliant coatings or with an approved VOC emission control system.

5.4 Organic Solvent Cleaning Requirements

5.4.1 An operator shall not use organic solvents for cleaning operations that exceed the VOC content limits specified in Table 5, in accordance with the corresponding effective date.

Table 5 VOC Limits for Organic Solvents Used in Cleaning Operations

Type of Solvent Cleaning Operation	Effective November 15, 2003 through September 20, 2008 VOC Content Limit Grams of VOC/liter of material (lb/gal)	Effective on and after September 21, 2008 VOC Content Limit Grams of VOC/liter of material (lb/gal)
A. Product Cleaning During Manufacturing Process or Surface Preparation for Coating Application	50 (0.42)	25 (0.21)
B. Repair and Maintenance Cleaning	50 (0.42)	25 (0.21)
C. Cleaning of Coating Application Equipment		
1. All except sheet coater for three-piece can	550 (4.6)	25 (0.21)
2. Sheet coater for three-piece can	550 (4.6)	Effective until 9/30/2011 550 (4.6) Effective on and after 10/1/2011 250 (2.3)

5.4.2 Section 5.4.2.1 and Section 5.4.2.2 apply to the cleaning of coating application equipment outside the control of a VOC emission control

equipment and the coating application equipment is not used for sheet coating of three-piece cans.

5.4.2.1 Until September 20, 2008, an operator performing Table 2 Category C.1 cleaning outside of an APCO-approved VOC emission control system and using solvent with VOC content greater than 50 g/L shall meet the requirements of Sections 5.4.4 through 5.4.7 in addition to meeting the VOC content limit in Table 2 for this cleaning operation.

5.4.2.2 On and after September 21, 2008, an operator shall perform all solvent cleaning operations with cleaning material having VOC content of 25 g/L or less, unless such cleaning operations are carried out within the control of an APCO-approved emission control system that meets the requirements of Section 5.2. Sections 5.4.4 through 5.4.7 shall not apply on and after September 21, 2008.

5.4.3 Section 5.4.3.1 and Section 5.4.3.2 apply to the cleaning of coating application equipment used for sheet coating of three-piece cans and the cleaning operation is performed outside the control of a VOC emission control system.

5.4.3.1 Until September 20, 2008, an operator performing Table 5 Category C.2 cleaning outside of an APCO-approved VOC emission control system and using solvent with VOC content greater than 50 g/L shall meet the requirements of Sections 5.4.4 through 5.4.7 in addition to meeting the VOC content limit in Table 2 for this cleaning operation.

5.4.3.2 On and after September 21, 2008, an operator performing Table 5 Category C.2 cleaning outside of an APCO-approved VOC emission control system and using solvent with VOC content greater than 25 g/L shall meet the requirements of Sections 5.4.4 through 5.4.7 in addition to meeting the VOC content limit in Table 2 for this cleaning operation.

5.4.4 Cleaning activities that use solvents shall be performed by one or more of the following methods:

5.4.4.1 Wipe cleaning; or

5.4.4.2 Application of solvent from hand-held spray bottles from which solvents are dispensed without a propellant-induced force; or

5.4.4.3 Non-atomized solvent flow method in which 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

5.4.4.4 Solvent flushing method in which the cleaning solvent is discharged into a container that 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.

5.4.5 Solvent shall not be atomized into the open air unless it is vented to a VOC emission control system that complies with Section 5.2. This provision shall not apply to the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with spray bottles or containers described in Section 5.4.4.2.

5.4.6 An operator shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use. To determine solvent losses, an operator shall use the test method in Section 6.7.3.

5.4.7 An operator cleaning coating application equipment corresponding to Table 5 - Category C (Cleaning of Coating Application Equipment) that is not spray application equipment may use an alternative cleaning method other than those specified in Section 5.4.4, if the alternative cleaning method is approved by the APCO and EPA.

5.4.8 In lieu of complying with the VOC content limits in Table 5 or the requirements of Sections 5.4.4 through 5.4.7, an operator may control emissions from cleaning operations with an APCO-approved VOC emission control system that meets the requirements of Section 5.2.

5.5 Organic Solvent Storage and Disposal

An operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc, coatings, adhesives, catalysts, and thinners in closed, non-absorbent and non-leaking containers. The containers

shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

5.6 Application Equipment

5.6.1 An operator shall not apply any coating unless:

5.6.1.1 The coating is applied with properly operating coating application equipment, and

5.6.1.2 The coating application equipment is operated according to operating procedures specified by the equipment manufacturer, and

5.6.1.3 The coating application equipment complies with the requirements of Section 5.6.2.

5.6.2 An operator shall not apply any coating except by use of one or more of the following methods:

5.6.2.1 Electrostatic Application

5.6.2.2 Flow Coater

5.6.2.3 Roll Coater

5.6.2.4 Dip Coater

5.6.2.5 Hand Application Methods

5.6.2.6 HVLP Spray

5.6.2.6.1 For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of a manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.6.2.6.2 An operator shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate. Limits

are between 0.1 psig and 10.0 psig of air atomizing pressure.

5.6.2.7 Any other application method that demonstrates, to the satisfaction of the APCO and EPA, a coating transfer efficiency of at least 65 percent (≥ 65%) as measured using a test method pursuant to Section 6.7.4.

5.6.3 In lieu of complying with Section 5.6.2, an operator may control emissions from application equipment with an APCO-approved VOC emission control system that controls the emissions from the source operation pursuant to the requirements of Section 5.2.

6.0 Administrative Requirements

6.1 An operator who performs a can coating or coil coating operation subject to any part of Section 5.0 or is exempt by Section 4.1 of this rule or performs solvent cleaning operations associated with Section 5.4 shall comply with the recordkeeping requirements of Section 6.2 through Section 6.5:

6.2 Coatings Records

6.2.1 Coatings Materials List – An operator shall maintain and have available on site, a current list of coatings in use which provides all of the coating data necessary to evaluate compliance including the following information as applicable:

6.2.1.1 Specific manufacturer's name of coatings, catalysts and thinners used.

6.2.1.2 Mix ratio of components used.

6.2.1.3 VOC content of each coating, as applied in g/l or lb/gal.

6.2.1.4 VOC content of each catalyst and thinner used g/l or lb/gal.

6.2.2 Coatings Usage Records – An operator shall maintain records that include the following information:

6.2.2.1 Specific coating used and mix ratio of components added to the coating material prior to application.

6.2.2.2 Volume of coatings applied (gallons).

6.2.2.3 Specific solvents, catalysts and thinners used.

6.2.2.4 Volume of each solvent, catalyst and thinner (gallons).

6.2.3 An operator shall maintain coatings usage records on a daily basis, except operators that keep records pursuant to Section 6.2.4.

6.2.4 An operator claiming exemption pursuant to Section 4.1 may maintain coatings usage records on an extended basis not to exceed monthly provided the records substantiate claim of exemption for the entire extended period.

6.2.5 An operator shall retain coatings materials lists and coatings usage records for a minimum of five (5) years, make the records available on site during normal business hours to the APCO, ARB, or EPA, and submit the records to the APCO, ARB, or EPA upon request.

6.3 Cleaning Solvents Records

6.3.1 Cleaning Solvents Materials List – An operator shall maintain and have available on site, a current list of cleaning solvents in use that provides all of the data necessary to evaluate compliance including the following information, as applicable:

6.3.1.1 The name of the cleaning solvent and its manufacturer's name.

6.3.1.2 The VOC content of the solvent expressed in g/l or lb/gallon, as applied.

6.3.2 Cleaning Solvent Usage List - An operator shall maintain records that include the following information:

6.3.2.1 Name of cleaning solvent used.

6.3.2.2 When the solvent is a mixture of different materials that are blended by the operator, the mix ratio of the batch shall be recorded and the VOC content of the batch shall be calculated and recorded in order to determine compliance with the specified limits of VOC content. Records from before November 15, 2003 must still be retained on-site for five (5) years from date of record.

6.3.2.3 Volume of each cleaning solvent used (gallons).

6.3.2.4 The type of cleaning activity for each solvent that is being used in accordance with the applicable cleaning category specified in Section 5.4, Table 5 of this rule.

6.3.3 An operator shall maintain cleaning solvent usage records on a daily basis, except an operator who keeps records pursuant to Section 6.3.4.

6.3.4 An operator claiming exemption pursuant to Section 4.1 may maintain cleaning solvent usage records on an extended basis not to exceed monthly, provided the records substantiate claim of exemption for the entire extended period.

6.3.5 An operator shall retain cleaning solvent materials list and cleaning solvent usage records on site for a minimum of five (5) years, make the records available on site during normal business hours to the APCO, ARB, or EPA, and submit the records to the APCO, ARB, or EPA upon request.

6.4 VOC Emission Control Systems Records

6.4.1 An operator using a VOC emission control system pursuant to Section 5.2 as a means of complying with this rule shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the VOC emission control system during periods of emission-producing activities.

6.4.2 Excess Reporting: Any record showing violation of Section 5.2 shall be reported by sending a copy of such record to the APCO within 96 hours following the occurrence. Such report will include an explanation of the cause of the violation and the corrective action taken.

6.4.3 An operator shall retain VOC emission control system records on site for a minimum of five (5) years, make the records available on site during normal business hours to the APCO, ARB, or EPA and submit the records to the APCO, ARB, or EPA upon request.

6.5 VOC Emission Control System Operation and Maintenance Plan

6.5.1 A VOC emission control system subject to the provisions of Section 5.2 shall submit to the APCO for approval an Operation and Maintenance (O/M) Plan.

6.5.2 No provision in the O/M Plan shall conflict with or take precedence over any provision of this rule.

6.5.3 The O/M Plan shall specify actions to be taken to satisfy the following requirements and the requirements of Section 5.2. The actions to be identified in the O/M Plan include, but are not limited to:

6.5.3.1 Identification of key system operating parameter(s)

6.5.3.2 Minimum values or range of acceptable values for key system operating parameter(s) that source testing has shown result in VOC emissions within rule limits.

6.5.3.3 Procedures for preventive and corrective maintenance performed for the purpose of maintaining the VOC emission control system in proper operating condition.

6.5.3.4 Procedures for collecting and recording required data and other information in a form approved by the APCO including, but not limited to, data collected through the O/M Plan and the monitoring of key system operating parameters.

6.5.3.5 Burner maintenance schedule

6.5.3.6 Catalyst maintenance and maintenance schedule, where applicable

6.5.3.7 Duct inspection schedule

6.5.3.8 Procedures for revising the O/M Plan.

6.5.3.9 All other information necessary to verify compliance with applicable provisions of this rule.

6.5.3.10 The O/M Plan shall specify which records will be used to document the operation and maintenance procedures.

6.5.4 The O/M Plan shall not be implemented prior to approval in writing by the APCO.

6.5.5 The O/M Plan shall be updated prior to any planned change in operation of the VOC emission control system.

6.5.5.1 An operator may request a change to the O/M Plan at any time.

6.5.5.2 If the O/M Plan undergoes significant changes to one or more O/M Plan elements, an operator must notify the District no later than seven (7) days after the change.

6.5.5.3 If the O/M Plan undergoes significant changes to one or more O/M Plan elements, an operator must submit an updated O/M Plan to the APCO for approval no later than fourteen (14) days after the change.

6.5.6 An O/M Plan is not required for an inactive VOC emission control system until 180 days before start-up. A period of shorter than 180 days may be allowed if it can be shown that the equipment will be started up sooner than expected.

6.5.7 An operator receiving an Authority to Construct for a new or modified VOC emission control system shall submit a new or modified O/M Plan to the APCO prior to implementation of an Authority to Construct for the VOC emission control system.

6.5.8 The APCO shall provide written notice to the facility of the approval or incompleteness of a new or revised O/M Plan within 30 days of receiving such plan.

6.6 Compliance Statement Requirements

6.6.1 The manufacturer of any coating subject to this rule shall indicate on the coating container, or on a separate product data sheet or material safety data sheet, the name of the coating, manufacturer's name, the VOC content, specific mixing instructions, and density, as supplied. The VOC content shall be expressed in units of g/l or lb/gallon.

6.6.2 The manufacturer of any solvent subject to this rule shall indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, the VOC content, and density. The VOC content shall be expressed in units of g/l or lb/gallon.

6.7 Test Methods

6.7.1 Determination of VOC Content

6.7.1.1 The VOC content of solvents and organic materials shall be determined by using EPA Method 24 or 24A, SCAQMD Method 304 (Determination of Volatile Organic Compounds in Various Materials), or by using the manufacturer's product formulation data and the formula for "Grams of VOC per liter of Material" in Section 3.0.

6.7.1.2 The content of exempt halogenated VOCs shall be determined by using the ARB Method 432 or SCAQMD Method 303 (Determination of Exempt Compounds).

6.7.2 Determination of Overall Capture and Control Efficiency of VOC Emission Control Devices

6.7.2.1 The capture efficiency of a VOC emission control system's collection device(s) shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable, or any other method approved by EPA, ARB, and the APCO.

6.7.2.2 The control efficiency of a VOC emission control system's control device(s) shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.7.2.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{Capture\ and\ Control} = [\ CE_{Capture} \times CE_{Control}\ ] / 100$$

Where:

$CE_{Capture\ and\ Control}$ = Overall Capture and Control Efficiency, in percent

$CE_{Capture}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.7.2.1

$CE_{Control}$ = Control Efficiency of the control device, in percent, as determined in Section 6.7.2.2.

6.7.3 Determination of Solvent Losses from Spray Gun Cleaning Systems

The passive and active solvent losses from spray gun cleaning systems shall be determined by using SCAQMD "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems" dated October 3, 1989. The test solvent for this determination shall be lacquer thinner with a minimum vapor pressure of 105 mm Hg at 20°C. The minimum temperature shall be 15°C.

6.7.4 Transfer Efficiency

Transfer efficiency shall be determined by one of the following:

6.7.4.1 SCAQMD Method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989, or

6.7.4.2 Can Manufacturers' Institute (CMI) "Test Plan for Measuring Transfer Efficiency of Coating Application on 3-Piece Metal Cans" 1991, or

6.7.4.3 Any other test method for transfer efficiency for which written approval of the EPA, ARB, and the APCO has been obtained.

6.8 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.

6.9 Version of Test Methods

All ASTM test methods referenced in Section 6.0 are the most recently EPA-approved version that appears in the CFR as Materials Approved for Incorporation by Reference.

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7/28/11

RULE 4605 AEROSPACE ASSEMBLY AND COMPONENT COATING OPERATIONS (Adopted December 19, 1991; Amended May 21, 1992; Amended December 17, 1992; Amended March 31, 1993; Amended February 17, 1994; Amended December 19, 1996; Amended December 20, 2001; Amended September 20, 2007; Amended June 16, 2011)

1.0 Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from aerospace coatings and adhesives, from the organic solvent cleaning, and the storage and disposal of solvents and waste solvent materials associated with the use of aerospace coatings and adhesives and to provide the administrative requirements for recording and measuring the emissions.

2.0 Applicability

This rule shall apply to the manufacturing, assembling, coating, masking, bonding, paint stripping, surface cleaning, service, and maintenance of aerospace components, the cleanup of equipment, and the storage and disposal of solvents and waste solvent materials associated with these operations.

3.0 Definitions

3.1 Ablative Coating: a coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.

3.2 Adhesion Promoter: a coating applied to a substrate in a monomolecular thickness to promote wetting and form a chemical bond with the subsequently applied material.

3.3 Adhesive: a substance that is used to bond one surface to another.

3.4 Adhesive Bonding Primer: a coating applied in a very thin film to aerospace adhesive bond detail components for corrosion inhibition and adhesion.

3.5 Aerosol Coating: a mixture of pigments, resins, and liquid and gaseous solvents and propellants packaged in a disposable container for hand-held application.

3.6 Aerospace Component: any raw material, partial or completed fabricated part, assembly of parts, or completed unit of any aircraft, helicopter, missile, or space vehicle, including mockups and prototypes.

3.7 Aerospace Material: 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.

3.8 Antichafe Coating: a coating applied to areas of moving aerospace components which may rub during normal operation.

3.9 Anti-wicking Wire Coating: the outer coating of a wire which prevents fluid wicking into the insulation of the wire.

3.10 APCO: as defined in Rule 1020 (Definitions).

3.11 ARB: California Air Resources Board.

3.12 ASTM: American Society for Testing and Materials.

3.13 Barrier Coating: a coating applied in a thin film to fasteners to inhibit dissimilar metal corrosion and to prevent galling.

3.14 Bearing Coating: a coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect the base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

3.15 Brush Coating: manual application of coatings using brushes and rollers.

3.16 Caulking and Smoothing Compounds: a semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

3.17 Chemical Agent-resistant Coating (CARC): an exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.

3.18 Chemical Milling: the removal of metal by chemical action of acids or alkalis.

3.19 Clear Topcoat: a clear or semi-transparent coating applied over a primer for purposes such as appearance, identification, or protection.

3.20 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.21 Commercial Exterior Aerodynamic Structure Primer: a primer utilized for the purpose of extended corrosion protection, which is only used on the exterior of passenger and cargo doors, supporting door structures, aerodynamic components, and structures of commercial aircraft which protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizer, vertical fins, wing-to-body fairings, antennae, landing gear and landing gear doors.

3.22 Conformal Coating: a coating applied to electrical conductors and circuit boards to protect them against electrical discharge damage and/or corrosion.

3.23 Composite Partial Pressure: the sum of the partial pressures of the VOC compounds in a solvent. The VOC composite partial pressure is calculated as follows:

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

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 the "e"th exempt compound, in grams per gram-mole
PP_c = VOC composite partial pressure at 20°C (68°F), in mm Hg
VP_i = Vapor pressure of the "i"th VOC compound at 20°C (68°F), in mm Hg

3.24 Decorative Laminate Primer: an adhesive bonding primer which is applied to a substrate to enhance adhesion between the decorative laminate and the subsequently applied substrate, and is cured at a maximum temperature of 250°F.

3.25 Dip Coating: the process in which a substrate is immersed in a solution (or dispersion) containing the coating and then withdrawn.

3.26 Dry Lubricative Coating: a coating 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.

3.27 Electric-effect Coating: an electrically-conductive coating.

3.28 Electrodeposition: a dip coating application method where the paint solids are given an electrical charge which is then attracted to a substrate.

3.29 Electromagnetic Interference (EMI) Coating: a coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy or reduce electromagnetic interference.

3.30 Electronic Wire Coating: the outer electrical insulation coating applied to tape insulation of a wire specifically formulated to smooth and fill edges.

3.31 Electrostatic Application: a sufficient charging or atomized paint droplets to cause deposition principally by electrostatic attraction. This application shall be operated at a minimum 60 KV power.

3.32 EPA: United States Environmental Protection Agency.

3.33 Epoxy Based Fuel Tank Coating: a coating which contains epoxy resin that is applied to integral fuel tank components of aircraft to protect the fuel tank from corrosion and the by-products of bacterial growth.

3.34 Fastener Sealant: a sealant applied to a device used to join two or more parts together.

3.35 Fire Resistant Coating - Civilian (interior): a cabin interior coating that passes Federal Aviation Administration standards using the Ohio State University Heat Release, Fire and Burn Tests.

3.36 Flight Test Coating: 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.

3.37 Flow Coating: a coating application system with no air supplied to the nozzle and where paint flows over the part and the excess coating drains back into a collection system.

3.38 Fuel Tank Adhesive: an adhesive used to bond components continuously exposed to fuel and which must be compatible with and used with fuel tank coatings.

3.39 Fuel Tank Coating: a coating applied to the interior of a fuel tank or areas of an aircraft that are continuously wetted by fuel to protect it from corrosion and/or bacterial growth.

3.40 Grams of VOC per Liter of Coating, Less Water and Exempt Compounds: the weight of VOC content per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per liter of coating, less water and exempt compounds} = \frac{Ws - Ww - Wec}{Vm - Vw - Vec}$$

Where,

Ws = weight of volatile compounds (grams)
Ww = weight of water (grams)
Wec = weight of exempt compounds (grams)
Vm = volume of material (liters)
Vw = volume of water (liters)
Vec = volume of exempt compounds (liters)

3.41 Grams of VOC per Liter of Material: the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{Ws - Ww - Wec}{Vm}$$

Where,

Ws = weight of volatile compounds (grams)
Ww = weight of water (grams)
Wec = weight of exempt compounds (grams)
Vm = volume of material (liters)

3.42 Hand Application Methods: the application of coatings, sealants, or adhesives, by non-mechanical hand-held equipment including but not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags and sponges.

3.43 High Temperature Coating: a coating that is certified to withstand temperatures of more than 350°F.

3.44 High-Volume, Low-Pressure (HVLP) Spray Equipment: equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure measured dynamically at the center of the air cap and at the air horns, measured dynamically at the center of the air cap and the air horns.

3.45 Impact Resistant Coating: a flexible coating that protects aerospace components, such as aircraft landing gear, and landing gear compartments, and other surfaces subject to abrasive impacts from runway debris.

3.46 Intermediate Release Coating: a thin coating applied beneath topcoats to assist in removing the topcoat in depainting operations and generally to allow the use of less hazardous depainting methods.

3.47 Lacquer: a clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resoluble in their original solvent.

3.48 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.49 Long Term Adhesive Bonding Primer (Metal to Structural Core Bonding): 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 350°F ± 10°F.

3.50 Maskant for Chemical Milling: a coating applied directly to an aerospace component to protect surface areas when chemical milling such component.

3.51 Metalizing Epoxy Coating: a coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

3.52 Mold Release: a coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.

3.53 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.54 Non-Leaking Container: a container without liquid leak.

3.55 Non-Structural Adhesive: an adhesive that bonds non-load carrying aircraft component in non-critical applications.

3.56 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.57 Optical Anti-Reflective Coating: 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.

3.58 Organic Solvent: the same as "Solvent."

3.59 Organic Solvent Cleaning: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.60 Part Marking Coating: coatings or inks used to make identifying markings on materials, components, and/or assemblies. These markings may be either permanent or temporary.

3.61 Phosphate Ester Resistant Wire Ink Coating: a coating that is used for surface identification or mark on aerospace wire or cable and which inhibits the corrosion caused by contact with phosphate ester type hydraulic fluids.

3.62 Pretreatment Coating: a coating which contains no more than 12 percent solids by weight, and at least one-half (0.5) percent acid, by weight, to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.

3.63 Primer: a coating applied directly to an aerospace component for purposes of corrosion prevention, protection from the environment, functional fluid resistance and adhesion of subsequent coatings, adhesives, or sealants.

3.64 Radiation-Effect Coating: a coating which helps in the prevention of radar detection.

3.65 Rain Erosion Resistant Coating: a coating that protects leading edges, flaps, stabilizers, and engine inlet lips against erosion caused by rain during flight.

3.66 Remanufactured Aircraft Part: an aerospace component that is built as a spare part or replacement part subject to an existing commercial aircraft specification.

3.67 Rocket Motor Nozzle Coating: a catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.

3.68 Roll Coating: application of coatings from a paint trough to a flat surface by mechanical series of rollers.

3.69 Scale Inhibitor: a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of tenacious scale.

3.70 SCAQMD: South Coast Air Quality Management District.

3.71 Screen Print Ink: an ink used in screen printing processes during fabrication of decorative laminates and decals.

3.72 Sealant: a viscous semisolid material that fills voids in order to seal out water, fuel, and other liquids and solids, and in some cases air movement, and is applied with a syringe, caulking gun, or spatula.

3.73 Silicone Insulation Material: an insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not "sacrificial".

3.74 Short Term Adhesive Bonding Primer: 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.

3.75 Solid Film Lubricant: a very thin coating consisting of a binder system containing as its chief pigment material one (1) or more of the following: molybdenum disulfide, graphite, polytetrafluoroethylene (PTFE) or other solids that act as a dry lubricant between closely-fitting surfaces.

3.76 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.77 Sonic and Acoustic Applications: the use of aerospace materials on aerospace components that are subject to mechanical vibration and/or sound wave cavitation.

3.78 Space Vehicle Coating: a coating applied to vehicles designed to travel and operate beyond earth's atmosphere.

3.79 Specialized Function Coating: a coating that fulfills specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other Specialty Coating categories.

3.80 Stripper: a volatile liquid applied to remove a maskant for chemical processing, cured or dried paint, cured or dried paint residue or temporary protective coating.

3.81 Structural Adhesive - Autoclavable: an adhesive used to bond load-carrying aircraft components and is cured by heat and pressure in an autoclave.

3.82 Structural Adhesive - Nonautoclavable: an adhesive cured under ambient conditions and is used to bond load-carrying aircraft components or other critical functions, such as nonstructural bonding near engines.

3.83 Surface Cleaning: any method of cleaning outside of a degreaser, including, but not limited to, wipe cleaning and equipment flushing.

3.84 Temporary Protective Coating: a coating applied to an aerospace component to protect it from mechanical and environmental damage during manufacturing or shipping.

3.85 Thermal Control Coating: a coating formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.

3.86 Topcoat: a coating applied over a primer for purposes such as appearance, identification, or protection.

3.87 Transfer Efficiency: the ratio of the weight or volume of coating solids adhering to the part being coated to the weight or volume of coating solids used in the application process, expressed as a percentage.

3.88 Unicoat: a coating that is applied directly to an aerospace component for purposes of corrosion protection, environmental protection and functional fluid resistance that is not subsequently topcoated. A unicoat is used in lieu of the application of a primer and a topcoat.

3.89 Volatile Organic Compounds (VOCs): as defined in Rule 1020 (Definitions).

3.90 Waste Solvent Material: any solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

3.91 Wet Fastener Installation Coating: a primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

3.92 Wing Coating: a coating that is corrosion resistant and is resilient enough to withstand the flexing of wings.

3.93 Wire Prebonding Etchant: a non-additive surface treatment process to provide bondability of aerospace wire coatings to the underlying insulation layer.

4.0 Exemptions

4.1 Jet engine or rocket engine flushing operations using any solvent other than trichloroethylene are exempt from this rule.

4.2 Except for the recordkeeping provisions of Sections 6.1.1 and 6.1.4, the requirements of Section 5.0 shall not apply to aerospace assembly and component coating operations using not more than four (4) gallons of products containing VOCs per day. Solvent-containing materials used in operations subject to Rule 4662 (Organic Solvent Degreasing Operations), shall not be included in this determination.

4.3 Except for the provisions of Section 6.0, Section 5.0 shall not apply to laboratories which apply coatings, solvents, and adhesives to test specimens for purpose of research, development, quality control, and testing for production-related operations. Any person claiming this exemption shall provide operational records, data and calculations, as determined by the APCO to be necessary, to substantiate this claim.

4.4 The provisions of Section 5.1 of this rule shall not apply to:

4.4.1 Coatings or aerosols with separate formulations that are used in volumes of less than one (1) gallon on any day or 20 gallons in any calendar year at an aerospace assembly and component coating stationary source, or

4.4.2 Adhesives with separate formulations that are used in volumes of less than one half (0.5) gallon on any day or ten (10) gallons in any calendar year at an aerospace assembly and component coating stationary source.

Any operator seeking to claim the exemption in Section 4.4 shall notify the APCO in writing that substitute compliant coatings are not available.

4.5 The provisions of Section 5.5 shall not apply to the application of coatings that:

4.5.1 Contain less than 20 grams of VOC per liter of coating less water and exempt compounds, or

4.5.2 Are dispensed from hand-held aerosol cans.

5.0 Requirements

5.1 Aerospace Coatings and Adhesives: After the applicable effective date indicated in Table 1, an operator shall not apply to any aerospace component any coating, aerosol or adhesive with a VOC content, less water and exempt compounds, as applied, in excess of the limits in Table 1.

Table 1 – VOC Content Limits (Grams of VOC Per Liter of Coating [g/l], Less Water and Exempt Compounds)		
Product (VOC Containing Material)	Before January 1, 2013	On and After January 1, 2013
1. Ablative	n/a	600[1]
2. Adhesion Promoter	850	850
3. Adhesives		
a. Non-Structural	250	250
b. Structural		
i. Autoclavable	50	50
ii. Nonautoclavable	850	850
4. Adhesive Bonding Primers		
a. New Commercial Aircraft	250	250
b. All Military Aircraft	805	805
c. Remanufactured Commercial Aircraft Parts	805	805
d. Sonic and Acoustic Applications	805	805
e. Long Term	250	250
f. Short Term	250	250
5. Antichafe Coatings	600	600
6. Barrier Topcoat	420	420
7. Bearing Coating	n/a	620[1]
8. Caulking and Smoothing Compounds	n/a	850[1]
9. Chemical Agent Resistant Coating	n/a	550[1]
10. Clear Topcoat	520	520
11. Conformal Coating	750	750
12. Dry Lubricative Materials		
a. Fastener Manufacturing	120	120
b. Nonfastener Manufacturing	675	675
13. Electric/Radiation Effect Coatings	800	800
14. Electromagnetic Interference Coating	n/a	800[1]
15. Fastener Sealants	675	600[2]
16. Fire Resistant Coatings		
a. Civilian (Interior)	650	650

Table 1 – VOC Content Limits (Grams of VOC Per Liter of Coating [g/l], Less Water and Exempt Compounds) continued		
Product (VOC Containing Material)	Before January 1, 2013	On and After January 1, 2013
17. Flight Test Coatings Used on		
a. Missiles or Single-Use Target Craft	420	420
b. All others	600	600
18. Fuel Tank Coatings		
a. General	420	420
b. Epoxy	420	420
19. Fuel Tank Adhesives	620	620
20. High Temperature Coating	850	850
21. Impact Resistant Coating	420	420
22. Intermediate Release Coating	n/a	750[1]
23. Lacquer	n/a	830[1]
24. Maskants - Chemical Milling	250	250
25. Metalized Epoxy Coating	n/a	740[1]
26. Mold Release	n/a	780[1]
27. Optical Anti-Reflective Coating	700	700
28. Part Marking Coating	n/a	850[1]
29. Pretreatment Coatings	780	780
30. Primers		
a. General	350	350
b. Commercial Exterior Aerodynamic Structure	350	350
31. Rain Erosion Resistant Coating	800	800
32. Rocket Motor Nozzle Coating	n/a	660[1]
33. Scale Inhibitor	880	880
34. Screen Prink Ink	840	840
35. Sealant (Extrudable/Rollable/Brushable)	600	280[3]
36. Silicone Insulation Material	n/a	850[1]
37. Solid Film Lubricants		
a. Fastener Manufacturing	250	250
b. Fastener Installation	880	880
c. Nonfastener Manufacturing	880	880
38. Space Vehicle Coatings		
a. Electrostatic Discharge Protection	800	800

Table 1 – VOC Content Limits (Grams of VOC Per Liter of Coating [g/l], Less Water and Exempt Compounds) continued		
Product (VOC Containing Material)	Before January 1, 2013	On and After January 1, 2013
b. Other Space Vehicle Coatings	1000	1000
c. Adhesives	800	800
39. Specialized Function Coating	n/a	890[1]
40. Temporary Protective Coatings	250	250
41. Thermal Control Coating	n/a	800[1]
42. Topcoats	420	420
43. Epoxy Polyamide	n/a	660[1]
44. Unicoats (Self Priming Topcoats)	420	420
45. Wet Fastener Installation Coating	n/a	675[1]
46. Wing Coating	750	750
47. Wire Coatings		
a. Electronic	420	420
b. Anti-Wicking	420	420
c. Pre-Bonding Etching	420	420
d. Phosphate Ester Resistant Ink	925	925

[1] Coatings that have been designated as "classified" by the Department of Defense or coatings that are used on space vehicles are exempt from these coating limits.
[2] Coatings that have been designated as "classified" by the Department of Defense or coatings that are used on space vehicles are exempt from the 600 g/l limit, but must comply with a 675 g/l limit.
[3] Coatings that have been designated as "classified" by the Department of Defense or coatings that are used on space vehicles are exempt from the 280 g/l limit, but must comply with a 600 g/l limit.

5.2 Evaporative Loss Minimization

5.2.1 Surface Cleaning: No operator shall use a solvent for surface cleaning, clean-up, or jet engine or rocket engine gas path cleaning or flushing, not exempt under Section 4.0 of this rule, excluding stripping coatings or cleaning coating application equipment, unless:

5.2.1.1 the solvent contains less than 200 grams of VOC per liter (1.67 lb/gal) of material, as applied; or

5.2.1.2 the VOC composite vapor pressure of the solvent is less than or equal to 45 mm Hg (0.87 psia) at a temperature of 68°F.

5.2.2 Coating Application Equipment Cleaning

An operator shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use.

5.2.3 In lieu of compliance with Sections 5.2.1 or 5.2.2, an operator may control VOC emissions from surface cleaning operations or from cleaning coating application equipment with a VOC emission control system that meets the requirements of Section 5.6.

5.3 Coating Strippers

5.3.1 No operator shall use or specify for use within the District a coating stripper unless it contains less than 300 grams of VOC per liter (2.5 lb/gal), as applied, or unless it has a VOC composite vapor pressure of 9.5 mm Hg (0.18 psia) or less at 68°F.

5.3.2 In lieu of compliance with Section 5.3.1, an operator may control emissions from coating stripper operations with a VOC emission control system that meets the requirements of Section 5.6.

5.4 Storage and Disposal of VOC Containing Materials: An operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc., coatings, adhesives, catalysts, and thinners in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

5.5 Application Equipment Requirements: No operator shall apply coatings subject to the provisions of this rule unless one (1) of the following methods is used:

5.5.1 Electrostatic application;

5.5.2 Electrodeposition;

5.5.3 High-Volume, Low- Pressure (HVLP) spray,

5.5.3.1 High-Volume, Low-Pressure (HVLP) spray equipment shall be operated in accordance with the manufacturer's recommendations.

5.5.3.2 For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.5.3.3 A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Section 3.0.

5.5.4 Flow coating;

5.5.5 Roll coating;

5.5.6 Dip coating;

5.5.7 Brush coating.

5.5.8 In lieu of compliance with Sections 5.5.1 through 5.5.7, an operator may control VOC emissions from application equipment with a VOC emission control system that meets the requirements of Section 5.6.

5.6 VOC Emission Control System

As an alternative to meeting the requirements of Sections 5.1, 5.2, 5.3, or 5.5, an operator may install a VOC emission control system provided that the VOC emission control system meets all of the following requirements:

5.6.1 The VOC emission control system shall be approved by the APCO.

5.6.2 The VOC emission control system shall comply with the requirements of Sections 5.6.3 through 5.6.5 during periods of emission-producing activities.

5.6.3 The VOC control system's VOC control device shall have a control efficiency of at least 95 percent, by weight.

5.6.4 The VOC emission control system's VOC collection device(s) shall have a capture efficiency of at least 90 percent by weight.

5.6.5 In no case shall compliance through the use of a VOC emission control system result in VOC emissions in excess of the VOC emissions which would result from compliance with applicable provisions of Sections 5.1, 5.2, 5.3, or 5.5.

5.6.6 The minimum required overall capture and control efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by using the following equation:

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

Where:

CE	=	Minimum Required Overall Capture and Control Efficiency, percent
VOC_{LWc}	=	VOC Limit, less water and exempt compounds
$VOC_{LWn,Max}$	=	Maximum VOC content of noncompliant 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 noncompliant coating, containing the maximum VOC content of the multi-component coating
D_c	=	Density of corresponding solvent, reducer, or thinner used in the compliant coating system.

5.7 Prohibition of Solicitation: No person shall solicit, specify, or require an operator to use any coating, solvent, spray equipment, or VOC emission control system that does not meet the limits or requirements of this rule.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 An operator subject to the requirements of this rule shall have coating manufacturer's specifications, either listed on the coating container, product data sheet, or on Material Safety Data Sheets (MSDS), available for review and shall maintain daily records which show the following information as applicable:

6.1.1.1 manufacturer name and type for each coating, solvent, thinner, reducer or stripper used,

6.1.1.2 mix ratio, by volume, of components added to the original material prior to application,

6.1.1.3 grams of VOC per liter of each coating, solvent, thinner, reducer or stripper, less water and exempt compounds, as applied,

6.1.1.4 grams of VOC per liter of each solvent, thinner, reducer, or stripper,

6.1.1.5 volume and method of application of each coating, solvent, thinner, reducer or stripper applied, and

6.1.1.6 vapor pressure of solvents used.

6.1.2 An operator shall maintain records to support that the following coatings have been specified for their intended application.

6.1.2.1 adhesion promoter.
6.1.2.2 antichafe coating.
6.1.2.3 electric/radiation effect.
6.1.2.4 fuel tank adhesive.
6.1.2.5 high temperature coating.
6.1.2.6 impact resistant coating.
6.1.2.7 optical anti-reflective coating.
6.1.2.8 rain erosion resistant wing coating.

6.1.3 An operator using a VOC emission control system pursuant to Section 5.6 as a means of complying with this rule shall maintain daily records of key system operating parameters and maintenance procedures which will demonstrate continuous operation and compliance of the VOC emission control system during periods of emission-producing activities. Key system operating parameters are those necessary to ensure compliance with VOC limits. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

6.1.4 An operator shall retain records for a minimum of five (5) years, make the records available on site during normal business hours to the APCO, ARB, or EPA, and submit the records to the APCO, ARB, or EPA upon request.

6.2 Test Methods

6.2.1 Coating VOC content and solvent VOC content shall be determined using EPA Method 24 or its constituent methods. The VOC content of coatings

containing exempt halogenated VOCs shall be determined by using the ARB Method 432 or SCAQMD Method 303 (Determination of Exempt Compounds).

6.2.2 The solid content of pretreatment coatings shall be determined using EPA Method 24. The acid content of pretreatment coatings shall be determined using ASTM Method D1613 06 (Standard Test for Acidity of Volatile Solvents and Chemical Intermediates used in Paint, Varnish, Lacquer and Related Products).

6.2.3 The test method for determining the fire resistance of an interior coating shall be Federal Aviation Administration-required Ohio State University Heat Release, Fire and Burn Tests.

6.2.4 The VOC composite vapor pressure of a blended solvent shall be determined by quantifying the amount of each organic compound in the blend using gas chromatographic analysis SCAQMD Test Method 308 (Quantitation of Compounds by Gas Chromatography) and by calculating the VOC composite vapor pressure of the solvent by summing the product of the vapor pressure of each pure component and its molar fraction. For the purpose of this calculation, the blend shall be assumed to be an ideal solution where Raoult's Law applies. The vapor pressure of each pure component shall be obtained from published reference manuals or handbooks.

6.2.5 The VOC emissions from enclosed systems used to clean coating application equipment shall be determined by the manufacturer using the SCAQMD General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems.

6.2.6 The control efficiency of a VOC emission control system's control device(s) shall be determined using EPA Methods 2, 2A, 2C, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring the total gaseous organic concentrations at the inlet and outlet of the control device. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.2.7 The capture efficiency of a VOC emission control system's collection device(s) shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable, or any other method approved by EPA, ARB, and the APCO.

6.2.8 When more than one test method or set of test methods are specified for any emissions testing, a violation of any test established in Section 6.2 shall constitute a violation of the rule.

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RULE 4606 WOOD PRODUCTS AND FLAT WOOD PANELING PRODUCTS COATING OPERATIONS (Adopted December 19, 1991; Amended May 21, 1992; Amended December 17, 1992; Amended June 20, 1996; Amended December 19, 1996; Amended December 17, 1998; Amended December 20, 2001; Amended September 20, 2007; Amended October 16, 2008)

1.0 Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from wood products coating operations, and from the organic solvent cleaning, and the storage and disposal of solvents and waste solvent materials associated with such coating operations. The rule also provides the administrative requirements for recording and measuring emissions.

2.0 Applicability

The provisions of this rule shall apply to the application of coatings to wood products, including furniture, cabinets, flat wood paneling, and custom replica furniture. The rule shall also apply to the organic solvent cleaning, and the storage and disposal of all solvents and waste solvent materials associated with such coating operations.

3.0 Definitions

3.1 Aerosol Product: a hand-held, non-refillable container that expels a pressurized solvent-containing product by means of a propellant-induced force.

3.2 Aerosol-Spray Coating: a coating which is sold in a hand-held, pressurized, non-refillable container of 16 ounces or less and which is expelled from the container in a finely divided spray when a valve on the container is depressed.

3.3 APCO: as defined in Rule 1020 (Definitions).

3.4 Application Equipment: a device, including, but not limited to, a spray gun, brush, and roller, used to apply adhesives, coatings, or inks.

3.5 ARB: California Air Resources Board.

3.6 Binder: non-volatile polymeric organic material (resin) in coatings which binds the pigment and additive particles together to form a surface film in coating applications.

3.7 Class II Hardboard Panel Finishes: finishes which meet the specifications of voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.

3.8 CFR: Code of Federal Regulations.

3.9 Clear Topcoat: the final coating which contains binders, but not opaque pigments, and is specifically formulated to form a transparent or translucent solid protective film.

3.10 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.11 Crackle Lacquer: a clear or pigmented topcoat intended to dry to produce a cracked or crazed appearance.

3.12 Cured Adhesive, Cured Coating, or Cured Ink: an adhesive, coating, or ink that is dry to the touch.

3.13 Custom Replica Furniture: furniture individually produced for a specific client using methods of construction including materials, joinery, and finishes authentic to the period and in keeping with the style of furniture.

3.14 Degreaser: a tank, tray, drum or other container in which objects to be cleaned are exposed to a solvent or solvent vapor in order to remove contaminants. The objects to be cleaned include, but are not limited to, parts, products, tools, machinery, and equipment. An enclosed spray application equipment cleaning system is not a degreaser.

3.15 Detailing or Touch-up Gun: small air spray equipment that is operated at no greater than five (5) cfm air flow and no greater than 50 psig of air atomizing pressure and is used to repair or touch-up portions of wood products. Detailing and touch-up guns include air brushes.

3.16 Dip Coat: to dip an object into a vat of coating material and drain off any excess coating.

3.17 Dissolver: an organic solvent that is added to an adhesive, coating, or ink in order to melt or to liquefy solid particles.

3.18 Electrostatic Application: method of spray application of coatings where an electrostatic potential is created between the part to be coated and the paint particles.

3.19 EPA: United States Environmental Protection Agency.

3.20 Exempt Compound: an organic compound not classified as a volatile organic compound (VOC), as listed in the definition of volatile organic compound in Rule 1020 (Definitions).

3.21 Exterior Wood Siding: 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.

3.22 Faux Finish: a finish intended to simulate a surface other than wood, including, but not limited to, stone, sand, slate, marble, metal, metal flake, or leather.

3.23 Filler: a material whose primary function is to fill voids.

3.24 Flat Wood Paneling Products Coating Operation: the application of coating, inks, or adhesives on flat wood paneling products, which may include the use of spray guns, flash-off areas, spray booths, ovens, conveyors, touch-up areas, and/or other equipment operated for the purpose of applying coatings to flat wood paneling products. Any organic solvent cleaning activity associated with the manufacture of flat wood paneling products considered as part of the coating operation.

3.25 Flat Wood Paneling Products: manufactured interior or exterior panels or sidings made of solid wood, plywood, fiberboard, waferboard, particleboard, hardboard, tileboard, or other wood-containing materials to which a protective, decorative, or functional material or layer has been applied. Flatwood paneling products are generally intended for use in construction including, but are not limited to, buildings, homes, trailers, boats, ships, or similar structures.

3.26 Flow Coating: a coating application system with no air supplied to the nozzle, and where paint flows over the part and the excess coating drains into a collection system.

3.27 Hardboard: a panel manufactured primarily from inter-felted ligno-cellulosic fibers which are consolidated under heat and pressure.

3.28 Hardwood Plywood: a plywood whose surface layer is a veneer of hardwood.

3.29 Grams of VOC per Liter of Coating, Excluding Water and Exempt Compounds: the weight of VOC per combined volume of VOC and coating solids, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Excluding Water and Exempt Compounds} = \frac{Ws - Ww - Wec}{Vm - Vw - Vec}$$

Where:

Ws = weight of volatile compounds, in grams
Ww = weight of water, in grams
Wec = weight of exempt compounds, in grams
Vm = volume of material, in liters
Vw = volume of water, in liters

Vec = volume of exempt compounds, in liters

3.30 Grams of VOC per liter of Material: the weight of VOC per volume of material, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{Ws - Ww - Wec}{Vm}$$

Where:
Ws = weight of volatile compounds, in grams
Ww = weight of water, in grams
Wec = weight of exempt compounds, in grams
Vm = volume of material, in liters

3.31 High-Solids Stain: a stain containing more than one (1) pound of solids per gallon of material, and can include wiping stains, glazes, and opaque stains. High-solids stains are formulated to enhance wood grain and change wood color, but not to conceal surface grain.

3.32 High-Volume, Low-Pressure (HVLP) Spray Equipment: equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure, measured dynamically at the center of the air cap and the air horns.

3.33 Imitation Wood Grain: a hand applied finish that simulates the appearance of a specific natural wood grain.

3.34 Ink: a fluid that contains dyes and/or colorants and is used to make markings but not to protect surfaces.

3.35 Leaf Finish: a finish used in conjunction with metal leaf or foil.

3.36 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.37 Low-Solids Stain: a stain containing one (1) pound or less, of solids per gallon of material, and can include semi-transparent stains, toners, and wash coats. Low-solids stains are formulated to enhance wood grain and change wood color, but not to conceal surface grain.

3.38 Maintenance Cleaning: the cleaning of tools, forms, molds, jigs, machinery, and equipment (except coating application equipment, ink application equipment, or adhesive application equipment), and the cleaning of work areas where maintenance or manufacturing occurs.

3.39 Manufacturing Process: the process of making goods or articles by hand or by machine.

3.40 Mold-Seal Coating: 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.

3.41 Multi-Colored Coating: a coating which exhibits more than one (1) color when applied and which is packaged in a single container and applied in a single coat.

3.42 Natural Finish Hardwood Plywood Panel: a panel whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.

3.43 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.44 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.45 Non-Atomized Solvent Flow: solvents in the form of a liquid stream without the introduction of pressurized air or any propellant.

3.46 Non-Leaking Container: a container without a liquid leak.

3.47 Organic Solvent: the same as "Solvent."

3.48 Organic Solvent Cleaning: an activity, or operation, or process, (including surface preparation, cleanup, or wipe cleaning), performed outside of a degreaser, that uses organic solvent to remove uncured adhesives, uncured coatings, uncured inks or other contaminants, including, but not limited to, dirt, soil, oil, lubricants, coolants, moisture, fingerprints, and grease, from parts, products, tools, machinery, application equipment and general work areas. Cleaning spray equipment used for the application of coatings, adhesives, or ink, is also considered to be organic solvent cleaning.

3.49 Panel: a piece of wood or wood product usually rectangular and used inside homes and mobile homes for wall decorations.

3.50 Particleboard: a manufactured board made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure. Thin particleboard has a thickness of one-fourth inch or less.

3.51 Pigmented Coating: an opaque coating which contains binders and colored pigments and is formulated to hide the wood surface, either as an undercoat or topcoat.

3.52 Printed Interior Panel: a panel whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.

3.53 Propellant: any gas, including air, in a pressure container for expelling the contents when the pressure is released.

3.54 Repair: recoating portions of previously coated product to cover mechanical damage to the coating following normal painting operations.

3.55 Repair Cleaning: a solvent cleaning operation or activity carried out during a repair process.

3.56 Repair Process: the process of returning a damaged object or an object not operating properly to good condition.

3.57 Roll Coater: a series of mechanical rollers that forms a thin coating film on the surface of the rollers. The coating is applied to a substrate by moving the substrate underneath the rollers.

3.58 Sanding Sealer: a coating containing binders, which seals the wood prior to application of the subsequent coatings.

3.59 SCAQMD: South Coast Air Quality Management District.

3.60 Simulated Wood Material: any material, such as plastic, glass, metal, etc., that is made to give a wood-like appearance or is processed like a wood product.

3.62 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.63 Solvent Flushing: the use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of equipment by flushing solvent, by a non-atomized solvent flow, through the equipment.

3.64 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.65 Strippable Booth Coating: a coating that is applied to a booth wall to provide a protective film to receive overspray during finishing operations and that is subsequently peeled off and disposed. Strippable booth coatings are intended to reduce or eliminate the need to use organic solvents to clean booth walls.

3.66 Stripper: a liquid used to remove cured coatings, cured inks, and/or cured adhesives.

3.67 Surface Preparation: the removal of contaminants from a surface prior to the application of coatings, inks, or adhesives or before proceeding to the next step of a manufacturing process.

3.69 Thinner: a solvent that is used to dilute coatings to reduce viscosity, color strength, and solids, or to modify drying conditions.

3.69 Tileboard: paneling that has colored waterproof surface coating.

3.70 Toner: a wash coat which contains binders and dyes or pigments to add tint to a coated surface.

3.71 Touch-up: that portion of the coating operation which is incidental to the main coating process but necessary to cover minor imperfections or to achieve coverage as required.

3.72 Viscosity Reducer: an organic solvent which is added to an adhesive, coating or ink to make it more fluid.

3.73 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.74 Wash Coat: a coating, containing binders, which penetrates into and seals wood, prevents undesired staining, and seals in wood pitch. Wash coats with greater than one (1) pound of solids per gallon of coating shall be considered sanding sealers.

3.75 Waste Solvent Material: any solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

3.76 Wipe Cleaning: a solvent cleaning activity performed by hand rubbing an absorbent material such as a rag, paper, sponge, brush, or cotton swab containing solvent.

3.77 Wood Products: objects such as cabinets (kitchen, bath and vanity), tables, chairs, beds, sofas, shutters, doors, trim, containers, tools, ladders, art objects, and any other objects made of solid wood and/or wood composition and/or of simulated wood material used in combination with solid wood or wood composition, and flat wood paneling products.

3.78 Wood Product Coating Operation: a stationary source that performs a combination of coating application steps which may include the use of spray guns, flash-off areas, spray booths, ovens, conveyors, touch-up areas, and/or other equipment operated for the purpose of applying coatings to wood products.

4.0 Exemptions

4.1 The provisions of the rule shall not apply to:

4.1.1 Aerosol-spray coatings for touch up and repair.

4.1.2 Wood products coating operations that use a total of less than 20 gallons of coating per year in all wood products coating operations in a stationary source. Operators are required to keep records specified in Section 6.2 if claiming this exemption.

4.1.3 The application of coatings by template in order to add designs, letters, or numbers to wood products.

4.1.4 The application of coatings to wooden musical instruments.

4.1.5 Residential noncommercial operations.

4.2 Architectural Coatings: The provisions of this rule shall not apply to the application of coatings to stationary structures and their appurtenances subject to the provisions of Rule 4601 (Architectural Coatings).

4.3 Refinishing, Replacement, and Custom Replica Furniture Operations: The provisions of Sections 5.1, 5.2, 5.3 and 5.4 shall not apply to any refinishing operation necessary for preservation, for returning the wood product to original condition, for replacing missing furniture to complete a matching set, or for producing custom replica furniture, provided records are maintained as specified in Section 6.3.

4.4 Specific Finishes: Except for flat wood paneling products subject to the provisions of Section 5.2, the provisions of Sections 5.1, 5.2, 5.3 and 5.4 shall not apply to coatings used to produce the following finishes, provided records are maintained as specified in Section 6.2:

4.4.1 Crackle lacquers.
4.4.2 Faux finishes.
4.4.3 Imitation wood grain.
4.4.4 Leaf Finishes.

5.0 Requirements

An operator of wood products coating operation, except for flat wood paneling products coating operation, shall comply with the requirements of Section 5.1 and other applicable provisions of this rule. An operator of flat wood paneling product coating operation shall comply with the requirements of Section 5.3 and other applicable requirements of this rule.

5.1 Wood Products Coating Operation

An operator shall not apply any coating to a wood product, as defined in Section 3.0, which has a VOC content, as applied, that exceeds the applicable limit specified in Tables 1 or 2:

Table 1 VOC Content Limits for Wood Product Coating Operation		
Coating Category	grams of VOC/liter of coating, excluding water and exempt compounds, as applied	pounds of VOC/gallon of coating, excluding water and exempt compounds, as applied
Clear Topcoat	275	2.3
Filler	275	2.3
High-Solids Stain	240	2.0
Ink	500	4.2
Mold-Seal Coating	750	6.3
Multi-Colored Coating	275	2.3
Pigmented Coating	275	2.3
Sanding Sealer	275	2.3

Table 2 VOC Content Limits for Wood Product Coating Operation		
Coating Category	grams of VOC/liter of material, as applied	pounds of VOC/gallon of material, as applied
Low-Solids Stain	120	1.0
Stripper	350	2.9

5.2 In lieu of complying with the requirements in Section 5.1, an operator may operate an APCO-approved VOC emission control system that controls the emissions from the source operation and that meets the requirements of Section 5.4.

5.3 Flat Wood Paneling Products Coating Operation

5.3.1 Effective on and after April 16, 2009, an operator whose total actual VOC emissions from flat wood paneling coating operation at a stationary source that emits at least 15 pounds per day of VOC, before consideration of controls, shall not apply to any flat wood paneling products any coating that exceeds the VOC content limit in Table 3. The 15 pounds per day of VOC emissions, before consideration of controls, includes the amount of VOC emissions from any organic solvent cleaning activity associated with the manufacture of flat wood paneling products. In lieu of complying with the VOC content limits in Table 3 limits, an operator may comply with Section 5.3.1.2.

5.3.1.1 An operator shall comply with the applicable recordkeeping requirements of Sections 6.2, 6.4, and 6.5 to demonstrate if the VOC emissions from flat wood paneling products coating operation exceed 15 pounds per day of VOC.

5.3.1.2 In lieu of complying with the VOC content limits in Table 3, an operator may operate a VOC control system that meets the applicable requirements of Section 5.4.

5.3.2 An operator of flat wood paneling coating operations whose emissions are less than 15 pounds per day of VOC, before consideration of controls, shall comply with the applicable VOC content limits specified in Tables 1 or 2. An operator shall comply with the applicable recordkeeping requirements of Sections 6.2, 6.4, and 6.5 to demonstrate if the VOC emissions from flat wood paneling products coating operation are less than 15 pounds per day of VOC.

Table 3 VOC Content Limits for Flat Wood Paneling Products Coating Operation		
Coatings, Inks, or Adhesives Applied to the Flat Wood Paneling Categories	Comply with at least one of the VOC content limits below.	
	Grams of VOC/liter (pounds of VOC/gallon) of coating, excluding water and exempt compounds, as applied	Grams of VOC /liter (pounds of VOC/gallon) of material, as applied
Printed interior panels made of hardwood plywood, or thin particle board	250 grams/liter (2.1 pounds/gallon)	350 grams /liter (2.9 pounds/gallon)
Natural finish hardwood plywood panels		
Class II finishes on hardboard panels		
Tileboard		
Exterior siding		

5.4 VOC Emission Control System Requirements

In lieu of complying with applicable provisions of Sections 5.1, 5.3, 5.5, or 5.7, an operator may use a VOC emission control system that controls emissions from the source operation and meets the requirements of Sections 5.4.1 through 5.4.6.

5.4.1 The VOC emission control system shall comply with the requirements of Section 5.4.2 through Section 5.4.6 during periods of emission-producing activities.

5.4.2 The VOC emission control system shall be under District Permit to Operate that is approved by the APCO.

5.4.3 For wood products coating operation subject to the requirements of Section 5.1, solvent cleaning operations subject to the requirements of Section 5.7.3, and application equipment requirements of Section 5.5.10, the VOC emission control system shall be operated with an overall capture and control efficiency of at least 85 percent by weight.

5.4.4 For flat wood paneling products coating operation subject to the requirements of Section 5.3.1, the VOC emission control system shall be operated with an overall capture and control efficiency of at least 90 percent by weight.

5.4.5 In no case shall compliance through the use of a VOC emission control system result in VOC emissions in excess of the VOC emissions which would result from compliance with applicable provisions of Sections 5.1, 5.3, 5.5, or 5.7.

5.4.6 The minimum required overall capture and control efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by using the following equation:

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

Where:

CE = Minimum Required Overall Capture and Control Efficiency, percent

VOC_{LWc} = VOC Limit, less water and less exempt compounds

$VOC_{LWn,Max}$ = Maximum VOC content of noncompliant 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 noncompliant coating, containing the maximum VOC content of the multi-component coating

D_c = Density of corresponding solvent, reducer, or thinner used in the compliant coating system.

5.5 Application Equipment Requirements

An operator 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 proper operating procedures, and by the use of one of the following methods:

5.5.1 Electrostatic application;

5.5.2 High-Volume, Low-Pressure (HVLP) spray,

5.5.2.1 High-Volume, Low-Pressure (HVLP) spray equipment shall be operated in accordance with the manufacturer's recommendations.

5.5.2.2 For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.5.2.3 A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Section 3.0.

5.5.3 Hand roller;

5.5.4 Flow coat;

5.5.5 Roll coater;

5.5.6 Dip coat;

5.5.7 Paint brush;

5.5.8 Detailing or touch-up guns; or

5.5.9 Such other coating application methods which are demonstrated to the APCO to be capable of achieving at least 65 percent transfer efficiency as determined in accordance with Section 6.6. Prior written approval from the APCO shall be obtained for each alternative method used.

5.5.10 In lieu of complying with the requirements in Sections 5.5.1 through 5.5.9, an operator may control emissions from application equipment with an APCO-approved VOC emission control system that meets the applicable requirements of Section 5.4.

5.6 Work Practice Standards for Flat Wood Paneling Products Coating Operations

An operator shall minimize VOC emissions by complying with the following work practice standards:

5.6.1 Store all coatings, inks, adhesives, thinners, cleaning materials, and waste materials in closed containers. The containers shall remain closed at all times, except when specifically in use.

5.6.2 Close mixing vessels that contain VOC coatings and other materials, except when specifically in use.

5.6.3 Minimize spills of any VOC-containing materials and clean up spills immediately.

5.6.4 Convey any VOC-containing materials in closed containers or pipes.

5.7 Organic Solvent Cleaning Requirements

5.7.1 An operator shall not use organic solvents for cleaning operations that exceed the content limits specified in Table 4 in accordance with the corresponding effective date.

5.7.2 An operator shall not use a strippable booth coating with a VOC content in excess of 450 g/l (3.8 lb/gal) as applied, excluding water and exempt compounds.

Table 4 – VOC Limits for Organic Solvents Used in Cleaning Operations

Type of Solvent Cleaning Operation	Effective November 15, 2003 through September 20, 2008	Effective on and after September 21, 2008
	VOC Content Limit Grams of VOC/liter of material (lb/gal)	VOC Content Limit Grams of VOC/liter of material (lb/gal)
A. Product Cleaning During Manufacturing Process or Surface Preparation for Coating Application	50 (0.42)	25 (0.21)
B. Repair and Maintenance Cleaning	50 (0.42)	25 (0.21)
C. Cleaning of Coating Application Equipment	550 (4.6)	25 (0.21)

5.7.3 In lieu of complying with the VOC content limits of Table 4, an operator may control emissions from cleaning operations with an APCO-approved VOC emission control system that meets the applicable requirements of Section 5.4.

5.7.4 Until September 20, 2008, an operator performing Table 4 Category C cleaning outside of an APCO-approved VOC emission control system and using solvent with VOC content greater than 50 g/L shall meet the requirements of Sections 5.7.5 through 5.7.7 in addition to meeting the VOC content limits of Table 4 Category C. On and after September 21, 2008, an operator shall perform all solvent cleaning operations with cleaning material having VOC content of 25 g/L or less, unless such cleaning operations are carried out within the control of an APCO-approved emission control system that meets the requirements of Section

5.4. Sections 5.7.5 through 5.7.7 shall not apply on and after September 21, 2008.

5.7.5 Cleaning activities that use solvents shall be performed by one or more of the following methods:

5.7.5.1 Wipe cleaning; or

5.7.5.2 Application of solvent from hand-held spray bottles from which solvents are dispensed without a propellant-induced force; or

5.7.5.3 Non-atomized solvent flow method in which 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

5.7.5.4 Solvent flushing method in which the cleaning solvent is discharged into a container that 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.

5.7.6 Solvent shall not be atomized into the open air unless it is vented to a VOC emission control system that complies with Section 5.3. This provision shall not apply to the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with spray bottles or containers described in Section 5.7.5.2.

5.7.7 An owner or operator shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use.

5.7.8 In lieu of complying with the solvent cleaning provisions of Sections 5.7.4 through 5.7.7, an operator may control emissions from the cleaning operation with a VOC emission control system that meets the requirements of Section 5.4.

5.8 Organic Solvent Disposal and Storage Requirements

An operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc., coatings, adhesives, catalysts, and thinners in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

5.9 Prohibition of Specification

No person shall require for use or specify the application of any coating subject to the provisions of this rule if such use or application would result in a violation of the provisions of this rule. This prohibition shall apply to all written or oral contracts under the terms of which any coating which is subject to the provisions of this rule is to be applied to any wood product at any physical location within the District.

6.0 Administrative Requirements

6.1 The operator shall retain the records specified in Sections 6.1 through 6.4, as applicable, on site for a period of five years, make them available on site during normal business hours to the APCO, ARB, or EPA, and submit them to the APCO, ARB, or EPA upon request.

6.2 Recordkeeping Requirements for Coatings

An operator subject to Sections 5.1, 5.2, 5.3, 5.4, 5.5, or 5.7 and an operator using coatings, inks, or adhesives exempt by Section 4.1.2 or 4.4, shall comply with the following requirements:

6.2.1 Maintain a current list of coatings, inks, adhesives, and solvents in use which provides all of the data necessary to evaluate compliance, including the following information, as applicable:

6.2.1.1 identify coatings, catalysts, reducers, inks, adhesives and solvents.

6.2.1.2 manufacturer's recommended mix ratio of components.

6.2.1.3 VOC content of coatings, as applied.

6.2.1.4 VOC content of solvents.

6.2.1.5 VOC content of inks, as applied.

6.2.1.6 VOC content of adhesives, as applied.

6.2.2 Maintain records on a daily basis that provide the following information, as applicable:

6.2.2.1 coating and mix ratio of components in the coating used.

6.2.2.2 quantity of each coating applied.

6.2.2.3 identification of coating category.

6.2.2.4 identification and quantity of each ink used.

6.2.2.5 identification and quantity of each adhesive used.

6.2.2.6 type and amount of solvent used for cleanup and surface preparation.

6.2.3 In lieu of maintaining records on a daily basis, stationary sources which are exempt by Section 4.1.2 may maintain such records on an extended basis, not to exceed monthly.

6.3 Refinishing, Replacement and Custom Replica Furniture Operations: An-operator claiming exemption under Section 4.3 shall comply with the following requirements:

6.3.1 Maintain a current list of coatings in use which provides the following information:

6.3.1.1 coating, catalyst, and reducer.

6.3.1.2 manufacturer's recommended mix ratio of components.

6.3.1.3 VOC content of each component.

6.3.2 Maintain records that provide the following information such that daily usage can be determined:

6.3.2.1 amount of coating, catalyst, and reducer used.

6.3.2.2 type and amount of solvent used for cleanup and surface preparation.

6.3.2.3 type and amount of stripper used.

6.3.2.4 each type of wood product coated. Wood product types are as follows:

6.3.2.4.1 refinishing.
6.3.2.4.2 replacement.
6.3.2.4.3 custom replica furniture.

6.4 Recordkeeping Requirements for Cleaning Solvents

An operator who uses solvents subject to Section 5.7 of this rule shall maintain the following records, and have available at all times, a current list of solvents in use which provides all of the data necessary to evaluate compliance, including the following information as applicable:

6.4.1 Keep a copy of the manufacturer's product data sheet or material safety data sheet of the solvents used for organic solvent cleaning activities.

6.4.2 Maintain a current list of solvents that are being used for organic solvent cleaning activities. The list shall include the following information:

6.4.2.1 The name of the solvent and its manufacturer's name.

6.4.2.2 The VOC content of the solvent expressed in grams/liter or lb/gallon.

6.4.2.3 When the solvent is a mixture of different materials that are blended by the operator, the mix ratio of the batch shall be recorded and the VOC content of the batch shall be calculated and recorded in order to determine compliance with the specified limits of VOC content, as applied.

6.4.2.4 The type of cleaning activity for each solvent that is being used in accordance with the applicable cleaning category specified in Table 4 of this rule.

6.5 VOC Emission Control Systems Records

An operator using a VOC emission control system pursuant to Section 5.4 as a means of complying with this rule shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. Key system operating parameters are those necessary to ensure compliance with VOC limits. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

6.6 Labeling Requirements

6.6.1 VOC Content: Each container or accompanying data sheet of any coating subject to this rule shall display the maximum VOC content of the coating,

as applied after any thinning as recommended by the manufacturer. VOC content shall be displayed as grams of VOC per liter (or pounds of VOC per gallon) of coating, less water and exempt compounds. VOC content displayed may be calculated using product formulation data, or may be determined using the test method in Section 6.8.

6.6.2 Thinning Recommendations: Each container or accompanying data sheet of any coating subject to this rule shall display the manufacturer's recommendation regarding thinning of the coating. This requirement shall not apply to the thinning of coatings with water.

6.7 Compliance Statement Requirements

Manufacturers of any solvents subject to this rule shall indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, the VOC content, and density, as supplied. The VOC content shall be expressed in units of gm/liter or lb/gallon.

6.8 Test Methods

The following test methods shall be used to determine compliance with the provisions of this rule. Alternative test methods may be used provided they are approved by the APCO, ARB, and EPA.

6.8.1 Analysis of Samples: Samples of VOC as specified in this rule shall be analyzed by EPA Method 24 and exempt halogenated compounds shall be analyzed by ARB Method 432.

6.8.2 Determination of Emissions: Emissions of VOC shall be measured by EPA Method 25, 25A, or 25B, and exempt halogenated compounds shall be analyzed by ARB Method 422.

6.8.3 Determination of emissions of VOC from spray gun cleaning systems shall be made using SCAQMD "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," October 3, 1989.

6.8.4 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.

6.8.5 Determination of Overall Capture and Control Efficiency of VOC Emission Control System

6.8.5.1 The capture efficiency of a VOC emission control system’s collection device(s) shall be determined according to EPA’s “Guidelines for Determining Capture Efficiency,” January 9,

1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable.

6.8.5.1.1 Capture Efficiency, percent, is the ratio of the weight of VOC in the effluent stream entering the control device to the weight of VOC emitted from wood product coating operation or flat wood paneling product coating operation, both measured simultaneously, shall be calculated by the following equation:

$$\text{Capture Efficiency (\%)} = (Wc \div We) \times 100$$

Where: Wc = weight of VOC entering the control device
We = weight of VOC emitted

6.8.5.2 The control efficiency of a VOC emission control system's control device(s) shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.8.5.2.1 Control Device Efficiency, in percent, is the ratio of the weight of 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, shall be calculated by the following equation:

$$\text{Control Device Efficiency (\%)} = [(Wc-Wa) \div Wc] \times 100$$

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

6.8.5.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{CAPTURE\ AND\ CONTROL} = [\ CE_{CAPTURE} \times CE_{CONTROL}\ ] \ / \ 100\ \%$$

Where:
$CE_{CAPTURE\ AND\ CONTROL}$ = Overall Capture and Control Efficiency, in percent

$CE_{CAPTURE}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.8.5.1.

$CE_{CONTROL}$ = Control Efficiency of the control device, in percent, as determined in Section 6.8.5.2

6.9 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.

7.0 Compliance Schedule

7.1 The operator who becomes subject to the requirements of this rule through loss of exemption status allowed by Section 4.0 shall comply with all the applicable provisions of this rule effective on the date the exemption status is lost.

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RULE 4607 GRAPHIC ARTS AND PAPER, FILM, FOIL AND FABRIC COATINGS

(Adopted April 11, 1991; Amended September 19, 1991; Amended December 17, 1992; Amended March 31, 1993; Amended May 19, 1994; Amended September 17, 1997; Amended December 20, 2001, Amended September 20, 2007, Amended December 18, 2008)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from graphic arts printing operations, digital printing operations, and paper, film, foil or fabric coating operations.

2.0 Applicability

This rule is applicable to any graphic arts printing operation, to digital printing operations, and to any paper, film, foil, or fabric coating operation and to the organic solvent cleaning materials and processes associated with such operations.

3.0 Definitions

3.1 Aerosol Adhesive: an adhesive that is dispensed from a hand-held self-pressurized container by means of propellant induced force.

3.2 Aerosol Product: a hand-held, non-refillable container that expels a pressurized solvent-containing product by means of a propellant-induced force.

3.3 APCO: as defined in Rule 1020 (Definitions).

3.4 Application Equipment: a device, including, but not limited to, a spray gun, brush, roller, and a printing press, used to apply adhesives, coatings, or inks.

3.5 Application Process: any process where surface coatings are applied and/or cured to paper or fabric on a coating line. Such coating line shall include coating applicators, heating or drying ovens, any dryers, and other equipment where VOC emissions occur.

3.6 ARB: California Air Resources Board.

3.7 ASTM: American Society for Testing and Materials.

3.8 Bench Scale Project: a project (other than at a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top.

3.9 Blanket: a synthetic rubber mat used in offset-lithography to transfer or "offset" an image from a planographic printing plate to paper or other substrate.

3.10 Blanket Repair Material: the material used in offset printing to correct low spots in the press blanket.

3.11 Blanket Wash: a solvent used to remove ink from the blanket of a press.

3.12 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 the operation, 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 from the operation

3.13 CFR: Code of Federal Regulations.

3.14 Coating: the application of a uniform layer of material across the entire width of a substrate. Those machines which have both coating and printing units should be considered as performing a printing operation. Coating applications that are not performed in association with a printing operation are considered coating operations and are not graphic arts printing operations.

3.15 Coating Line: a series of coating applicators, flash-off areas, and any associated curing/drying equipment between one or more unwind/feed stations and one or more rewind/cutting stations.

3.16 Control Device: equipment such as an incinerator or adsorber, or cooler/condenser filtration used to prevent air pollutants from being emitted into the atmosphere.

3.17 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 = $[(W_c - W_d) / W_c] \times 100$

Where:
W_c = Weight of VOC entering control device
W_d = Weight of VOC discharged from the control device

3.18 Converting Operation: coating, waxing, laminating, extrusion coating, or printing, to fabricate base materials which are then used to produce wraps, bags, and other pre-formed packages.

3.19 Conventional Printing Operations: those printing operations that utilize physical masters, stencils, screens or plates during the printing process. Conventional printing operations use technologies including but not limited to lithography, flexography, gravure, letterpress, and screen printing.

3.20 Cured Adhesive, Cured Coating, or Cured Ink: an adhesive, coating, or ink that is dry to the touch.

3.21 Degreaser: a tank, tray, drum or other container in which objects to be cleaned are exposed to a solvent or solvent vapor in order to remove contaminants. The objects to be cleaned include, but are not limited to, parts, products, tools, machinery, and equipment. An enclosed spray application equipment cleaning system is not a degreaser.

3.22 Die Coater (or Slit Coater): a type of application equipment that coats an object by flowing coatings through a slit directly onto the object moving past the slit.

3.23 Digital Printer: a printing device that uses a computer-driven machine to transfer an electronic image to a substrate through the use of inks, toners, or other graphic materials. Digital printing technologies include, but are not limited to, various forms of inkjet, thermography, electrophotography, ionography, and magnetography.

3.24 Digital Printing Operations: those operations that do not use a physical master, stencils, or plates but use digital data to control the deposition of ink, toner, or dye to create images.

3.25 Dip Coater: 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.

3.26 Dissolver: an organic solvent that is added to an adhesive, coating, or ink in order to melt or to liquefy solid particles.

3.27 Doctor Blade: a steel blade used to scrape excess ink from a printing plate or inking cylinder.

3.28 Dryer: a hot air, high velocity system used to dry inks on printed or coated substrate.

3.29 Dye Sublimation: an imaging process that vaporizes colorant with heat and pressure, and deposits it onto a substrate in order to simulate a continuous tone image. Dye sublimation is a digital printing technology.

3.30 Electron Beam Ink: ink that, when exposed to electron energy, crosslinks or solidifies in milliseconds.

3.31 Electrophotography: a digital printing technology that works by recording an image on a drum in the form of an electrostatic charge, which is then transferred to the substrate. Electrophotography includes such technologies as laser printers, xerography, and liquid electrophotography.

3.32 Electrostatic Application: a method of applying coating whereby atomized paint droplets are charged and subsequently deposited on the substrate by electrostatic attraction.

3.33 EPA: United States Environmental Protection Agency.

3.34 Exempt Organic Compounds: all organic compounds not classified as VOCs, as listed in Rule 1020 (Definitions).

3.35 Extreme Performance Ink/Coating: an ink or coating used in screen printing on a non-porous substrate that is designed to resist or withstand any of the following:

3.35.1 more than two years of outdoor exposure; or

3.35.2 exposure to industrial-grade chemicals, solvents, acids, or detergents, oil products, cosmetics, temperatures exceeding 170^{o}F, vacuum-forming, embossing or molding.

3.36 Fabric Coating: any decorative or protective coating or reinforcing material applied or impregnated into textile fabric, vinyl coated textile fabric, or vinyl sheets.

3.37 Film Coating: a 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.

3.38 Fine Arts Painting: any unique visual representation, consisting of paint, ink, or other media, hand applied to a substrate of canvas, wood, paper, metal, or other material.

3.39 Flexible Packaging: any package or part of a package the shape of which can readily be changed. Flexible packaging includes, but is not limited to, bags, pouches, liners, and wraps utilizing paper, plastic, film, aluminum foil, metalized or coated paper or film, or any combination of these materials.

3.40 Flexible Packaging Industry: establishments that convert materials consisting of light gauge papers, plastic films, cellulosic films such as cellophane, thin gauge

metal sheets such as aluminum foil or steel foil, and combinations thereof into a variety of product packages.

3.41 Flexographic Printing: the application of words, designs, or pictures to a substrate by means of a roll printing technique in which the pattern is applied to an image carrier made of rubber or other elastomeric materials. The image to be printed is raised above the carrier surface, while the non-image area is not raised.

3.42 Flow Coater: a coating application system with no air supplied to the nozzle and where paint flows over the part and the excess coating drains back into the collection system.

3.43 Foam Coater: a coating application system that coats an object by flowing foam through holes or a slit directly onto the object moving underneath it.

3.44 Foil Coating: a coating applied in a web coating process on any foil 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 and animal consumption.

3.45 Fountain Solution: solution composed mainly of water and contains at least one of the following materials: etchants such as mineral salts; hydrophilic gums; or other additives, which is applied to the image plate to maintain the hydrophilic properties of the non-image areas.

3.46 Fugitive Emissions: emissions of VOC from any portion of the printing, coating, or laminating operation other than from the dryer.

3.47 Grams of VOC Per Liter of Ink, Coating, Adhesive, or Wash Primer Less Water and Less Exempt Compounds: the weight of VOC per combined volume of VOC and coating solids, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Ink, Coating, Adhesive, or Wash Primer Less Water and Less Exempt Compounds} = \frac{Ws - Ww - Wec}{Vm - Vw - Vec}$$

Where:

Ws = weight of volatile compounds, in grams
Ww = weight of water, in grams
Wec = weight of exempt compounds, in grams
Vm = volume of material, in liters
Vec = volume of exempt compounds, in liters
Vw = volume of water, in liters

3.48 Grams of VOC Per Liter of Material: the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{Ws - Ww - Wec}{Vm}$$

Where:

Ws = weight of volatile compounds, in grams
Ww = weight of water, in grams
Wec = weight of exempt compounds, in grams
Vm = volume of materials, in liters

3.49 Graphic Arts Coating: the application of a uniform layer of material across the entire width of a substrate. Those machines which perform both coating and printing should be considered as performing a printing operation. For purposes of this rule, digital printing is not considered graphic arts coating operations.

3.50 Graphic Arts Printing Operations: those operations employing conventional printing operations, or any coating or laminating process associated with conventional printing to produce published products and packages. Organic solvent cleaning operations performed in order to produce published products and packages are considered to be part of Graphic Arts Printing Operations.

3.51 Gravure Printing: an intaglio printing method in which the ink is transferred from minute etched wells on a cylinder to the substrate, which is supported by an impression roller with excess ink removed from the cylinder by a doctor blade.

3.52 Hand Application Method: a method of applying a coating to a substrate using manually held, non-mechanically operated equipment. Such equipment includes paintbrushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

3.53 Heating Oven: a device into which paper or fabric is put to dry or cure the applied coating by applying heat.

3.54 Heatset Ink: a quick-drying ink in which the solvents are vaporized by passing the printed surface through a heater or oven.

3.55 High-Volume, Low-Pressure (HVLP) Spray Equipment: equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure, measured dynamically at the center of the air cap and the air horns.

3.56 Ink Jet: a digital printing technology in which ink is ejected through printheads onto a substrate to create an image.

3.57 Intaglio Printing: printing done from a plate or cylinder in which the image is sunk below (etched or engraved into) the surface.

3.58 Ionography: a digital printing technology that utilizes a directed array of ions to create a charge on a nonconductive surface to create an image. Ionography can also be known as ion deposition or electron charge deposition printing.

3.59 Key system operating parameters: those parameters necessary to ensure compliance with Section 5.6, including, but not limited to, temperature, pressure drop, and air flow rate.

3.60 Lamination: a process of composing two or more layers of material to form a single, multiple-layer sheet by using an adhesive.

3.61 Letterpress Printing: a method where the image area is raised relative to the non-image area and the ink is transferred to the paper directly from the image surface.

3.62 Line: the minimum equipment which is required for the application and/or drying of inks and/or curing of ultraviolet coatings of inks, or coatings on a substrate, including the ink and/or coating applicators and drying systems, and associated ink and coating agitation and delivery systems.

3.63 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.64 Liquid Electrophotography (LEP): a digital printing technology that records a latent electrostatic image on a photoconductive surface, such as a drum or belt. The image created by applying toner to the charged areas of the photoconductor is electrically transferred to an intermediate surface. In a second transfer process, the image is released from the blanket surface to the final substrate, cooling rapidly as the substrate passes between the blanket and an impression drum, causing the image to "peel off" the blanket and be affixed to the substrate. This operation repeats itself on the one printing station for every color separation in the image.

3.65 Lithographic Printing: a plane-o-graphic printing method in which the image and non-image areas are on the same plane.

3.66 Magnetography: a digital printing technology whereby an image is printed using a magnetic toner, electromagnetic write heads, and magnetic fields on an imaging drum.

3.67 Maintenance Cleaning: a solvent cleaning operation or activity carried out to keep tools, machinery, equipment (excluding ink, coating, or adhesive application equipment) or general work areas in clean and good operational condition.

3.68 Manufacturing Process: the process of making goods or articles by hand or by machine.

3.69 Matte Finish Flexographic Ink: a printing ink which is applied on non-porous substrates in flexographic printing operations and contains at least five percent by weight silicon dioxide flattening agent.

3.70 Metallic Finish Flexographic Ink: a printing ink which is applied on non-porous substrates in flexographic printing operations and contains at least 28 percent by weight elemental metal particles.

3.71 Metallic Ink: 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.

3.72 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.73 Non-Atomized Solvent Flow: solvents in the form of a liquid stream without the introduction of any propellant.

3.74 Non-heatset Ink: an ink which dries by oxidation and/or absorption into the substrate without use of heat from dryers or ovens.

3.75 Non-Leaking Container: a container without liquid leak.

3.76 Non-porous Substrate: any substrate whose surface prevents penetration by water, including but not limited to foil, polyethylene, polypropylene, cellophane, metalized polyester, nylon, and polyethylene terephthalate (mylar), paper or paperboard coated with non-porous surface. Clay coated printing paper as defined by the American Paper Institute Classification System, and paperboard coated with clay to prevent water penetration, shall be considered non-porous substrates.

3.77 Offset Lithographic Printing: a plane-o-graphic method in which the image and non-image areas are on the same plane and the ink is offset from a plate to a rubber blanket, and then from the blanket to the substrate.

3.78 On-Press Component: a part, component, or accessory of a press that is cleaned while still being physically attached to the press.

3.79 Operation: any physical action resulting in a change in the location, form, or physical properties of a material, or any chemical action resulting in a change in the chemical composition or the chemical or physical properties of a material.

3.80 Operator: includes but is not limited to any person who owns, leases, supervises, or operates a facility and/or equipment.

3.81 Organic Solvent: the same as "Solvent."

3.82 Organic Solvent Cleaning: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.83 Packaging Gravure: gravure printing on paper, paperboard, foil, film, or other substrates which are to be used to produce containers or packages.

3.84 Pantone Ink: a printing ink created for color matching by combination of process inks.

3.85 Paper Coating: 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.

3.86 Plastisizer: a material used to keep plastic material soft and viscous.

3.87 Plastisol: a coating that is a liquid dispersion of small particles of resins and plastisizers that are fused to become a plastic.

3.88 Porous Substrate: a substrate whose surface does not prevent penetration by water, including but not limited to, paper, paperboard, and any paper product coated with a porous material.

3.89 Process Ink: in printing, the hues: yellow, magenta, and cyan, plus black in the four-color print process.

3.90 Proof Press: a press used only for printing a sample copy of a graphic art product to check the quality of print, color reproduction and editorial content.

3.91 Propellant: any gas, including air, in a pressure container for expelling the contents when the pressure is released.

3.92 Publication Gravure: gravure printing on a substrate which is subsequently formed into books, magazines, catalogs, brochures, directories, newspaper supplements or other types of printed materials.

3.93 Removable Press Component: 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, fountains, impression cylinders and plates shall not be considered as removable press components.

3.94 Repair Cleaning: a solvent cleaning operation or activity carried out during a repair process.

3.95 Repair Process: the process of returning a damaged object or an object not operating properly to good condition.

3.96 Research and Development: a facility or portion thereof used to further the development of useful materials, devices, systems, or methods, including, but not limited to, design, development, and improvement of prototypes and processes. Research and development does not include the manufacturing process itself.

3.97 Resists: inks that are screen printed to form the required patterns, alphabets, numerals, designs, or symbols on the surface of the substrate; protect the screen printed or covered surface from the subsequent application of etching or plating solution; and are later removed from the substrate by a resist stripper. Resist applications include, but are not limited to, etched electronic circuits, display screens, chemical milling of parts, nameplates and signage.

3.98 Roll Coater: 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.

3.99 Roller Wash: a solvent used to remove ink from the rollers of a press.

3.100 SCAQMD: South Coast Air Quality Management District.

3.101 Screen Printing: a commercial and industrial printing technique which involves the passage of a printing medium, such as ink, through a taut web or fabric to which a refined form of stencil has been applied. The stencil openings determine the form and dimension of the imprint.

3.102 Screen Printing Metallic Ink: an ink used in screen printing that contains greater than 50 grams of elemental metal per liter (0.4 lb/gal) of ink as applied.

3.103 Sign Ink/Coating: an ink or coating used in screen printing indoor and outdoor signs (excluding structural components) and murals, including lettering enamels, poster colors, copy blockers, and bulletin enamels.

3.104 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.105 Solvent Flushing: the use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of equipment by flushing solvent, by a non-atomized solvent flow, through the equipment.

3.106 Specialty Flexographic Printing: a flexographic printing on polyethylene or polypropylene food packaging, fertilizer bags, or liquid-tight food containers.

3.107 Specialty Gravure Printing: printing that uses the gravure process for production of wall and floor covering, decorated household paper products such as towels and tissues, cigarette filter tips, vinyl upholstery, woodgrains, and a wide variety of other products.

3.108 Specialty Ink: an ink that is applied only on non-porous substrates in flexographic printing operations, and is either:

3.108.1 a metallic ink that contains at least 28 percent elemental metallic powder, by weight; or

3.108.2 a matte finish ink containing at least 5 percent silicon dioxide flattening agent, by weight.

3.109 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.110 Stereolithography: 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.

3.111 Stripping: the use of solvent to remove material such as cured adhesives, cured inks, cured or dried paint, cured or dried paint residue or temporary protective coating.

3.112 Substrate Retention Factor: a fraction, expressed in percent, of VOCs in lithographic inks which is retained in the substrate when the inks dry by adsorption or absorption.

3.113 Surface Preparation: the removal of contaminants from a surface prior to the application of coatings, inks, or adhesives or before proceeding to the next step of a manufacturing process.

3.114 Thermography: a digital printing technology that creates an image via a chemical reaction that occurs when portions of a thermal-coated substrate are subjected to heat. Thermographic technologies include but are not limited to thermal wax transfer, multi-bit thermal wax transfer, and dye sublimation.

3.115 Thinner: a solvent that is used to dilute coatings or inks to reduce viscosity, color strength, and solids, or to modify drying conditions.

3.116 Ultraviolet (UV) Ink: an ink which dries by polymerization reaction by ultraviolet or electron beam radiation.

3.117 Viscosity Reducer: an organic solvent which is added to an adhesive, coating or ink to make it more fluid.

3.118 Volatile Organic Compounds (VOCs): as defined in Rule 1020 (Definitions).

3.119 Wash Primer: a material used to clean and/or to activate surfaces of paper or fabric that contains no more than 5 percent, by weight, solid materials.

3.120 Waste Solvent Material: any solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

3.121 Water Slide Decal: a decal that is screen printed onto treated paper stock and is removable from the stock by the dissolution of an underlying water- soluble adhesive or similar carrier.

3.122 Web: a continuous sheet of substrate.

3.123 Web Feed: an automatic system which supplies substrates from a web.

3.124 Web Splicing Adhesive: an adhesive used to join two continuous rolls of substrate materials.

3.125 Wipe Cleaning: a solvent cleaning activity performed by hand rubbing an absorbent material such as a rag, paper, sponge, brush, or cotton swab containing solvent.

4.0 Exemptions

4.1 The requirements of this rule, except for the recordkeeping requirements of Section 6.1, shall not apply to the following operations:

4.1.1 Effective until December 31, 2009, any graphic arts printing operation which emits less than 400 pounds of VOC per calendar month.

4.1.2 On and after January 1, 2010 any graphic arts printing operation that emits less than 200 pounds of VOC per 12 rolling consecutive calendar months.

4.1.3 Blanket repair materials used in containers of four (4) fluid ounces or less.

4.1.4 Digital printers and Digital printing operations.

4.2 The exemptions in Section 4.1 shall not apply to paper, film, foil, or fabric coating operations as defined in Section 3.0.

4.3 The requirements of this rule shall not apply to:

4.3.1 Proof presses;

4.3.2 Aerosol adhesives;

4.3.3 The application of coatings and use of cleaning solvents in creating fine arts paintings;

4.3.4 Stripping of cured coatings, cured adhesives, and cured inks, except the stripping of such materials from spray application equipment;

4.3.5 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.

4.4 The provisions of Section 5.5 shall not apply to the application of coatings via aerosol products, as defined in Section 3.0.

4.5 The VOC content limits of Table 7 shall not apply to cleaning in laboratory tests and analyses, or bench scale or research and development projects.

5.0 Requirements

5.1 Graphic Arts Printing Operation

An operator performing a graphic arts printing operation not subject to Section 5.2, 5.3, 5.4, or 5.5 shall not use graphic arts materials in excess of the VOC content limits in Table 1 and Table 2, in accordance with the corresponding effective date.

Table 1 VOC Content Limits for Inks, Coatings, and Adhesives		
Material	Grams of VOC per liter (lb/gal), less water and less exempt compounds, as applied, effective through December 31, 2009	Grams of VOC per liter (lb/gal), less water and less exempt compounds, as applied, effective on and after January 1, 2010
Flexographic Ink on Porous Substrates ~~Ink~~	300 (2.5)	225 (1.88)
All Other Inks	300 (2.5)	300 (2.5)
Coatings	300 (2.5)	300 (2.5)
Adhesives	150 (1.25)	150 (1.25)
Web Splicing Adhesives	300 (2.5)	150 (1.25)

Table 2 VOC Content Limits for Fountain Solution		
Fountain Solution	Percent VOC by Volume, effective through December 31, 2009	Percent VOC by Volume, effective on and after January 1, 2010
Heatset Web Offset Lithographic	8	1.6
Coldset Web Offset Lithographic	8	5.0
Sheet-fed Offset Lithographic with maximum sheet size greater than 11 x 17 inches	8	5.0
All Other Presses	8	8.0

5.2 Flexographic Specialty Ink

5.2.1 An operator using a flexographic printing operation shall not use a specialty ink in excess of the VOC content limit in Table 3, and shall not use more than 2 gallons of specialty inks in a calendar day and 120 gallons of specialty inks in a calendar year.

Table 3 VOC Content Limits for Flexographic Specialty Ink		
Material	Grams of VOC per liter (lb/gal), less water and less exempt compounds, effective through December 31, 2009	Grams of VOC per liter (lb/gal), less water and less exempt compounds, as applied, effective on and after January 1, 2010
Metallic Ink	485 (4.1)	460 (3.8)
Matte Finish Ink	535 (4.5)	535 (4.5)
Metallic Ink and Matte Finish Ink on Flexible Package Printing	--	383 (3.2)

5.2.2 On and after January 1, 2009, facilities with the potential to emit or with actual emissions of at least 10 tons VOC in any calendar year shall not use specialty inks with VOC content greater than 300 grams VOC per liter, less water and exempt compounds.

5.3 Coldset Web Offset Lithographic Fountain Solution

On and after January 1, 2010, an operator performing coldset web offset lithographic printing shall use fountain solution with that is five percent alcohol substitute or less by weight and shall have no alcohol in the fountain solution.

5.4 Screen Printing Operation

An operator using a screen printing operation shall not use graphic arts materials in excess of the VOC content limits in Table 4.

Table 4 VOC Content Limits for Screen Printing Inks, Coatings, and Adhesives	
Material	Grams of VOC per liter (lb/gal), less water and less exempt compounds
Inks and Coatings	400 (3.3)
Adhesives	150 (1.25)
Resists	600 (5.0)

5.5 Paper, Film, Foil, or Fabric Coating Operation

5.5.1 An operator using a paper, film, foil, or fabric coating operation shall not use any coating or wash primer in excess of the VOC content limits, as applied, in Table 5.

Table 5
VOC Content Limits of Paper, Film, Foil, or Fabric Coating and Wash Primer

Material	VOC Content Limit. Effective through December 31, 2009	VOC Content Limit. Effective on and after January 1, 2010
Coating	265 gm/liter (2.2 lb/gal) of coating, less water and exempt compounds	265 gm/liter (2.2 lb/gal) of coating, less water and exempt compounds
Wash Primer	265 gm/liter (2.2 lb/gal) of material	265 gm/liter (2.2 lb/gal) of material
Plastisols	---	20 gm/liter (0.16 lb/gal)

5.5.2 On and after January 1, 2010, an operator performing pressure sensitive tape and label surface coating operations shall not use any VOC content materials or combinations of materials that exceed a VOC content of either 0.20 kg of VOC/kg of solids (0.20 lb VOC/lb of solids), as applied, or an additional limit of 0.067 kg VOC/kg of coating (0.067 lb of VOC/lb of coating) as applied.

5.6 Approved VOC Emission Control System

5.6.1 Heatset Web Offset Lithographic or Letterpress

On and after January 1, 2010, an operator performing heatset web offset lithographic or letterpress printing that has greater than 25 tpy potential to emit prior to controls shall use an add-on control device, on the dryers, as follows:

5.6.1.1 Heatset web offset lithographic or letterpress printer control device installed prior to December 31, 2008 shall have an overall capture control efficiency of 90%.

5.6.1.2 Heatset web offset lithographic or letterpress printer control device installed after December 31, 2008 shall have an overall capture control efficiency of 95%.

5.6.2 In lieu of compliance with Sections 5.1, 5.2, 5.3, 5.4, 5.5, 5.7, or 5.8 an operator may use a VOC emission control system. The VOC emission control system must meet all of the following requirements:

5.6.2.1 The VOC emission control system shall be approved, in writing, by the APCO.

5.6.2.2 During continuous operation, not to exceed 24 hours, the VOC emission control system shall have a minimum overall VOC capture and control efficiency as specified in Table 6, in accordance with the corresponding effective date;

Table 6
VOC Emission Control System Overall Capture and Control Efficiency

Process	Overall VOC capture and control efficiency % by weight, effective through December 31, 2009	Overall VOC capture and control efficiency % by weight, effective on and after January 1, 2010
Flexible Package Printing (All Technologies)	67%	80%
Publication Gravure	75%	85%
Other Printing Operations	67%	75%
Paper, Film, Foil, or Fabric Coating Operations	86%	90%

5.6.2.3 The collection system shall vent all drying oven exhaust to the control device and shall have one or more inlets for collection of fugitive emissions; and

5.6.2.4 The VOC emission control system shall reduce VOC emissions, at all times, to a level that is not greater than the emissions which would have been achieved through the use of compliant materials, compliant equipment or compliant work practices in Sections 5.1, 5.2, 5.3, 5.4, 5.5, 5.7, or 5.8.

5.7 Coating Application Equipment

No operator shall apply coatings unless coatings are applied with equipment operated according to manufacturer's specifications, and only by the use of one of the following types of coating application equipment:

5.7.1 Flow coater,

5.7.2 Roll coater,

5.7.3 Dip coater,

5.7.4 Foam coater,

5.7.5 Die coater,

5.7.6 Hand application methods, or

5.7.7 High-volume, low- pressure (HVLP) spray for air dried coatings

5.7.7.1 For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.7.7.2 A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in section 3.0.

5.7.8 Other coating application methods which are demonstrated to the APCO to be capable of achieving at least 65 percent transfer efficiency as determined in accordance with Section 6.4. Prior written approval from the APCO shall be obtained for each alternative method used.

5.7.9 In lieu of complying with Sections 5.6.1 through 5.6.8, an operator may control emissions from the coating application equipment with a VOC emission control system that meets the requirements of Section ~~5.5~~ 5.6.

5.8 Organic Solvent Cleaning

5.8.1 An operator shall not use organic solvents for cleaning operations that exceed the VOC content limits specified in Table 7 in accordance with the corresponding effective date.

Table 7
VOC Content Limits for Solvent Cleaning

Type of Solvent Cleaning Operation	VOC Content Limit Grams of VOC/liter of material (lb/gal), effective through December 31, 2009	VOC Content Limit Grams of VOC/liter of material (lb/gal), effective on and after January 1, 2010
A. Product Cleaning During Manufacturing Process; or Surface Preparation for Coating, Ink, or Adhesive Application	25 (0.21)	25 (0.21)
B. Repair and Maintenance Cleaning	25 (0.21)	25 (0.21)
C. Cleaning of Coating or Adhesive Application Equipment	25 (0.21)	25 (0.21)
D. Cleaning of Ink Application Equipment		
1. General	25 (0.21)	25 (0.21)
2. Flexographic Printing	25 (0.21)	25 (0.21)
3. Specialty Flexographic Printing	100 (0.83)	100 (0.83)
4. Gravure Printing		
4.1 Publication	100 (0.83)	100 (0.83)
4.2 Packaging	25 (0.21)	25 (0.21)
5. Lithographic (Offset) or Letterpress Printing		
5.1 Roller Wash – Step 1	500 (4.2)	100 (0.83)
5.2 Roller Wash – Step 2; Roller Wash – not specified; Blanket Wash, and On-Press Components	500 (4.2)	100 (0.83)
5.3 Removable Press Components	25 (0.21)	25 (0.21)
6. Screen Printing	500 (4.2)	100 (0.83)
7. Ultraviolet Ink/Electron Beam Ink Application Equipment (except screen printing)	650 (5.4)	100 (0.83)

5.8.2 An operator performing the following cleaning operations from Table 7 outside of an APCO-approved VOC emission control system and using solvent with VOC content greater than 25 g/L shall meet the requirements of Sections 5.8.3 through 5.8.5 in addition to meeting the applicable VOC content limits of Table 7.

5.8.3 Solvent Cleaning Methods

Cleaning activities that use solvents with VOC content greater than 25 grams per liter of material shall be performed by one or more of the following methods:

5.8.3.1 Wipe cleaning; or

5.8.3.2 Application of solvent from hand-held spray bottles from which solvents are dispensed without a propellant-induced force; or

5.8.3.3 Non-atomized solvent flow method in which 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

5.8.3.4 Solvent flushing method in which the cleaning solvent is discharged into a container that 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.

5.8.4 Solvent shall not be atomized into the open air unless it is vented to a VOC emission control system that complies with Section 5.5. This provision shall not apply to printing operations where the roller or blanket wash is applied automatically and the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with spray bottles or containers described in Section 5.8.3.2.

5.8.5 An operator shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use.

5.8.6 In lieu of complying with the VOC content limits of Table 7 or the provisions of Sections 5.8.3 through 5.8.5, an operator may control emissions from cleaning operations with an APCO-approved VOC emission control system that meets the requirements of Section 5.5.

5.9 Organic Solvent Disposal and Storage

An operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials, coatings, adhesives, catalysts, thinners, and ink in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

5.10 Work Practices

An operator shall properly use and properly operate all graphic arts printing technologies as directed and/or specified by the manufacturer of the printer or graphic arts material.

6.0 Administrative Requirements

6.1 Recordkeeping

An operator subject to the provisions of this rule, including stationary sources exempt pursuant to Sections 4.1 shall maintain the following records on-site for a minimum of five years, and make records available to the APCO, ARB, and EPA upon request:

6.1.1 Materials List

Maintain a current file documenting coatings, inks, adhesives, fountain solutions, wash primers, and solvents in use and in storage. The file shall include a material safety data sheet (MSDS) or product data sheet showing the material name, manufacturer's name, VOC content as applied, specific mixing instructions, and density.

6.1.2 Compliant Materials Records

If only compliant materials in Sections 5.1, 5.2, 5.3, 5.4, 5.5, or Table ~~5~~7 are used to comply with the rule:

6.1.2.1 Record, on a monthly basis, the type and amount of all inks used according to one of the following methods:

6.1.2.1.1 Group the quantity of all inks used and identify the maximum VOC content and use the minimum density of 1010 gm/liter (8.44 lb/gal); or

6.1.2.1.2 Report process inks and pantone inks separately and use specific VOC content and density value for each process ink, and the highest VOC content and the minimum density of 1010 gm/liter (8.44 lb/gal) for pantone inks; or

6.1.2.1.3 Report process inks and pantone inks separately and use the maximum VOC content and minimum-density value for both process and pantone inks, or use the density of 1010 gm/liter (8.44 lb/gal) for pantone inks; or

6.1.2.1.4 Itemize each ink and pantone ink and use the specific VOC content and density value for each.

6.1.2.2 Record, on a monthly basis, the type and amount of each coating, adhesive, wash primer, and solvent (including cleaning solvent) used.

6.1.2.3 Record, on a monthly basis, the type, amount, and percent VOC by volume of fountain solution used.

6.1.3 Noncompliant Materials Records

If noncompliant materials are used, and compliance with the rule is achieved through Section 5.6, the operator shall record, on a daily basis, the type and amount of all inks, coatings, adhesives, fountain solutions, wash primers, and solvents (including non-compliant cleaning solvent) used.

6.1.4 Records for Flexographic Specialty Inks

If flexographic specialty inks are used pursuant to Section 5.2, record, on a daily basis, the type and amount of each specialty ink used.

6.1.5 VOC Emission Control System Records

An operator using a VOC emission control system pursuant to Section 5.6 as a means of complying with this rule shall maintain daily records of key system operating parameters to demonstrate continuous operation and compliance of the VOC emission control system during periods of emission-producing activities.

6.1.6 Digital Printing Records

6.1.6.1 On and after January 1, 2010, operators shall keep records, in accordance with Section 6.1.6.2, for each digital printer that:

6.1.6.1.1 Uses solvent-based inks and has a print capacity of 1,000 ft^2/hr or more, or

6.1.6.1.2 Uses water-based inks, or UV inks and has a print capacity of 10,000 ft^2/hr or more,

6.1.6.2 Operators with printers Subject to Section 6.1.6.1 shall keep the following records:

6.1.6.2.1 A current file of inks, coatings, adhesives, and solvents in use and in storage. The file shall include a MSDS or product data sheet showing the material name, manufacturer's name, VOC content as applied, specific mixing instructions, and density.

6.1.6.2.2 Monthly records of the type, and amount of each ink, coating, and/or adhesive used.

6.1.6.2.3 Monthly records of the type, and amount of solvent used for thinning the ink, coating, or adhesive, and for cleaning.

6.2 Compliance Statement

The manufacturer of inks, coatings, adhesives, fountain solutions, wash primers, and solvents which are sold for use in graphic arts printing operations, and paper, film, and foil or fabric coating operations within the District shall include a designation in the MSDS or product data sheet to include the material name, manufacturer's name, specific mixing instruction, VOC content, and density.

6.3 Determination of VOC Emissions from Inks Used in a Lithographic Printing Operation

For the purposes of determining compliance with emissions limits, and determining eligibility for exemption under Section 4.1 of this rule, the amount of VOC emitted from heatset and non-heatset inks used shall be discounted by the following substrate retention factors: 20 percent for heatset inks and 95 percent for non-heatset inks. These substrate retention factors shall not be used when determining compliance of inks with applicable VOC content limits specified in this rule, and heatset and non-heatset lithographic inks shall meet the VOC content limits specified in Section 5.1, Table 1.

6.4 Test Methods

The VOC content of materials subject to the provisions of this rule and overall capture and control efficiency of VOC emission control systems shall be determined by the following test methods specified in Sections 6.4.1 through 6.4.9, or alternative test methods approved by the APCO, EPA, and ARB.

6.4.1 Except for UV inks, the VOC content of printing inks, adhesives, fountain solutions, solvents and coatings shall be determined by using EPA Method 24 or 24A as applicable. The VOC content of UV inks, except for thin film UV inks, shall be determined by using ASTM D5403-93 (2007) (Test Methods for Volatile Content of Radiation Curable Materials).

6.4.2 Exempt Compound Content: Exempt compound content shall be determined by using ARB Method 432, “Determination of Dichloromethane and 1,1,1-Trichlorethane in Paints and Coatings,” September 12, 1989; ARB Method 422 “Determination of Volatile Organic Compounds in Emission from Stationary Sources,” January 22, 1987; or, SCAQMD Method 303-91 “Determination of Exempt Compounds,” August 1, 1996.

6.4.3 The content of silicon dioxide as a flattening agent in a matte finish ink shall be determined by using the latest EPA approved revision of ASTM D717-86 (Standard Test Methods for Analysis of Magnesium Silicate Pigment).

6.4.4 The metal content of metallic inks shall be determined by SCAQMD Test Method 318, (Determination of Weight Percent Elemental Metal In Coatings by X-Ray Diffraction).

6.4.5 Determination of emissions of VOC from spray gun cleaning systems shall be made using SCAQMD method "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," October 3, 1989.

6.4.6 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.

6.4.7 Determination of Overall Capture and Control Efficiency of VOC Emission Control Systems

6.4.7.1 The capture efficiency of a VOC emission control system’s collection device(s) shall be determined according to EPA’s “Guidelines for Determining Capture Efficiency,” January 9, 1995 and 40 CFR 51, Appendix M, Test Methods 204-204F, as applicable.

6.4.7.2 The control efficiency of a VOC emission control system’s VOC control device(s) shall be determined using EPA Test Methods 2, 2A, or 2D for measuring flow rates and EPA Test Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device(s). EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.4.7.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{Capture\ and\ Control} = [\ CE_{Capture}\ x\ CE_{Control}\ ] / 100$$

Where:

$CE_{Capture\ and\ Control}$ = Overall Capture and Control Efficiency, in percent

$CE_{Capture}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.4.8.1.

$CE_{Control}$ = Control Efficiency of the control device, in percent, as determined in Section 6.4.8.2.

6.4.7.4 The following equation shall be used to determine if the minimum required overall capture and control efficiency of an emission control system is at an equivalent or greater level of VOC reduction as would be achieved using compliant materials, equipment, or work practices, as stated in Section 5.6.2.4.

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

Where:

CE = Minimum Required Overall Capture and Control Efficiency, percent

VOC_{LWc} = VOC Limit, less water and less exempt compounds

$VOC_{LWn,Max}$ = Maximum VOC content of noncompliant ink (or coating or adhesive) 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 noncompliant ink (or coating or adhesive), containing the maximum VOC content of the multi-component ink (or coating, or adhesive) printing line

D_c = Density of corresponding solvent, reducer, or thinner used in the compliant ink (or coating, or adhesive) system = 880 gm/liter.

7.0 Compliance Schedule

The operator who becomes subject to the emission limits/standards of this rule through loss of exemption in Section 4.0 shall not operate the subject equipment, except as required for obtaining a new or modified Permit-to-Operate, until the operator demonstrates that the operation is in full compliance with the requirements of this rule.

RULE 4610 GLASS COATING OPERATIONS (Adopted May 16, 2002; Amended December 19, 2002; Amended April 17, 2003)

1.0 Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from the coating of glass products.

2.0 Applicability

The requirements of this rule shall apply to any major source that coats glass products with VOC-containing materials.

3.0 Definitions

3.1 Aerosol Coating Product: any 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.

3.2 Clear Coating: a colorless coating, which contains binders, but no pigment, and is formulated to form transparent film.

3.3 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.4 Coating Application Equipment: 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.

3.5 Curtain/Flow Coater: 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.

3.6 Dip Coater: 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.

3.7 Electric Dissipating Coating: a coating that rapidly dissipates a high-voltage electric charge.

3.8 Electrostatic Application: a method of applying coating whereby atomized paint droplets are charged and subsequently deposited on the substrate by electrostatic attraction.

3.9 Grams Of VOC Per Liter Of Coating, Less Water and Less Exempt Compounds: a weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

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

Where:

Ws = weight of volatile compounds in grams
Ww = weight of water in grams
Wec = weight of exempt compounds in grams
Vm = volume of material in liters
Vw = volume of water in liters
Vec = volume of exempt compounds in liters

3.10 Hand Application Methods: any method 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.

3.11 High-Volume, Low-Pressure (HVLP) Spray: a coating application system which is operated at air pressure between 0.1 and 10.0 pounds per square inch gauge (psig).

3.12 Ink: a fluid that contains dyes and/or colorants, and is used to make markings but not to protect surfaces.

3.13 Major Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.14 Metallic Coating: a coating, which contains more than 5 grams of metal particles per liter of coating as applied.

3.15 Metal Particles: any pieces of a pure elemental metal or a combination of elemental metals.

3.16 Mirror Backing: a coating applied over the silvered surface of a mirror.

3.17 One-component Coating: 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.

3.18 Optical Coating: a coating applied to an optical lens.

3.19 Permanent Total Enclosure (PTE): a permanently installed enclosure that completely surrounds a source of emissions such that all VOC emissions are captured and contained for discharge to a control device.

3.20 Repair Coating: a coating used to re-coat portions of a previously coated product, which has sustained mechanical damage to the coating following normal coating operations.

3.21 Roll Coater: 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.

3.22 Shock-Free Coating: 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.

3.23 Stencil Coating: an ink or a coating which is rolled or brushed onto a template or stamp in order to add identifying letters and/or numbers.

3.24 Touch-up Coating: a coating used to cover minor imperfections appearing after the main coating operation.

3.25 Translucent Coating: a coating, which contains binders and pigment, and is formulated to form a colored, but not opaque, film.

3.26 Two-component Coating: a coating requiring the addition of a separate reactive resin, commonly known as a catalyst, before application to form an acceptable dry film.

3.27 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

4.0 Exemptions

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

4.1 Touch-up and repair coatings;

4.2 Stencil coatings applied on clear or transparent substrates;

4.3 Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings; and

4.4 Aerosol coating products.

5.0 Requirements

5.1 VOC Content Limits for Coatings

A person shall not apply on glass any coating, which exceeds the VOC content limit specified below:

COATING	VOC CONTENT LIMITS Less Water and Less Exempt Compounds Effective on and after 12/1/2002	
	g/L	lb/gal
General Coatings		
One-component	275	2.3
Two-component	420	3.5
Mirror Backing		
Curtain Coated	500	4.2
Roll Coated	430	3.6
Other Coatings		
Optical Coatings	800	6.7
Electric Dissipating Coatings and Shock-Free Coatings	360	3.0
Metallic Coatings	420	3.5

5.2 Prohibition of Specification

A person shall not specify the use, in the District, of any coating to be applied to any 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 or oral contracts.

5.3 Solvent Cleaning, Storage, and Disposal

Solvent cleaning operations and the storage and disposal of VOC-containing materials are subject to the provisions of Rule 4663 (Organic Solvent Cleaning, Storage and Disposal).

5.4 Application Equipment Requirements

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:

5.4.1 electrostatic application; or

5.4.2 curtain/flow coater; or

5.4.3 roll coater; or

5.4.4 dip coater; or

5.4.5 hand application methods; or

5.4.6 high-volume, low-pressure (HVLP) spray.

5.5 VOC Emission Control Equipment

5.5.1 Except for mirror backing operations, a person may comply with the provisions in Sections 5.1 and 5.4 by using an APCO approved VOC emission control equipment, provided that the owner/operator demonstrates compliance with the following provisions:

5.5.1.1 The emission collection system has a capture efficiency of at least 90 percent of the VOC emissions generated by the sources of emissions and the control device reduces VOC emissions from the emission collection system by at least 95 percent, or

5.5.1.2 The VOC emission reduction system meets the requirements of Section 5.5.2.1 and Section 5.5.2.2.

5.5.2 VOC Emission Reductions – Mirror Backing Operations

In addition to the applicable requirements of Section 5.1, effective on and after July 1, 2004, a person performing mirror backing operations shall comply with the following requirements:

5.5.2.1 Reduce VOC emissions from operations such that emissions do not exceed 10 percent of the emissions which would result from compliance with Section 5.1 requirements, and

5.5.2.2 The VOC emission reduction system is approved by the APCO.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 Any person subject to the requirements of Section 5.0 of this rule shall maintain records which show on a daily basis, the following information:

6.1.1.1 type of coating;

6.1.1.2 the VOC content of each coating, as applied, less water and

exempt compounds;

6.1.1.3 the specific mixing ratio for the coating, hardeners, catalysts, solvents, diluents, and thinners, if applicable;

6.1.1.4 the method of application and substrate type;

6.1.1.5 oven temperature (for coating operations), if applicable, and

6.1.1.6 other information, as specified by the APCO, necessary to verify compliance with the applicable requirements of this rule.

6.1.2 Records of disposed waste solvent or waste solvent residues shall be kept in accordance with Rule 4663.

6.1.3 Records shall be maintained on-site for a minimum of five years and made available for inspection to the APCO upon request.

6.1.4 Any person using an add-on emission control system shall maintain daily records of key system operating parameters and maintenance procedures which will demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. Key system operating parameters are those necessary to ensure compliance with the emission reduction, capture efficiency, control efficiency and overall capture and control efficiency requirements of this rule. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

6.2 Test Methods

6.2.1 Determination of VOC Content

The VOC content of materials subject to the provisions of this rule shall be determined by the following United States Environmental Protection Agency (EPA) Test Methods or any other method approved by EPA, the California Air Resources Board (ARB), and the APCO:

6.2.1.1 EPA 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).

6.2.1.2 Exempt compounds' VOC content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

6.2.2 Determination of Capture Efficiency of an Emission Control System

The capture efficiency of an emission collection control system shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable, noted below or any other method approved by EPA, ARB, and the APCO:

6.2.2.1 EPA Method 204A (VOCs in Liquid Input Stream),

6.2.2.2 EPA Method 204B (VOCs in Captured Stream),

6.2.2.3 EPA Method 204C (VOCs in Captured Stream Dilution Technique),

6.2.2.4 EPA Method 204D (Fugitive VOCs from Temporary Total Enclosure),

6.2.2.5 EPA Method 204E (Fugitive VOCs from Building Enclosure),

6.2.2.6 EPA Method 204F (VOCs in Liquid Input Stream Distillation), and

6.2.2.7 EPA Method 204 (Criteria For And Verification Of A Permanent or Temporary Total Enclosure).

6.2.3 Determination of Control Efficiency of Emission Control System

The efficiency of the control device of an emission control system shall be determined by using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Test Method 25, or 25A for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Test Method 18 or ARB Method 422 shall be used to determine emissions of exempt compounds.

6.2.4 Determination of Overall Capture and Control Efficiency of Emission Control System

The overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{CAPTURE\ AND\ CONTROL} = [\ CE_{CAPTURE} \times CE_{CONTROL}\ ] / 100\ \%$$

Where:

$CE_{CAPTURE\ AND\ CONTROL}$ = Overall Capture and Control Efficiency, in percent

$CE_{CAPTURE}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.2.2

$CE_{CONTROL}$ = Control Efficiency of the control device, in percent, as determined in Section 6.2.3.

6.2.5 Multiple Test Methods

VOC emissions, VOC content, capture efficiency, control efficiency, and overall capture and control efficiency determined to exceed any limits established by this rule through the use of any of the above-referenced test methods or equations shall constitute a violation of the rule.

6.3 VOC Emission Control Equipment – Testing Requirements

The collection and control devices of an emission control system shall comply with the following testing requirements:

6.3.1 A collection device that is not a PTE shall be source tested on an annual basis to determine the collection efficiency of the collection device.

6.3.2 A collection device that is a PTE shall be source tested initially to validate that it meets the requirements of a PTE pursuant to EPA Method 204.

6.3.3 A control device shall be source tested on an annual basis to determine the control efficiency of the control device.

RULE 4612 MOTOR VEHICLE AND MOBILE EQUIPMENT COATING OPERATIONS

(Adopted September 21, 2006; Amended September 20, 2007; Amended October 21, 2010)

1.0 Purpose

The purpose of this rule is to limit volatile organic compound (VOC) emissions from coatings of motor vehicles, mobile equipment, and associated parts and components, and associated organic solvent cleaning, storage, and disposal.

2.0 Applicability

This rule is applicable to any person who supplies, sells, offers for sale, manufactures, or distributes any automotive coating for use within the District, as well as any person who uses, applies, or solicits the use or application of any automotive coating within the District.

3.0 Definitions

3.1 Adhesion Promoter: a coating, which is labeled and formulated to be applied to uncoated plastic surfaces to facilitate bonding of subsequent coatings, and on which, a subsequent coating is applied.

3.2 Aerosol Coating Product: a hand-held, non-refillable, disposable pressurized spray system that dispenses product ingredients by means of a propellant-induced force.

3.3 APCO: as defined in Rule 1020 (Definitions).

3.4 ARB: California Air Resources Board.

3.5 Assembly Line: an arrangement of industrial equipment and workers in which the product passes, by either automatic or manual means, from one specialized operation to another until complete.

3.6 ASTM: American Society for Testing and Materials.

3.7 Associated Parts and Components: structures, devices, pieces, modules, sections, assemblies, subassemblies, or elements of motor vehicles or mobile equipment that are designed to be a part of motor vehicles or mobile equipment but which are not attached to motor vehicles or mobile equipment, at the time of coating the structure, device, piece, module, section, assembly, subassembly, or element. Associated parts and components do not include circuit boards.

3.8 Automotive Coating: a coating or coating component used or recommended for use in motor vehicle or mobile equipment refinishing, service, maintenance, repair, restoration, or modification, except metal plating activities. Any reference to automotive refinishing or automotive coating made by a person on the container or in product literature constitutes a recommendation for use in motor vehicle and mobile equipment refinishing.

3.9 Automotive Coating Component: a portion of a coating, including, but not limited to, a reducer or thinner, toner, hardener, and additive, which is recommended the manufacturer for use in an automotive coating, or which is supplied for or used in an automotive coating. The raw materials used to produce the components are not considered automotive coating components.

3.10 Automotive Refinishing Facility: a shop, business, location, or parcel of land where motor vehicles or mobile equipment or their associated parts and components are coated, including autobody collisions repair shops. Automotive refinishing facility does not include the original equipment manufacturing plant where the motor vehicle or mobile equipment is completely assembled.

3.11 CFR: Code of Federal Regulations.

3.12 Cleaning Operations: the removal of loosely held uncured adhesives, inks, coatings, or contaminants, including, but not limited to, dirt, soil, or grease from motor vehicles, mobile equipment, associated parts and components, substrates, parts, products, tools, machinery, equipment, or general work areas.

3.13 Clear Coating: a coating that contains no pigments and is labeled and formulated for application over a color coating or clear coating.

3.14 Coating: a material which is applied to a surface and forms a film in order to beautify, preserve, repair, or protect such a surface.

3.15 Color Coating: a pigmented coating, excluding adhesion promoters, primers, and multi-color coatings, that requires a subsequent clear coating and which is applied over a primer, adhesion promoter, or color coating. Color coatings include metallic/iridescent color coatings.

3.16 Electrostatic Spray Application: a method of spray application of coatings where an electrostatic attraction is created between the part to be coated and the paint particles.

3.17 Emission Control System: a combination of capture systems and control devices used to reduce VOC) emissions from automotive coating operations.

3.18 EPA: United States Environmental Protection Agency.

3.19 Exempt Compounds: an organic compound not classified as a VOC, as listed in the definition of volatile organic compound in Rule 1020 (Definitions).

3.20 Graphic Arts Operation: the application of logos, letters, numbers, or graphics to a painted surface by brush, roller, or airbrush.

3.21 High-Volume, Low-Pressure (HVLP): spray equipment permanently labeled as such and which is designed and 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.

3.22 Metallic/Iridescent Color Coating: a 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.

3.23 Mobile Equipment: a device that may be drawn and/or driven on rails or a road way including, but not limited to, trains, railcars, truck trailers, mobile cranes, bulldozers, street cleaners, and implements of husbandry or agriculture.

3.24 Motor Vehicle: a self-propelled vehicle, including, but not limited to, cars, trucks, buses, golf carts, vans, motorcycles, tanks, and armored personnel carriers.

3.25 Multi-Color Coating: a coating that exhibits more than one color in the dried film after a single application, is packaged in a single container, hides surface defects on areas of heavy use, and is applied over a primer or adhesion promoter.

3.26 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.27 Operator: includes but is not limited to any person who owns, leases, supervises, or operates a facility and/or equipment.

3.28 Permanently Labeled: equipment labeled by the manufacturer such that the operator cannot alter it. Permanent labeling is in the form of an engraving or a plate permanently attached to the equipment.

3.29 Person: as defined in the California Health and Safety Code Section 39047.

3.30 Pretreatment Coating: a coating, that contains a minimum of one-half (0.5) percent acid by weight and not more that 16 percent solids by weight, necessary to provide surface etching and is labeled and formulated for application directly to bare metal surfaces to provide corrosion resistance and adhesion.

3.31 Primer: coating, which is labeled and formulated for application to a substrate to provide a bond between the substrate and subsequent coats, corrosion resistance, a smooth substrate surface, or resistance to penetration of subsequent coats, and on which a subsequent coating is applied. Primers may be pigmented.

3.32 Primer Sealer: a coating which is labeled and formulated for application prior to the application of a color coating for the purpose of color uniformity, or to promote the ability of the underlying coating to resist penetration by the color coating.

3.33 San Joaquin Valley Air Basin (SJVAB): as defined in Rule 1020 (Definitions).

3.34 SCAQMD: South Coast Air Quality Management District.

3.35 Single-Stage Coating: a pigmented coating, excluding primers and multi-color coatings, labeled and formulated for application without a subsequent clear coat. Single-stage coatings include single-stage metallic/iridescent coatings.

3.36 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.37 Spot Repair: repair of an area of less than one (1.0) square foot (929 square centimeters) on a motor vehicle, piece of mobile equipment, or associated parts or components.

3.38 Stripping: the use of solvent to remove material such as cured adhesives, cured inks, cured or dried paint, cured or dried paint residue or temporary protective coating.

3.39 Temporary Protective Coating: a coating, which is labeled and formulated for the purpose of temporarily protecting areas from overspray or mechanical damage.

3.40 Transfer Efficiency: the amount of coating solids adhering to the object being coated divided by the total amount of coating solids sprayed, expressed as a percentage.

3.41 Truck Bed Liner Coating: a coating, excluding clear, color, multi-color, and single stage coatings, labeled and formulated for application to a truck bed to protect it from surface abrasion.

3.42 Underbody Coating: a coating 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.

3.43 Uniform Finish Coating: a coating 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.

3.44 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions). For the purpose of this rule, Tertiary Butyl Acetate (TBAc) will not be considered a VOC when used as an automotive coating component.

3.45 VOC Content

3.45.1 VOC Regulatory for Coatings: VOC in grams per liter of coating, excluding water and exempt compounds, and shall be calculated by the following equation:

$$\text{VOC regulatory content} = \frac{Wv - Ww - Wec}{Vm - Vw - Vec}$$

3.45.2 VOC Actual for Coatings: VOC in grams per liter of material, and shall be calculated using the following equation:

$$\text{VOC actual content} = \frac{Wv - Ww - Wec}{Vm}$$

3.45.3 VOC Content for Solvents or Solvent Blends: VOC in grams per liter of material, and shall be calculated using the following equation:

$$\text{VOC content} = \frac{Wv - Ww - Wec}{Vm}$$

Where:
VOC content = amount of volatile organic compounds in gram per liter
Wv = weight of volatiles in grams
Ww = weight of water in grams
Wec = weight of exempt compounds in grams
Vm = volume of material (coating) in liters
Vw = volume of water in liters
Vec = volume of exempt compounds in liters

4.0 Exemptions

4.1 This rule does not apply to:

4.1.1 Automotive coatings that are offered for sale, sold, or manufactured for use outside the SJVAB or for shipment to other manufacturers for reformulation or repackaging.

4.1.2 Aerosol coating products.

4.1.3 Automotive coatings that are sold, supplied, or offered for sale in 0.5 fluid ounce or smaller containers intended to be used by the general public to repair tiny surface imperfections.

4.1.4 Any coating applied to new motor vehicles or mobile equipment, or their associated parts and components, during manufacture on an assembly line pursuant to Rule 4602 (Motor Vehicle Assembly Coatings).

4.2 The provisions of Section 5.8 shall not apply to the stripping of cured coatings, except the stripping of such materials from spray application equipment.

5.0 Requirements

5.1 Coating Limits

No person shall apply to any motor vehicle, mobile equipment, or associated parts and components, any coating with a VOC regulatory content, as calculated pursuant to Section 3.45.1, in excess of the applicable limits in Table 1, except as provided in Section 5.3.

Table 1 - VOC Content Limits for Coatings	
Coating Category	VOC Regulatory Limit, as applied, in grams per liter (pounds per gallon)
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)
Primer Sealer	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 Finish Coating	540 (4.5)
Any other coating type	250 (2.1)

5.2 Most Restrictive VOC Limit

If anywhere on the container of any automotive coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one of the coating categories listed in Section 5.1, then the lowest applicable VOC content limit in Table 1 shall apply.

5.3 VOC Emission Control System

In lieu of complying with the applicable requirements of Section 5.1, 5.7, or 5.8, a person may use a VOC emission control system that meets all of the following requirements:

5.3.1 The VOC emission control system shall be approved, in writing, by the APCO.

5.3.2 The VOC emission control system shall achieve an overall capture and control efficiency of at least 85 percent by weight.

5.3.3 In no case shall compliance through the use of a VOC emission control system result in VOC emissions in excess of the VOC emissions which would result from compliance with applicable requirements of Section 5.1, 5.7, or 5.8.

5.4 Prohibition of Possession

No person shall possess at any automotive refinishing facility, any automotive coating that is not in compliance with Section 5.1 or 5.3, as applicable.

5.5 Prohibition of Sale or Manufacture

5.5.1 No person shall manufacture, blend, repackage for sale, supply, sell, offer for sale, or distribute within the SJVAB any coating with a VOC content in excess of the limits specified in Section 5.1.

5.5.2 Notwithstanding the provisions of Section 5.5.1, a person may manufacture, blend, repackage for sale, supply, sell, offer for sale, or distribute a coating with a VOC content in excess of the limits specified in Section 5.1 under one of the following circumstances and provided all of the requirements of Section 6.7 are also met:

5.5.2.1 The coating is for use exclusively within a VOC emission control system as allowed in Section 5.3, or

5.5.2.2 The coating is for use outside the SJVAB.

5.6 Prohibition of Specification

No person shall solicit, require the use of, or specify the application or use of any coating on a motor vehicle, mobile equipment, or associated parts and components, if such use or application results in a violation of this rule. This prohibition shall apply to all written or oral contracts, including, but not limited to, job orders, under the terms of which any coating that is subject to the provisions of this rule is to be used or applied. This prohibition shall not apply to coatings that meet the criteria specified in Section 5.5.

5.7 Coating Application Methods

Except for underbody coatings, graphic arts operations, truck bed liner coatings, or any coating use of less than one (1.0) fluid ounce (29.6 milliliters), no person shall apply any coating to any motor vehicle, mobile equipment, or associated parts and components unless one of the following application methods is used:

5.7.1 Brush, dip, or roller.

5.7.2 Electrostatic spray.

5.7.3 High-Volume Low-Pressure (HVLP) spray equipment.

5.7.3.1 HVLP spray equipment shall be operated in accordance with the manufacturer's recommendations.

5.7.3.2 A person shall not sell or offer for sale for use within the SJVAB any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Section 3.0.

5.7.4 Use of a spray gun not permanently marked HVLP. If a spray gun is used, the operator must demonstrate that the gun meets the HVLP definition in Section 3.21 in design and use. A satisfactory demonstration must be based on the manufacturer's published technical material on the design of the gun and by a demonstration of the operation of the gun using an air pressure tip gauge designed specifically for the gun in use.

5.7.5 Any other coating application method that is capable of achieving at least 65 percent transfer efficiency, as determined per Section 6.8.8. Written approval from the APCO shall be obtained for each alternative method prior to use.

5.7.6 In lieu of complying with the applicable provisions of Sections 5.7.1 through 5.7.5, an operator may control VOC emissions from coating application with a VOC emission control system that meets the requirements of Section 5.3 around the coating operation.

5.8 Organic Solvent Cleaning Requirements

5.8.1 For solvent cleaning operations other than for bug and tar removal, a person shall not use solvents that have VOC content greater than 25 grams VOC per liter of cleaning material, as calculated using the equation listed in Section 3.45.3.

5.8.2 For bug and tar removal, a person shall not use any material other than bug and tar remover regulated under the Consumer Products Regulation (California Code of Regulations Section 94507 et seq.).

5.8.3 In lieu of complying with Sections 5.8.1 and 5.8.2, a person may control VOC emissions from solvent cleaning with an APCO-approved VOC emission control system for the solvent cleaning operation that meets the requirements of Section 5.3.

5.9 Organic Solvent Disposal and Storage

A person shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc., coatings, adhesives, catalysts, and thinners in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

6.0 Administrative Requirements

6.1 Compliance Statement Requirement

6.1.1 For each individual automotive coating or automotive coating component, the manufacturer and repackager shall include the following information on product data sheets, or an equivalent medium:

6.1.1.1 The VOC Actual for Coatings and VOC Regulatory for Coatings, expressed in grams per liter, calculated pursuant to Section 3.45;

6.1.1.2 The weight percentage of volatiles, water, and exempt compounds;

6.1.1.3 The volume percentage of water and exempt compounds; and

6.1.1.4 The density of the material (in grams per liter).

6.1.2 For each individual ready to spray mixture (based on the manufacturer's and repackager's stated mix ratio), the manufacturer and repackager shall include the following information on product data sheets, or an equivalent medium:

6.1.2.1 The VOC Actual for Coatings and VOC Regulatory for Coatings, expressed in grams per liter, calculated pursuant to Section 3.45;

6.1.2.2 The weight percentage of volatiles, water, and exempt compounds;

6.1.2.3 The volume percentage of water and exempt compounds; and

6.1.2.4 The density of the material (in grams per liter).

6.2 Labeling Requirements

The manufacturer and repackager of automotive coatings or automotive coating components shall include on all containers the applicable use category(ies), and the VOC Actual for Coatings and VOC Regulatory for Coatings, as supplied, expressed in grams per liter.

6.3 Maintenance of Records

Records required by this rule shall be retained on site for a period of five years, the records shall be made available on site to the APCO, ARB, or EPA, and the records shall be submitted to the APCO, ARB, or EPA upon request.

6.4 Recordkeeping Requirements for Coatings

Any person who uses coatings subject to this rule shall maintain records on a daily basis, and have available at all times, on site, the following:

6.4.1 A current list of all coatings used that are subject to this rule. This list shall include the following information for each coating:

6.4.1.1 Material name and manufacturer;

6.4.1.2 Application method;

6.4.1.3 Coating type (as listed in Section 5.1) and mix ratio specific to the coating;

6.4.1.4 VOC Actual for Coatings and VOC Regulatory for Coatings, as applied, calculated pursuant to Section 3.45; and

6.4.1.5 Quantity of each type of coating used.

6.4.2 Current manufacturer specification sheets, material safety data sheets, technical data sheets, or air quality data sheets, which list the VOC Actual for Coatings and VOC Regulatory for Coatings of each ready-to-spray coating (based on the manufacturer's state mix ratio) and automotive coating components.

6.4.3 Purchase records identifying the coating type (as listed in Section 5.1), name, and volume of coatings.

6.5 Recordkeeping Requirements for Solvents Used for Solvent Cleaning

An operator using solvents for cleaning shall keep the following records.

6.5.1 Keep a copy of the manufacturer's product data sheet or material safety data sheet of the solvents used for organic solvent cleaning activities.

6.5.2 Maintain a current list of solvents that are being used for organic solvent cleaning activities. The list shall include the following information:

6.5.2.1 The name of the solvent and its manufacturer's name.

6.5.2.2 The VOC content of the solvent expressed in grams per liter or lb/gallon.

6.5.2.3 When the solvent is a mixture of different materials that are blended by the person, the mix ratio of the batch shall be recorded and the VOC content of the batch shall be calculated and recorded in order to determine compliance with the specified limits of VOC content.

6.5.3 The quantity of solvent used for solvent cleaning activities.

6.6 VOC Emission Control System Records

An operator using a VOC emission control system pursuant to Section 5.3 as a means of complying with this rule 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 Section 5.3, including but not limited to, temperatures, pressure drops, and airflow rates.

6.7 Recordkeeping Requirements for Prohibition of Sale

Any person claiming an exemption specified in Section 5.5.2 shall keep a detailed log of each automotive coating component and automotive coating manufactured, blended, repackaged for sale, supplied, sold, offered for sale, or distributed showing:

6.7.1 The quantity manufactured, blended, repackaged for sale, supplied, sold, offered for sale, or distributed, including size and number of containers;

6.7.2 The VOC Regulatory for Coatings;

6.7.3 The VOC Actual for Coatings;

6.7.4 To whom they were supplied, sold, offered for sale, or distributed, or for whom they were manufactured, blended, or repackaged for sale including the name, address, phone number, retail tax license number, and valid District permit number, if applicable; and

6.7.5 The specific exemption being utilized under Section 5.5.2.

6.8 Test Methods

The following test methods are incorporated by reference herein, and shall be used to test coatings subject to the provision of this rule. A source is in violation of this rule if any measurement by any of the listed applicable test methods exceeds the standards of this rule.

6.8.1 Acid Content: Measurement of acid content (as specified in Section 3.30) shall be determined by using American Standards for Testing and Materials (ASTM) D1613-03 "Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates used in Paint, Varnish, Lacquer, and Related Products," October 2003.

6.8.2 Alternative Test Methods: The use of other test methods which are determined to be equivalent or better and approved, in writing, by the APCO, ARB, and EPA may be used in place of the test methods specified in this rule.

6.8.3 Determination of Overall Capture and Control Efficiency of VOC Emission Control Systems

6.8.3.1 The capture efficiency of a VOC emission control system's VOC collection device shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable, or any other method approved by EPA, ARB, and the APCO.

6.8.3.2 The control efficiency of a VOC emission control system's VOC control device shall be determined using the following test methods:

6.8.3.2.1 EPA Methods 2, 2A, or 2D for measuring flow rates.

6.8.3.2.2 EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device.

6.8.3.2.3 EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.8.3.2.4 For VOC emission control systems serving coating operations using TBAc-containing coatings, the TBAc emissions shall be determined in accordance with Section 6.8.7.

6.8.3.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{Capture\ and\ Control} = [\ CE_{Capture} \times CE_{Control}\ ] / 100$$

Where:

$CE_{Capture\ and\ Control}$ = Overall Capture and Control Efficiency, in percent

$CE_{Capture}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.8.3.1

$CE_{Control}$ = Control Efficiency of the control device, in percent, as determined in Section 6.8.3.2.

6.8.4 Exempt Compound Content: Exempt compound content shall be determined by using ARB Method 432, "Determination of Dichloromethane and 1,1,1-Trichlorethane in Paints and Coatings," September 12, 1998; ARB Method 422 "Determination of Volatile Organic Compounds in Emission from Stationary Sources," January 22, 1987; or, SCAQMD Method 303-91 "Determination of Exempt Compounds," February 1993. The Tertiary Butyl Acetate (TBAc) content in a coating shall be determined in accordance with Section 6.8.7. TBAc is considered an exempt compound for the purposes of complying with Table 1 of this rule.

6.8.5 HVLP Equivalency: Spray equipment HVLP equivalency (as specified in Section 5.7.4), shall be determined by using SCAQMD "Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray Guns," September 26, 2002.

6.8.6 Metallic Content: The metallic content of a coating (as specified in Section 3.22) shall be determined by SCAQMD Method 318-95, "Determination of Weight Percent Elemental Metal in Coatings by X-ray," July 1996.

6.8.7 Methyl Acetate, Acetone, Tertiary Butyl Acetate (TBAc), and PCBTF Content: The quantity of methyl acetate, acetone, Tertiary Butyl Acetate (TBAc), and parachloro-benzotrifluoride, (as specified in Sections 3.19, 3.44, and 3.45), shall be determined by using ASTM Method D6133-02 "Standard Test Method for Acetone, p-Chlorobenzotrifluoride, Methyl Acetate or t-Butyl Acetate Content of Solventborne and Waterborne Paints, Coatings, Resins, and Raw Materials by Direct Injection Into a Gas Chromatograph," February 2003.

6.8.8 Transfer Efficiency: Spray equipment transfer efficiency (as specified in Section 3.40 and 5.7.5) shall be determined by using SCAQMD Method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User," May 24, 1989.

6.8.9 VOC Content of Coatings: VOC content, (as specified in Sections 3.45, and 5.1), shall be determined by EPA Method 24 as set forth in Title 40, Part 60, Appendix A, "Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings."

6.8.10 VOC Content of Solvents: VOC content shall be determined by EPA Method 24 or 24A (Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings), as applicable. The VOC content of materials containing 50 g/l of VOC or less shall be determined by SCAQMD Method 313 (Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry).

6.9 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.

6.10 Version of Test Methods

All ASTM test methods referenced in Section 6.8 are the most recently EPA-approved version that appears in the CFR as Materials Approved for Incorporation by Reference.

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RULE 4621 GASOLINE TRANSFER INTO STATIONARY STORAGE CONTAINERS, DELIVERY VESSELS, AND BULK PLANTS (Adopted April 11, 1991; Amended September 19, 1991; Amended December 17, 1992; Amended May 20, 1993; Amended June 18; 1998; Amended December 20, 2007; Amended December 19, 2013)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from stationary storage containers, delivery vessels, and bulk plants and to provide the administrative requirements for determining compliance with this rule.

2.0 Applicability

This rule applies to storage containers located at bulk plants with capacities greater than 250 gallons and less than 19,800 gallons; to other stationary storage containers with capacities greater than 250 gallons; and to those storage containers that are not subject to the control requirements of Rule 4623 (Storage of Organic Liquids) Section 5.0. The rule also applies to gasoline delivery vessels.

3.0 Definitions

3.1 APCO: as defined in Rule 1020 (Definitions).

3.2 ARB: California Air Resources Board.

3.3 ARB Certified: a vapor recovery system, equipment, or any component thereof, for which the ARB has evaluated its performance and issued a valid Executive Order pursuant to California Health and Safety Code Section 41954. Each component of a system that is a separate ARB certified item cannot be replaced with a non-certified item or other items that are not certified for use with the particular system. Except for qualified repairs, an ARB certified component shall be as supplied by the qualified manufacturer. A rebuilt component shall not be deemed as ARB certified unless the person who rebuilds the component is authorized by ARB to rebuild the designated ARB certified component.

3.4 ARB Certified Phase I Vapor Recovery System: a vapor recovery system that has been certified by ARB pursuant to Section 41954 of the California Health and Safety Code.

3.5 Aviation Gasoline: gasoline used as fuel for aircraft that cannot be legally used as fuel for motor vehicles.

3.6 Background: the ambient concentration of organic compounds determined at least two (2) meters upwind from any component to be inspected and which is uninfluenced by any specific emission permit unit.

3.7 Bulk Plant: any loading rack and associated unloading racks, storage containers and vapor recovery system(s) used to load less than 20,000 gallons of gasoline in any one day, to delivery vessels.

3.8 Business Day: a weekday, including Monday, Tuesday, Wednesday, Thursday, or Friday.

3.9 Component: includes, but is not limited to, any valve, fitting, threaded connection, pump, pressure relief device, pipe, flange, hatch, sight-glass, meter, or seal of a fluid system in VOC service.

3.10 Delivery Vessel: any cargo container having a volumetric capacity in excess of 120 gallons that is used for the transportation of gasoline or aviation gasoline. This term includes pumps, meters, valves, fittings, piping, and other appurtenances attached to a gasoline storage container on a vehicle and used in connection with the gasoline/aviation gasoline being transported. Containers used exclusively for aviation gasoline in agricultural operations, with an annual throughput of 1,000 gallons or less, will not be considered delivery vessels for the purpose of this rule.

3.11 Emergency: a fire, flood, earthquake, or other similar catastrophe.

3.12 EPA: United States Environmental Protection Agency.

3.13 Excess Organic Liquid Drainage: more than 10 milliliters liquid drainage which is not contained by an ARB certified spill container. Such liquid drainage for disconnect operations shall be determined by computing the average drainage from three consecutive disconnects at any one loading arm.

3.14 Gasoline: any petroleum distillate, petroleum distillate/alcohol blend or alcohol having a Reid vapor pressure of four (4) pounds per square inch absolute or greater, which is used as a motor vehicle fuel, or any fuel which is commonly or commercially known or sold as gasoline, including aviation gasoline.

3.15 Gasoline Vapors: VOCs in the displaced vapors of gasoline, including any entrained liquids.

3.16 Highway: a way or place of whatever nature, publicly maintained and open to the use of the public for purposes of vehicular travel. Highway includes street.

3.17 ICC: International Code Council.

3.18 Implement of Husbandry: a vehicle that is used primarily in the conduct of agricultural operations pursuant to Section 36000 of the California Vehicle Code.

3.19 Leak: one of the following –

3.19.1 For delivery vessels, the dripping of VOC-containing liquid at a rate of more than three (3) drops per minute, or a reading of greater than 100 percent of the lower explosive limit (21,000 ppm measured as equivalent propane) when measured in accordance with the test method in Section 6.4.3.

3.19.2 For all other operations, the dripping of VOC-containing liquid at a rate of more than three (3) drops per minute, or the detection of any gaseous or vapor emissions with a concentration of total organic compound greater than 10,000 ppmv, as methane, above background when measured in accordance with the test method in Section 6.4.2. Any liquid or gas coming from a component undergoing repair or replacement, or during sampling of process fluid from a component or equipment into a container is not considered sampling of a leak, provided such activities are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

3.20 Leak-free: a condition without a leak, as defined above.

3.21 Loading Operation: any aggregate or combination of gasoline loading and vapor control equipment from the connection at the inlet of the gasoline pump to and including the hose end connector at the portable delivery tanks and the discharge of the vapor control device(s).

3.22 Loading Rack: as defined in Rule 1020 (Definitions).

3.23 Major Modification: one of the following –

3.23.1 The addition, replacement, or removal of an underground storage container, or a modification that causes the container top to be unburied, is considered a major modification, or

3.23.2 The replacement of an aboveground storage container. The installation of an aboveground storage container after retrofitting with standing loss controls or the exchange of an aboveground storage container for a standing loss control retrofitted aboveground storage container of equal capacity to comply with the requirements of CP-206 is not a major modification.

3.24 Mobile Fueler: any gasoline delivery vessel with an attached container that is used to transport and dispense gasoline from an onboard storage container into any motor vehicle fuel tank.

3.25 Motor Vehicle: a vehicle that is self propelled.

3.26 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.27 Operator: any person that owns, leases, or operates a facility that dispenses or transfers gasoline or that owns, leases, or operates a delivery vessel that dispenses or transfers gasoline.

3.28 Portable Hydrocarbon Detection Instrument: a hand-held hydrocarbon analyzer that meets the criteria specified in US EPA Method 21, 40 CFR Part 60. The instrument shall be calibrated with methane.

3.29 Pressure Vacuum Relief Valve: a valve that is installed on the gasoline storage container or the vent pipes of gasoline storage containers to relieve pressure or vacuum build-up at preset values of pressure or vacuum.

3.30 Retail Gasoline Outlet: any establishment at which gasoline is sold or offered for sale to the general public for use in motor vehicles.

3.31 Submerged Fill Pipe: any fill pipe, the discharge opening of which is entirely submerged when the liquid level is six (6) inches above the bottom of the container. "Submerged fill pipe" when applied to a container which is loaded from the side is defined as any fill pipe the discharge opening of which is entirely submerged when the liquid level is 18 inches above the bottom of the container.

3.32 Switch Loading: the transfer of diesel fuel into a delivery vessel or storage container with a capacity over 250 gallons which previously contained gasoline.

3.33 Vehicle: a device by which any person or property may be propelled, moved, or drawn upon a highway, excepting a device moved exclusively by human power or used exclusively upon stationary rails or tracks.

3.34 VOC: as defined in Rule 1020 (Definitions).

4.0 Exemptions

Except for the provisions of Section 6.1.1, the requirements of this rule shall not apply to the following operations:

4.1 The transfer of gasoline into any stationary storage container with a capacity of 550 gallons or less used primarily for the fueling of implements of husbandry, if such container is equipped with a permanent submerged fill pipe.

4.2 The transfer of gasoline into any stationary storage container having a capacity of 2,000 gallons or less which was installed prior to July 1, 1975, if such container is equipped with a permanent submerged fill pipe, and provided no major modification is made on the container.

4.3 The transfer of gasoline into any stationary storage container in existence prior to July 1, 1975, which is equipped with an offset fill pipe if such container is equipped with a permanent submerged fill pipe, and provided no major modification is made on the container.

4.4 Mobile fuelers used exclusively for fueling emergency motor vehicles while on location at an emergency.

5.0. Requirements

5.1 Loading equipment and vapor collection equipment shall be installed, maintained, and operated such that it is leak-free, with no excess organic liquid drainage at disconnect.

5.2 Gasoline Storage and Loading

5.2.1 In addition to the requirements of Section 5.1 no person shall transfer or permit the transfer of gasoline from any delivery vessel into any stationary storage container subject to requirements of this rule unless:

5.2.1.1 Such container, except those used for aviation gasoline, is equipped with an ARB certified permanent submerged fill pipe and utilizes an ARB certified Phase I vapor recovery system that is maintained and operated according to manufacturer specifications and the applicable ARB Executive Order; or

5.2.1.2 Containers used for aviation gasoline are equipped with a permanent submerged fill pipe and a Phase I vapor recovery system that is certified (or was previously certified) to meet a minimum volumetric control of 95%.

5.2.2 Any vent pipe on a stationary gasoline storage container shall be equipped with a pressure-vacuum relief valve in accordance with the requirements set forth in Sections 5.3 and 5.4, as applicable.

5.2.3 Vent pipes may be manifolded, as per the applicable ARB Executive Order, to a single pressure-vacuum relief valve. The pressure-vacuum relief valve shall be properly installed and maintained according to manufacturer specifications and the applicable ARB Executive Order.

5.2.4 Operators shall have all underground storage container installations and all underground piping configurations inspected by the APCO prior to backfilling. The operator shall notify the District by telephone or other District-approved method and obtain a confirmation number at least three business days prior to the backfilling.

5.3 Underground Storage Containers

5.3.1 Unless otherwise specified in the applicable ARB Executive Order, for an underground storage container that contains gasoline and is located at a bulk plant, the container shall be equipped with an ARB certified pressure-vacuum relief valve set at 3.0 ± 0.5 inches water column pressure relief and 8.0 ± 2.0 inches water column vacuum relief.

5.3.2 Unless otherwise specified in the applicable ARB Executive Order, for an underground storage container that contains aviation gasoline and is located at a bulk plant, the container shall be equipped with a pressure-vacuum relief valve set at 3.0 ± 0.5 inches water column pressure relief and 8.0 ± 2.0 inches water column vacuum relief.

5.3.3 For an underground storage container that contains gasoline and is not located at a bulk plant, the container shall be equipped with an ARB certified Phase I vapor recovery system that is certified to have a minimum volumetric control efficiency of 98%.

5.3.4 For an underground storage container that contains aviation gasoline and is not located at a bulk plant, the container shall be equipped with a permanent submerged fill pipe and a Phase I vapor recovery system that is certified (or was previously certified) to meet a minimum volumetric control of 95%.

5.3.5 Operators of underground storage containers not located at bulk plants shall conduct and pass the applicable performance tests specified in Sections 6.4.4 through 6.4.7 to determine compliance at least once every 36 months, (no more than 30 days before or after the required

performance test date) unless otherwise required under ARB Executive Order or Rule 4622 (Gasoline Transfer into Motor Vehicle Fuel Tanks).

5.4 Aboveground Storage Containers

5.4.1 All aboveground storage containers shall be constructed and maintained in a leak-free condition.

5.4.2 All aboveground storage containers that contain gasoline shall be equipped with an ARB certified pressure vacuum relief valve set 3.0 ± 0.5 inches water column pressure relief and 8.0 ± 2.0 inches water column vacuum relief, unless:

5.4.2.1 Otherwise specified in the applicable ARB Executive Order, or

5.4.2.2 Such setting will exceed the vessel's maximum pressure rating.

5.4.3 All aboveground storage containers that contain aviation gasoline shall be equipped with pressure relief valves set at eight (8) ounces per square inch, unless:

5.4.3.1 Otherwise specified in the applicable ARB Executive Order or

5.4.3.2 Such setting will exceed the vessel's maximum pressure rating.

5.4.4 Operators of an aboveground storage container not located at a bulk plant shall conduct and pass the performance test specified in Section 6.4.8 to determine compliance at least once every 36 months, (no more than 30 days before or after the required performance test date) unless otherwise required under ARB Executive Order.

5.5 All Phase I vapor recovery systems shall be inspected according to the frequency specified in Table 1. The person conducting the inspections shall, at a minimum, verify the following:

5.5.1 That the fill caps and vapor caps are not missing, damaged, or loose;

5.5.2 That the fill cap gasket and vapor cap gaskets are not missing or damaged;

5.5.3 That the fill adapter and vapor adapter are securely attached to the risers;

5.5.4 That, where applicable, the spring-loaded submerged fill tube seals properly against the coaxial tubing, and the dry break (poppet-valve) is not missing or damaged; and

5.5.5 That the submerged fill tube is not missing or damaged.

Table 1 – Schedule of Maintenance Inspection

Gasoline dispensed by the operation during largest monthly throughput of previous year	Frequency of Inspections
A. Retail Gasoline Outlets	
1. Less than 25,000 gallons	One day per week
2. 25,000 gallons or greater	Five days per week
B. Non-Retail Gasoline Outlets and other gasoline dispensing operations	
1. Less than 2,500 gallons	One day per month
2. 2,500 to less than 25,000 gallons	One day per week
3. 25,000 gallons or greater	Five days per week

5.6 Bulk Plants and Loading Racks at Bulk Plants

5.6.1 All bulk plants shall meet one of the following requirements:

5.6.1.1 Bulk plants not involved with aviation gasoline loading shall be equipped with an ARB certified vapor recovery system for loading operations (loading rack).

5.6.1.2 Bulk plants involved with aviation gasoline loading shall be equipped with a vapor recovery system that meets a minimum volumetric control of 90% when measured in accordance with the test method specified in Section 6.4.9.

5.6.2 The loading rack vapor recovery system shall not create a back pressure in excess of the pressure limits of the delivery vessel certification leak test (18 inches water column).

5.6.3 Operators shall store or dispose of gasoline in closed, non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

5.6.4 Bulk Plant Leak Inspections

5.6.4.1 All bulk plants shall be constructed and maintained in a leak-free condition.

5.6.4.2 All bulk plants shall be inspected for leaks at least once in every six-month period (from four to eight months apart) in accordance with the test procedure specified in Section 6.4.2.

5.6.4.3 All loading racks located at bulk plants shall be inspected for leaks during product transfer at the frequency required in Section 5.6.4.2.

5.6.4.4 If any storage container, storage container component, or loading rack component is found to leak during an inspection, the inspection frequency shall be changed to quarterly until the unit has successfully passed five consecutive quarterly inspections. Thereafter, the quarterly inspection may revert to the applicable inspection frequency specified in Section 5.6.4.2.

5.6.5 Bulk Plant Leak Repair

5.6.5.1 Upon detection of a leaking component, the operator shall affix to that component a weatherproof readily visible tag with the date and time of leak detection, the date and time of leak measurement, and for gas leaks, the leak concentration in ppmv.

5.6.5.2 The tag shall remain affixed to the component until all the conditions specified in Sections 5.6.5.3 and 5.6.5.4 have been met.

5.6.5.3 All leaking components shall be repaired or replaced within seven (7) business days after the leak is detected. If the component cannot be repaired within seven (7) business days, the operator must remove the leaking component(s) from VOC service.

5.6.5.4 Upon returning a leaking component to service, the following conditions must be met.

5.6.5.4.1 The component must be re-inspected using the test method specified in Section 6.4.2; and

5.6.5.4.2 The component must be found to be in compliance with the requirements of this rule.

5.7 Delivery Vessels

5.7.1 All delivery vessels shall have an ARB certified vapor recovery system for cargo containers. Cargo container vapor recovery systems shall be maintained and tested in accordance with manufacturer specifications and any applicable ARB Executive Orders.

5.7.2 No person shall operate, or allow the operation of a delivery vessel unless valid State of California decals which attest to the vapor integrity of the container are displayed.

5.7.3 No person shall store gasoline in, otherwise use, or operate any gasoline delivery vessel unless such vessel is designed and maintained to be leak-free. Any delivery vessel into which gasoline vapors have been transferred shall be filled only from loading racks or other delivery vessels that are equipped with an ARB certified vapor recovery system.

5.7.4 The hatch on a delivery vessel shall be equipped with a leak-free cover and the hatch shall not be opened for visual inspection unless at least three minutes have elapsed since loading or unloading has stopped. The dome hatch, once opened, shall not be held open longer than three minutes, except as directed by local, state, or federal agencies having jurisdiction.

5.7.5 Gasoline vapors shall not be purged into the atmosphere. This includes relieving container pressure by manually "popping" the poppet valve on the truck-mounted vapor return line.

5.7.6 Switch loading shall not be conducted unless such transfer is made using a permanently installed ARB certified vapor recovery system.

5.7.7 During loading of the delivery vessel, the truck-mounted vapor return line shall be connected to a vapor recovery system that meets the requirements of this rule for the vapor recovery systems.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 All data necessary to demonstrate qualifications for the exemptions allowed in this rule shall be maintained on the premises at all times and shall be submitted for District, ARB, or EPA review upon request. Such records shall include exemption status and volume delivered to each stationary storage container serviced.

6.1.2 Bulk Plants and Loading Racks: A record of all inspections and all actions conducted on any part of the storage container or loading racks shall be maintained in chronological order showing date of inspection, description and location of any equipment replaced, and a description of the problem which required repair.

6.1.3 All bulk plants shall maintain daily gasoline throughput records.

6.1.4 All records required to demonstrate compliance with the requirements of this rule shall be retained on the premises for a minimum of five (5) years and made available on site during normal business hours to the APCO, ARB, or EPA, and submitted to the APCO, ARB, or EPA upon request.

6.2 Testing Requirements

6.2.1 Operators shall conduct all performance tests required by ARB Executive Order and facility installation and operations manual as per the frequency outline therein or as designated by the APCO.

6.2.2 Each ARB certified Phase I vapor recovery system shall be performance tested within 60 days of completion of installation or modification.

6.2.3 Bulk plants involved with aviation gasoline loading subject to Section 5.6.1.2 shall be performance tested within 60 days of completion of installation or modification.

6.2.4 Operators shall notify the District at least seven (7) days prior to any performance testing.

6.2.5 Operators shall submit all performance test results to the District within 30 days of test completion.

6.3 Certification Requirements

6.3.1 Installation and maintenance contractors shall:

6.3.1.1 Be certified by the ICC for Vapor Recovery System Installation and Repair (VI) and make available onsite proof of ICC certification for VI, and

6.3.1.2 Have and make available on site proof of any and all certifications required by the applicable ARB Executive Order and installation and operation manual in order to install or maintain specific systems, or

6.3.1.3 Work under the direct and personal supervision of an individual physically present at the work site who possesses and makes available onsite a current certificate from the ICC, indicating he or she has passed the VI exam and all certifications required by the applicable ARB Executive Order.

6.3.2 All ICC certifications shall be renewed every 24 months by passing the appropriate exam specific to the certification being sought.

6.3.3 Gasoline Dispensing Facility Testers wishing to conduct vapor recovery system testing and repair at facilities located within the District, shall be in full compliance with District Rule 1177 (Gasoline Dispensing Facility Tester Certification).

6.4 Test Methods

6.4.1 The Reid Vapor Pressure of gasoline shall be determined in accordance with ASTM D 5191-01.

6.4.2 Measurements of leak concentrations, excepting delivery vessels, shall be conducted according to EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane.

6.4.2.1 The instrument shall be calibrated in accordance with the procedures specified in EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use.

6.4.2.2 The operator shall record the calibration date of the instrument.

6.4.3 Measurements of leak concentrations for delivery vessels shall be conducted according to the ARB Test Procedure for Determination of Leaks, TP-204.3.

6.4.4 Static Leak Test for Underground Tanks: ARB Test Procedure TP-201.3.

6.4.5 Static Torque of Rotatable Phase I Adaptors: ARB Test Procedure TP 201.1B.

6.4.6 Leak Rate of Drop Tube/Drain Valve Assembly: ARB Test Procedure TP 201.1C.

6.4.7 Leak Rate of Drop Tube Overfill Protection Devices and Spill Container Drain Valves: ARB Test Procedure TP 201.1D.

6.4.8 Static Leak Test for Aboveground Tanks: ARB Test Procedure TP-206.3 or ARB Test Procedure TP-201.3B as applicable.

6.4.9 Determination of Emission Factor of Vapor Recovery Systems of Bulk Plants: ARB Test Procedure TP-202.1.

6.5 Versions of Test Methods

All test procedures shall be conducted in accordance with the latest version of the test procedures, or their equivalents as approved in writing by the APCO and EPA.

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RULE 4622 GASOLINE TRANSFER INTO MOTOR VEHICLE FUEL TANKS (Adopted May 21, 1992; Amended November 18, 1992; Amended December 17, 1992; Amended February 17, 1994; Amended June 18, 1998; Amended September 19, 2002; Amended December 20, 2007; Amended December 19, 2013)

1.0 Purpose

The purpose of this rule is to limit emissions of gasoline vapors from the transfer of gasoline into motor vehicle fuel tanks.

2.0 Applicability

This rule applies to any gasoline storage and dispensing operation or mobile fueler from which gasoline is transferred into motor vehicle fuel tanks, except as provided in Section 4.0.

3.0 Definitions

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

3.1 APCO: as defined in Rule 1020 (Definitions).

3.2 ARB: California Air Resources Board.

3.3 ARB Certified: a vapor recovery system, equipment, or any component thereof, for which the ARB has evaluated its performance and issued a valid Executive Order pursuant to California Health and Safety Code Section 41954. Each component of a system that is a separate ARB certified item cannot be replaced with a non-certified item or other items that are not certified for use with the particular system. Except for qualified repairs, an ARB certified component shall be as supplied by the qualified manufacturer. A rebuilt component shall not be deemed as ARB certified unless the person who rebuilds the component is authorized by ARB to rebuild the designated ARB certified component.

3.4 ASTM: American Society for Testing and Materials.

3.5 Background: the ambient concentration of organic compounds determined at least two (2) meters upwind from any component to be inspected and which is uninfluenced by any specific emission permit unit.

3.6 Business Day: any weekday, including Monday, Tuesday, Wednesday, Thursday, and Friday.

3.7 Component: includes, but is not limited to, any valve, latch, fitting, pressure relief device, hose, nozzle, dispenser, or module in VOC service.

3.8 E85 Fuel: A blend of 85 percent ethanol and 15 percent gasoline, having a Reid vapor pressure of four (4) pounds per square inch absolute or greater, which is used as a motor vehicle fuel.

3.9 Emergency: a fire, flood, earthquake, or other similar catastrophe.

3.10 EPA: United States Environmental Protection Agency.

3.11 Existing Storage Container: a gasoline storage container which was in existence on or before May 21, 1992.

3.12 Gasoline: any petroleum distillate, or petroleum distillate/alcohol blend or alcohol having a Reid vapor pressure of four (4) pounds per square inch absolute or greater, which is used as a motor vehicle fuel, or any fuel which is commonly or commercially known or sold as gasoline.

3.13 Gasoline Storage and Dispensing Operation: an aggregate of one or more stationary storage containers, any of which is subject to the provisions of Rule 4621 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants) and this rule together with dispensers and control equipment required by the rules.

3.14 Gasoline Vapors: the organic compounds in the displaced vapors including any entrained liquid gasoline.

3.15 Highway: a way or place of whatever nature, publicly maintained and open to the use of the public for purposes of vehicular travel. Highway includes street.

3.16 Hold-Open Latch: the integral component of a gasoline dispensing nozzle which permits the nozzle to remain open without a sustained effort on the part of the refueler.

3.17 ICC: The International Code Council.

3.18 In-Station Diagnostics (ISD): equipment that provides continuous real-time monitoring of critical emission-related vapor recovery system parameters and components, and alerts the station operator when a failure mode is detected so that corrective action is taken.

3.19 IOM Manual: Installation, Operation, and Maintenance Manual.

3.20 Leak: the dripping of VOC-containing liquid at a rate of more than three (3) drops per minute, or the detection of any gaseous or vapor emissions with a concentration or total organic compound greater than 10,000 ppmv, as methane, above background when measured in accordance with the test method in Section 6.5.4. Any liquid or gas coming from a component undergoing repair or replacement, or during sampling of process fluid from a component or equipment into a container is not considered sampling of a leak provided such activities are accomplished as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

3.21 Liquid Condensate Trap (knock-out pot, thief port): a device designed to collect liquid that condenses in the vapor return line in a manner that allows it to be evacuated and ensures that the vapor return line will not be blocked by the accumulation of liquid.

3.22 Major Defect: any defect that meets the criteria of California Code of Regulations, Title 17, Division III, Chapter 1, Subchapter 8, Article 1, Section 94006 and is listed on ARB's Vapor Recovery Equipment Defects (VRED) list or is specified within the ARB's Executive Order certifying the vapor recovery system, as applicable.

3.23 Major Modification: the addition, replacement, or removal of fifty percent or more of the buried vapor piping, or the replacement of dispensers. The replacement of a dispenser is not a major modification when the replacement is occasioned by end user damage to a dispenser.

3.24 Mobile Fueler: any gasoline delivery vessel with an attached container that is used to transport and dispense gasoline from an onboard storage container into any motor vehicle fuel tank.

3.25 Motor Vehicle: a vehicle that is self propelled.

3.26 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.27 Phase II Vapor Recovery System: a vapor recovery system that controls vapors during the transfer of gasoline from the gasoline dispensing operation to the vehicle and storage of gasoline at the gasoline dispensing operation.

3.28 Portable Hydrocarbon Detection Instrument: a hand-held hydrocarbon analyzer that meets the criteria specified in US EPA Method 21, 40 CFR Part 60. The instrument shall be calibrated with methane.

3.29 Retail Gasoline Outlet: an establishment at which gasoline is sold or offered for sale to the general public for use in motor vehicles.

3.30 Topping Off: to attempt to dispense gasoline to a motor vehicle fuel tank after a vapor recovery dispensing nozzle has shut off automatically. The filling of a vehicle tank which can be filled only after the seal between the fill pipe and the nozzle is broken, due to the nature and configuration of the fill pipe which causes premature shut-off of the dispensing nozzle, shall not be considered topping off.

3.31 Vehicle: a device by which any person or property may be propelled, moved, or drawn upon a highway, excepting a device moved exclusively by human power or used exclusively upon stationary rails or tracks.

3.32 Vehicle Fleet: a group of vehicles operated under the control of a single owner/operator.

4.0 Exemptions

4.1 Except for the provisions of Section 6.1.1 and 6.1.2, requirements of this rule shall not apply to the transfer of gasoline into motor vehicle fuel tanks from any existing storage container, as defined in Section 3.11, with an aggregate dispensing operation throughput of:

4.1.1 less than or equal to 24,000 gallons per calendar year; and

4.1.2 less than or equal to 10,000 gallons in any consecutive 30-day period.

4.1.3 Any facility which exceeds the throughput limitations under Section 4.1.1 or 4.1.2 shall be subject to all provisions of this rule on and after the date the throughput limitations were exceeded and shall be in compliance according to the schedule in Section 7.1.

4.2 The requirements of this rule shall not apply to gasoline storage containers that are exempt pursuant to Section 4.0 of Rule 4621 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants).

4.3 Except for Section 6.1.3 and 7.2, the requirements of this rule shall not apply to vehicle fleets where 100 percent of the vehicles are equipped with onboard refueling vapor recovery (ORVR) systems. To qualify for this exemption, the operator must also own the gasoline dispensing operation that services the vehicle fleet.

4.4 The requirements of this rule shall not apply to a mobile fueler that exclusively fuels aircraft.

4.5 The requirements of Section 6.4.1 shall not apply to mobile fuelers registered under Permit-Exempt Equipment Registration program pursuant to Section 5.11.

4.6 The requirements of this rule shall not apply to E85 fuel dispensing operations.

5.0 Requirements

5.1 A person shall not transfer or permit the transfer of gasoline from any stationary storage container, or from any mobile fueler with a capacity greater than 120 gallons, into a motor vehicle fuel tank with a capacity greater than 5 gallons, unless the gasoline dispensing unit used to transfer the gasoline is equipped with and has in operation an ARB certified Phase II vapor recovery system.

5.1.1 All ARB certified Phase II vapor recovery systems shall be maintained according to ARB certifications and the manufacturer specifications applicable to the system.

5.1.2 All ARB certified Phase II vapor recovery systems and gasoline dispensing equipment shall be maintained without leaks as determined in accordance with the test method in Section 6.5.4.

5.2 Installation

5.2.1 Any gasoline dispensing system subject to this rule shall comply with the provisions of this rule at the time of installation.

5.2.2 Operators shall have all underground storage container installations and all underground piping configurations inspected by the APCO prior to backfilling. The operator shall notify the District by telephone or other District-approved method and obtain a confirmation number at least three business days prior to the backfilling.

5.2.3 Installation and maintenance contractors shall comply with the following requirements:

5.2.3.1 Be certified by the ICC for Vapor Recovery System Installation and Repair; and

5.2.3.2 Renew the ICC certification for Vapor Recovery System Installation and Repair every 24 months.

5.2.3.3 Make available onsite proof of ICC certification, and

5.2.3.4 Have and make available on site proof of any and all certifications required by the applicable ARB Executive Order and installation and operation manual in order to install or maintain specific systems.

5.2.4 In lieu of complying with Sections 5.2.3.1 through 5.2.3.4, installation and maintenance contractors may work under the direct and personal supervision of an individual physically present at the work site who possesses and makes available on site current certifications from the ICC, indicating the individual has passed the ICC Vapor Recovery System Installation and Repair exam and all other certifications required by the applicable ARB Executive Order.

5.2.5 Notwithstanding any provisions of this rule, any gasoline dispensing operation which has installed and obtained a permit to operate an ARB certified Phase II vapor recovery system shall continue to use such system and shall maintain the system and all of its components in good–repair in order that such system can continue to comply with the certification recovery efficiency.

5.2.6 Any ARB certified Phase II vapor recovery system that has been installed shall not be removed regardless of the amount of gasoline dispensed or how the gasoline is delivered to the operation.

5.2.6.1 This requirement shall not include those operations that are exempt or become exempt per Section 4.3.

5.2.6.2 This requirement shall not preclude the installation of a new ARB certified Phase II vapor recovery system.

5.3 Inspections

5.3.1 The owner or operator of an ARB certified Phase II vapor recovery system shall conduct periodic maintenance inspections to ensure that components of the vapor recovery system are in proper operating condition.

5.3.2 The frequency of inspections shall be based on the operation's largest monthly gasoline throughput from the previous calendar year as indicated in Table 1.

Table 1 – Schedule of Maintenance Inspection

Gasoline Dispensed by the Facility During Largest Monthly Throughput of Previous Year	Frequency of Inspections
A. Retail Gasoline Outlets	
1. Less than 25,000 gallons	One day per week
2. 25,000 gallons or greater	Five days per week
B. Non-Retail Gasoline Outlets And Other Gasoline Dispensing Operations	
1. Less than 2,500 gallons	One day per month
2. 2,500 to less than 25,000 gallons	One day per week
3. 25,000 gallons or greater	Five days per week

5.3.3 The frequency of vapor path inspections shall be based on the amount of gasoline dispensed by the operation in a calendar month as indicated in Table 1.

5.3.4 The person conducting the inspections shall at a minimum, verify the following during inspections:

5.3.4.1 That the fueling instructions required by Section 5.5 are clearly displayed with the appropriate toll-free complaint phone number and toxic warning signs.

5.3.4.2 That the following nozzle components are in place and in good condition as specified in the applicable ARB Executive Orders: faceplate/facecone, bellows, latching device spring, vapor check valve, spout (proper diameter/vapor collection holes), insertion interlock mechanism, automatic shut-off mechanism, hold open latch.

5.3.4.3 That the hoses are not torn or crimped.

5.3.4.4 That the vapor path of coaxial hoses associated with bellows equipped nozzles does not contain more than 100 ml of liquid, or as required by the applicable ARB Executive Order.

5.3.4.4.1 The amount of liquid in the vapor path shall be determined by lowering the gasoline dispensing nozzle into a container, opening the vapor check valve, and allowing the hose to drain until such time that no more liquid drains from the nozzle.

5.3.4.4.2 The amount of liquid drained into the container shall be measured using a graduated cylinder or graduated beaker.

5.3.4.5 That the vapor processing unit is functioning properly, for operations that are required to have or possess such a unit.

5.4 Maintenance and Repair

5.4.1 No person shall operate any ARB certified Phase II vapor recovery system or any portion thereof that has a major defect, until:

5.4.1.1 The defect has been repaired, replaced, or adjusted as necessary to correct the defect;

5.4.1.2 The District has been notified, and the District has reinspected the system or authorized the system for use. Such authorization shall not include the authority to operate the equipment prior to the correction of the defective components; and

5.4.1.3 All major defects, after repair, are duly entered into the Operations and Maintenance (O&M) manual.

5.4.2 Upon identification of any major defect, the owner or operator shall tag "Out-of-Order" all dispensing equipment for which vapor recovery has been impaired.

5.4.2.1 Tagged equipment shall be rendered inoperable and the tag(s) shall not be removed until the defective equipment has been repaired, replaced, or adjusted, as necessary.

5.4.2.2 In the case of defects identified by the District, tagged equipment shall be rendered inoperable, and the tag shall not be removed until the District has been notified of the repairs, and the District has either reinspected the system or authorized the tagged equipment for use.

5.4.3 Breakaway valves, hoses, and nozzles shall be ARB certified.

5.4.4 In the event of a separation due to a drive off, the owner or operator shall complete one of the following, unless otherwise specified in the applicable ARB Executive Order, and document the activities in accordance with Section 6.2, before placing the affected equipment back in service:

5.4.4.1 Conduct a visual inspection of the affected equipment, perform qualified repairs on any damaged components, and conduct applicable reverification tests pursuant to Sections 6.5.1.1, 6.5.1.4 and 6.5.1.5, or

5.4.4.2 Conduct a visual inspection of the affected equipment and replace the affected nozzles, coaxial hoses, breakaway couplings, and any other damaged components with new or certified rebuilt components that are ARB certified, before placing affected equipment back in service.

5.5 No owner or operator of a retail gasoline outlet shall operate or allow the operation of an ARB certified Phase II vapor recovery system unless operating instructions for the system:

5.5.1 Are posted, noticeable, and readable from any place from which gasoline may be dispensed from the operation,

5.5.2 Describe clearly how to fuel vehicles correctly using the station's dispensing nozzles,

5.5.3 Include a warning that topping off may result in spillage or recirculation of gasoline and is prohibited, and

5.5.4 Display prominently the District's or the ARBs toll-free telephone number, or both, and the information that such number or numbers can be used to register complaints regarding the operation of the vapor recovery system.

5.6 No person shall top off a motor vehicle fuel tank.

5.7 Each retail gasoline outlet shall utilize hold-open latches on all gasoline dispensing nozzles.

5.7.1 Any gasoline dispensing nozzle which is installed, repaired, or replaced shall be equipped with a hold-open latch.

5.7.2 The hold-open latch shall be installed on the gasoline dispensing nozzle by the original manufacturer of the nozzle, or if retrofitted, shall be installed using components and procedures approved by the nozzle manufacturer.

5.8 The requirements of Section 5.7 shall not apply to operations where the use of hold-open latches is prohibited by law or the local fire control authority.

5.9 No owner or operator shall tamper with, or permit tampering with, the system in a manner that would impair the operation or effectiveness of the system.

5.10 All liquid removal devices required by ARB Executive Order shall be maintained to achieve a minimum liquid removal rate of five milliliters per gallon. This standard shall apply at dispensing rates exceeding five gallons per minute, unless a higher removal rate is specified in the applicable Executive Order.

5.11 Mobile Fueler Registration Requirements

The owner of a mobile fueler shall register such mobile fueler pursuant to Rule 2250 (Permit-Exempt Equipment Registration), except for a mobile fueler that is not required to comply with Section 5.1 of this rule.

5.12 Liquid Condensate Traps

Liquid condensate traps shall be used, if necessary, to keep the vapor return piping clear of any liquid blockage from the remote dispenser to the aboveground storage tank or when it is not possible to achieve the necessary slope from the dispenser to the underground storage tank.

5.12.1 Liquid condensate traps shall be used only when the minimum slope requirements of 1/8 inches per foot of run cannot be met due to the topography.

5.12.2 When liquid condensate traps are installed on gasoline dispensing systems equipped with an ARB certified Phase II enhanced vapor recovery system, they shall meet the following requirements:

5.12.2.1 Maintained vapor tight;

5.12.2.2 Accessible for inspection upon request;

5.12.2.3 Capable of automatic evacuation of liquid; and

5.12.2.4 Equipped with an alarm system in case of failure of the evacuation system

5.13 In-Station Diagnostics (ISD) System

5.13.1 The owner or operator shall not clear, or allow any other individual to clear, any ISD warning or failure alarms prior to taking appropriate action. The appropriate action shall be in accordance with the IOM manual for the Phase II vapor recovery system or an ARB Enforcement Advisory.

5.13.2 In the event of an ISD failure alarm and subsequent automatic shutdown of gasoline dispensing, the owner or operator shall not re-enable or allow the re-enabling of the affected fueling point(s) unless all troubleshooting, repairs and tests specified in the applicable ARB Executive Order and IOM for the Phase II vapor recovery system, have been successfully completed or are in the process of being completed and documented.

5.13.3 The owner or operator shall keep records of all alarms detected by the ISD system. The records shall include the following:

5.13.3.1 The alarm date;

5.13.3.2 The nature of the alarm;

5.13.3.3 Type of test and test date to verify the validity of ISD alarm;

5.13.3.4 Maintenance or repair date to correct the cause of the alarm;

5.13.3.5 Maintenance or repair performed to correct the cause of the alarm; and

5.13.3.6 Affiliation, telephone number, name and Certified Technician Identification Number of individual conducting maintenance or test.

6.0 Administrative Requirements

6.1 Recordkeeping and Reporting for Exempt Operations:

6.1.1 Gasoline dispensing operations that are exempt under Section 4.1 shall maintain gasoline throughput records which will allow the gasoline throughput for any 30-day period to be continuously determined. These records shall be maintained on the premises as long as exempt status is claimed.

6.1.2 Any gasoline dispensing operation previously exempt under Section 4.1 whose gasoline throughput exceeds the exemption levels in Sections 4.1.1 and 4.1.2 shall notify the District within 30 days of the date of exceeding the exemption levels.

6.1.3 An operator claiming exemption under Section 4.3 shall keep a record of the make, model, model year, and vehicle identification number of all vehicles refueled at the gasoline dispensing operation. These records shall be maintained on the premises for at least five calendar years.

6.2 Recordkeeping and Reporting for Non-exempt Operations

6.2.1 Operators shall retain the test result verification that each ARB certified Phase II vapor recovery system meets or exceeds the requirements of the tests specified in Section 6.5. These verifications shall be maintained for at least five years. These test results shall be dated and shall contain the names, addresses, and telephone numbers of the companies responsible for system installation and testing.

6.2.2 A person who performs repairs on any ARB certified Phase I or Phase II vapor recovery system shall provide to the owner or operator a repair log, which the owner or operator shall maintain on the premises for at least five years and which shall include all of the following:

6.2.2.1 Date and time of each repair;

6.2.2.2 The name and applicable certification numbers of the person(s) who performed the repair, and, if applicable, the name, address and phone number of the person's employer;

6.2.2.3 Description of service performed;

6.2.2.4 Each component that was repaired, serviced, or removed;

6.2.2.5 Each component that was installed as replacement, if applicable;

6.2.2.6 Receipts or other documents for parts used in the repair and, if applicable, work orders which shall include the name and signature of the person responsible for performing the repairs.

6.2.3 Each operator who is required to perform periodic maintenance inspections under Section 5.3 shall maintain monthly gasoline throughput records on the premises for a minimum of five years, make them available on site during normal business hours to the APCO, ARB, or EPA, and submit them to the APCO, ARB, or EPA upon request.

6.3 Recordkeeping Requirements for the Operations & Maintenance Manual (O&M Manual)

6.3.1 The owner or operator of a gasoline dispensing operation shall maintain an O&M Manual in accordance with Section 6.3.

6.3.2 The O&M manual shall be kept at the dispensing operation and made available to any person who operates, inspects, maintains, repairs, or tests the equipment at the operation as well as to District personnel upon request.

6.3.3 The O&M manual shall, at a minimum, include the following current information:

6.3.3.1 Copies of all vapor recovery performance tests,

6.3.3.2 All applicable ARB Executive Orders, Approval Letters, and District Permits,

6.3.3.3 Manufacturer's specifications and instructions for installation, operation, repair, and maintenance required pursuant to applicable ARB Certification Procedures, and any additional instruction provided by the manufacturer,

6.3.3.4 System and/or component testing requirements, including test schedules and passing criteria for each of the standard tests listed in Section 6.0. The owner/operator may include any non-ARB required diagnostic and other tests as part of the testing requirements, and

6.3.3.5 Additional O&M instructions, if any, that are designed to ensure compliance with the applicable rules, regulations, ARB Executive Orders, and District permit conditions, including replacement schedules for failure or wear prone components.

6.3.4 Owners or operators of gasoline dispensing operations shall document the periodic maintenance inspection program in the O&M manual.

6.4 Testing Requirements

6.4.1 Operators shall comply with the ARB certified Phase II vapor recovery system performance tests specified in Sections 6.4.1.1 through 6.4.1.4 and shall conduct all applicable performance tests at start up and thereafter (no more than 30 days before or after the required compliance testing date) as required by the applicable ARB Executive Order and installation and operation manuals.

6.4.1.1 Conduct and pass a Static Leak Test of the ARB certified Phase II vapor recovery system at least once every twelve months.

6.4.1.2 Conduct and pass a Dynamic Back-Pressure Test of the ARB certified Phase II vapor recovery system at least once every five years except for those aboveground storage tanks that have integral dispensers (non-remote), unless otherwise required under the applicable ARB Executive Order.

6.4.1.3 For ARB certified Phase II vapor recovery systems with bellows-less nozzles, conduct and pass, as applicable, an Air-to-Liquid Volume Ratio Test or a Vapor-to-Liquid Ratio Test at least once every six months.

6.4.1.4 For ARB certified Phase II vapor recovery systems with a liquid removal device required by ARB Executive Orders, conduct and pass a Liquid Removal Test whenever the liquid in the vapor path exceeds 100 ml of liquid, or as required by the applicable ARB Executive Order. The amount of liquid in the vapor path shall be determined in accordance with the procedure specified in Section 5.3.4.4.

6.4.2 The person responsible for conducting the tests specified in Section 6.4 shall use calibrated equipment meeting the calibration range and calibration intervals specified by the manufacturer, ARB Executive Order, or ARB test procedure.

6.4.3 Persons responsible for conducting the tests specified in Section 6.5 shall be in full compliance with all provisions of Rule 1177 (Gasoline Dispensing Facility Tester Certification).

6.4.4 Each gasoline dispensing operation shall notify the District at least seven days prior to any performance testing.

6.4.5 Each ARB certified Phase II vapor recovery system shall be tested within 60 days of completion of installation or modification.

6.5 Test Methods

6.5.1 Tests shall be conducted in accordance with the latest version of the following ARB and EPA approved test methods, or their equivalents as approved by the EPA, and the APCO.

6.5.1.1 Static Leak Test for Underground Tanks, ARB TP-201.3

6.5.1.2 Dynamic Back-Pressure Test, ARB TP-201.4

6.5.1.3 Air-to-Liquid Volume Ratio Test, ARB TP-201.5

6.5.1.4 Liquid Removal Test, ARB TP-201.6C

6.5.1.5 Static Leak Test for Aboveground Tanks, ARB TP-206.3 or TP-201.3B as applicable.

6.5.2 Those vapor recovery systems whose ARB Executive Orders specify different tests to be performed instead of, or in addition to, the referenced test methods, or which, by their design, preclude the use of the referenced test methods, shall be tested in accordance with the test procedures specified in the applicable ARB Executive Orders or their equivalents as approved by the APCO and EPA.

6.5.3 The Reid Vapor Pressure of gasoline shall be determined in accordance with ASTM D5191-01.

6.5.4 Detection of leaks shall be in accordance with EPA Test Method 21.

7.0 Compliance Schedule

7.1 Any person who becomes subject to the requirements of this rule through loss of exemption shall comply with the following increments of progress:

7.1.1 Within 30 days of loss of exemption from this rule, a complete application for an Authority to Construct must be submitted.

7.1.2 Construction shall be completed within six (6) months from the issuance date of Authority to Construct. Testing for compliance with this rule shall be completed within six (6) months from issuance date of Authority to Construct or within 60 days of system start-up, whichever is sooner.

7.2 Prior to operating under the exemption in Section 4.3, operators shall modify their Permits to Operate conditions, to allow such operations, pursuant to District Rule 2201 (New and Modified Stationary Sources Review Rule).

7.3 Any person who becomes subject to the requirement of the installation and operation of an ISD system shall comply with the following increments of progress:

7.3.1 Within 30 days of loss of exemption from ISD requirements, a complete application for an Authority to Construct must be submitted.

7.3.2 Construction shall be completed within six (6) months from the issuance date of Authority to Construct. Testing for compliance with this rule shall be completed within six (6) months from issuance date of Authority to Construct or within 60 days of system start-up, whichever is sooner.

RULE 4623 STORAGE OF ORGANIC LIQUIDS (Adopted April 11, 1991; Amended September 19, 1991; Amended December 17, 1992; Amended December 20, 2001; Amended May 19, 2005)

1.0 Purpose

The purpose of this rule is to limit volatile organic compound (VOC) emissions from the storage of organic liquids.

2.0 Applicability

This rule applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored.

3.0 Definitions

3.1 APCO-approved VOC Control System: either an external floating-roof tank complying with Section 5.3 provisions, internal floating-roof tank complying with Section 5.4 provisions, a vapor recovery system complying with Section 5.6 provisions, or pressure vessel as defined in Section 3.24.

3.2 Capacity: the volume of a tank, as shown in the Permit to Operate (PTO), or the tank manufacturer's specifications if a tank does not have a PTO, or as determined by District measurements.

3.3 Clean Produced Water: as defined in Rule 1020 (Definitions).

3.4 Contact Floating Roof: a roof, located inside an internal floating roof tank, that floats on the liquid surface.

3.5 Crude Oil: petroleum extracted from the earth and which has not been processed in a refining operation.

3.6 Deck Fitting: a functional or operational device on a tank floating roof that substantially closes or seals a penetration in the deck of a floating roof.

3.7 Degassing: the process of removing organic vapors from a storage tank.

3.8 Emergency Standby Tank: a tank that does not receive or store an organic liquid for more than 60 cumulative days during any 12-month period.

3.9 External Floating Roof: a tank cover in an open top tank consisting of a pan type, pontoon type, or double-deck type cover that rests upon and is supported by the organic liquid being contained. An external floating roof is equipped with closure seals to close the space between the roof edge and tank shell.

3.10 Fixed Roof Tank: a tank with a roof that is permanently affixed to the shell of the tank.

3.11 Gas Leak: a reading in excess of 10,000 parts per million by volume (ppmv), as methane, above background on a portable hydrocarbon detection instrument that is calibrated with methane in accordance with the test method in Section 6.4.8.

3.12 Gasoline: any petroleum distillate, petroleum distillate/alcohol blend, or alcohol, having a Reid vapor pressure of four (4) psia or greater which is used as motor fuel which is commonly or commercially known or sold as gasoline.

3.13 Gauge Float: a device to indicate the level of the liquid within a tank. The float rests on the liquid surface inside a gauge well in the tank.

3.14 Gauge Hatch/Sample Well (Ports): consists of a pipe sleeve equipped with a self-closing gasketed cover (to reduce evaporative losses) and allows hand-gauging or sampling of the stored liquid. The gauge hatch/sample port is usually located beneath the gauger's platform, which is mounted on top of the tank shell. A cord may be attached to the self-closing gasketed cover so that the cover can be opened from the platform.

3.15 Guidepole: an anti-rotation device that is fixed to the top and bottom of a tank, passing through a well in a floating roof. A guidepole may be solid or be equipped with slots or holes for gauging purposes provided the guidepole is equipped with an appropriate sealing device that prevents openings that expose the stored liquid to the atmosphere.

3.16 Internal Floating Roof: a pan type, pontoon type, or double-deck type cover located inside a fixed roof tank that rests upon and is supported by the organic liquid being contained. An internal floating roof is equipped with closure seals to close the space between the roof edge and tank shell.

3.17 Leak-Free: a condition without a gas leak or a liquid leak.

3.18 Liquid Leak: the dripping of organic liquid at a rate of more than 3 drops per minute.

3.19 Maximum Operating Level: the highest achievable level of fluid within a tank, as determined by the structural design of the tank. In the absence of tank specific design information, the maximum operating level is equal to tank capacity.

3.20 Metallic-Shoe Type (Mechanical Shoe) Seal: a metallic sheet (the shoe) that is held vertically against the vertical tank wall. The shoe is connected by braces to the floating roof and is held tightly against the wall by springs or weighted levers. A flexible coated fabric (envelope) is suspended from the shoe seal to the floating roof

to form a vapor barrier over the annular space between the roof and the primary seal.

3.21 Non-contact Floating Roof: a roof that is located inside an internal floating roof tank that is supported on pontoons several inches above the liquid surface.

3.22 Organic Liquid: any liquid which contains volatile organic compounds (VOCs) including, but not limited to, crude oils and petroleum distillates.

3.23 Petroleum Distillate: the product of a crude oil distillation or condensation process obtained by condensing the vapors for the purpose of purification, fractionation, or the formation of new substances.

3.24 Pressure Vessel: a tank, reservoir, or container that is capable of maintaining working pressures sufficient to prevent organic liquid loss or VOC loss to the atmosphere at all times.

3.25 Resilient-Toroid-Type seal: a core of open-cell foam encapsulated in a coated fabric that is attached to a mounting on the deck perimeter~~,~~ and is continuous around the floating roof circumference.

3.26 Rim Vent: a vent used on tanks equipped with a seal design, such as a mechanical shoe seal, that creates a vapor pocket in the seal and rim area. The vent is used to release excess pressure or vacuum that is present in the vapor space bounded by the primary-seal shoe, the floating roof rim, the primary seal fabric, and the liquid level. A rim vent usually consists of a weighted pallet that rests on a gasketed cover.

3.27 Roof Drain: a drain that permits the removal of rainwater from the surface of external floating roofs. A roof drain may be a closed drainage system that carries rainwater from the surface of the floating roof to the outside of the tank, or an open drainage system consisting of an open pipe that extends a short distance below the bottom of the deck allowing rainwater to drain from the surface of the floating roof into the organic liquid contents of the tank.

3.28 Roof Leg: an adjustable or fixed leg that is attached to the floating roof deck to support or hold the floating roof deck at a predetermined distance off the tank bottom to prevent damage to the fittings located underneath the deck and to allow for tank cleaning or repair. For adjustable legs, the load-carrying element passes through a well or sleeve in the deck.

3.29 Small Producer: an operator in the business of crude oil production who:

3.29.1 Produces an average of less than 6000 barrels per day of crude oil from all operations within the county; and

3.29.2 Does not engage in refining, transportation, or marketing of refined petroleum products.

3.30 Tank: any stationary container, reservoir, or vessel, in which an organic liquid is placed, held, or stored.

3.31 Tank Battery: for crude oil production facilities, a tank battery is an aggregation of two or more tanks where the tanks are located so that no one tank is more than 150 feet from another tank as measured from the closest tank edges, and the tanks are located in the same crude oil production field. For non-crude oil production facilities, a tank battery is an aggregation of two or more tanks located within the same facility, regardless of the distance of the tanks from each other.

3.32 True Vapor Pressure (TVP): the equilibrium partial vapor pressure exerted by an organic liquid at actual storage temperature.

3.33 Uncontrolled Fixed Roof Tank: a fixed roof tank that is not connected to an APCO-approved vapor recovery system operated as specified in Section 5.6.

3.34 Vacuum Breaker: a device that equalizes the pressure of the vapor space across the floating roof deck as the deck is either being landed on or 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 deck approaches. When in contact with the tank bottom, the guide leg mechanically opens the breaker by lifting the cover off the well; otherwise the cover closes the well. Because the purpose of the vacuum breaker is to allow for the free exchange of air and/or vapor, the well does not extend appreciably below the deck.

3.35 Visible Gap: an opening that exceeds 0.060 inch.

3.36 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.37 Zero Gap: no gap between the tank shell and the seal shall exceed 0.06 inch. The cumulative length of all gaps exceeding 0.02 inch shall not be more than five (5) percent of the circumference of the tank, excluding gaps less than 1.79 inches from vertical seams.

3.38 Zero Gap Pole Wiper Seal: a seal with no gap exceeding 0.06 inches between outer surface of the guidepole or gauge well and pole wiper seal.

4.0 Exemptions

4.1 The provisions of this rule shall not apply to:

4.1.1 Pressure vessels.

4.1.2 Gasoline storage tanks with a capacity of less than 19,800 gallons that are subject to the requirements of Rule 4621 (Gasoline Transfer Into Stationary Storage Containers, Delivery Vessels, and Bulk Plants).

4.1.3 Tanks that are used for storage/processing of clean produced water, or other water that meets the VOC standard specified in the definition of "clean produced water" in Rule 1020 (Definitions).

4.1.4 Tanks used in wine fermentation and for storage of resulting products, by-products, and spirits.

4.2 Except for complying with Sections 6.3.2, 6.3.3 and 7.2, the requirements of this rule shall not apply to:

4.2.1 Emergency standby tanks, in existence prior to May 1, 1979, which exclusively store petroleum distillates or crude oil. Prior to return to Emergency Standby status, the contents of each tank shall be drained to the maximum extent feasible. After a tank has been used (filled or partially filled) and draining of the tank has begun, any further filling of the tank shall constitute a separate use of the tank, and the number of days the tank is used shall be counted towards the 60 cumulative days limit specified in the definition of an emergency standby tank in Section 3.8. Fixed roof emergency standby tanks shall be equipped with a pressure-vacuum relief valve that meets the requirements of Section 5.2.

4.2.2 Temporary tanks, with capacities of 21,000 gallons (500 barrels) or less, left on site for six months or less.

4.3 Except for complying with Sections 6.3.4 and 7.2, a small producer's tank with a throughput of 50 barrels of crude oil per day or less is exempt from the requirements of this rule. All other small producer tanks that do not qualify for exemption under Section 4.4 shall comply with all the requirements of this rule.

4.4 Tanks exclusively receiving and/or storing an organic liquid with a TVP less than 0.5 psia are exempt from all other requirements of the rule except for complying with the following provisions:

4.4.1 TVP and API Gravity Testing provisions pursuant to Section 6.2,

4.4.2 Recordkeeping provisions pursuant to Section 6.3.6,

4.4.3 Test Methods provisions pursuant to Section 6.4, and

4.4.4 Compliance schedules pursuant to Section 7.2.

The requirements of Section 4.4 shall not apply to tanks that are exempt pursuant to Sections 4.1 through 4.3.

5.0 Requirements

5.1 VOC Control System Requirements

5.1.1 General VOC Control System Requirements

Except for small producers who are required to comply with the VOC control system requirements in Section 5.1.2, an operator shall not place, hold, or store organic liquid in any tank unless such tank is equipped with a VOC control system identified in Table 1. The specifications for the VOC control system are described in Sections 5.2, 5.3, 5.4, 5.5, and 5.6.

Table 1 – General VOC Control System Requirements

Tank Capacity (Gallons)	True Vapor Pressure (TVP) of Organic Liquid		
	0.5 psia to <1.5 psia	1.5 psia to <11 psia	≥11.0 psia
(Group A) 1,100 to 19,800	Pressure-vacuum relief valve, or internal floating roof, or external floating roof, or vapor recovery system	Pressure-vacuum relief valve, or internal floating roof, or external floating roof, or vapor recovery system	Pressure vessel or vapor recovery system
(Group B) >19,800 to 39,600	Pressure-vacuum relief valve, or internal floating roof, or external floating roof, or vapor recovery system	Internal floating roof, or external floating roof, or vapor recovery system	Pressure vessel or vapor recovery system
(Group C) >39,600	Internal floating roof, or external floating roof, or vapor recovery system	Internal floating roof, or external floating roof, or vapor recovery system	Pressure vessel or vapor recovery system

5.1.2 Small Producer VOC Control System Requirements

A small producer shall not place, hold, or store crude oil in any tank unless such tank is equipped with a VOC control system identified in Table 2. For storage of any organic liquid except crude oil, a small producer shall comply with the requirements of Section 5.1.1. The specifications for the VOC control system are described in Sections 5.2, 5.3, 5.4, 5.5, and 5.6.

Table 2 – Small Producer VOC Control System Requirements for Crude Oil Storage Tanks

Tank Capacity (gallons)	TVP and Crude Oil Throughput		
	0.5 psia to <11 psia and a tank throughput of >50 to <150 barrels of crude oil per day	0.5 psia to <11 psia and a tank throughput ≥150 barrels of crude oil per day	≥11 psia and regardless of crude oil tank throughput
(Group A) 1,100 to 39,600	Pressure-vacuum relief valve, or internal floating roof, or external floating roof, or vapor recovery system	Pressure-vacuum relief valve, or internal floating roof, or external floating roof, or vapor recovery system	Pressure vessel or vapor recovery system
(Group B) >39,600	Pressure-vacuum relief valve, or internal floating roof, or external floating roof, or vapor recovery system	Internal floating roof, or external floating roof, or vapor recovery system	Pressure vessel or vapor recovery system

5.1.3 All tanks subject to the control requirements of this rule shall be maintained in a leak-free condition, except for the following components and as allowed by Section 5.2 and applicable provisions of Table 3 through Table 5, and Section 5.7.5.4:

5.1.3.1 Primary seals and secondary seals of external floating roof tanks that are in compliance with the applicable requirements specified in Sections 5.3.2.1, 5.3.2.2, and 5.3.2.3.

5.1.3.2 Primary seals and secondary seals of internal floating roof tanks that are in compliance with the applicable requirements specified in Section 5.4.1.

5.1.3.3 Floating roof deck fittings that are in compliance with the applicable requirements specified in Sections 5.5.2.1.5, 5.5.2.2.5, 5.5.2.3.3, 5.5.2.4.2, and 5.5.2.4.3.

5.1.3.4 Floating roof automatic bleeder vents that are in compliance with requirements specified in Sections 5.5.2.1.3 and 5.5.2.2.3 during product change provided product change is accomplished as expeditiously as practicable.

5.2 Specifications for Pressure-Vacuum Relief Valve

The pressure-vacuum relief valve shall be set to within ten (10) percent of the maximum allowable working pressure of the tank. The pressure-vacuum relief valve shall be permanently labeled with the operating pressure settings. The pressure-vacuum relief valve shall be properly installed and maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve set pressure.

5.3 Specifications for External Floating Roof Tanks

5.3.1 An external floating roof tank shall be:

5.3.1.1 Equipped with a floating roof consisting of a pan type that is installed before December 20, 2001, pontoon-type, or double-deck type cover, that rests on the surface of the liquid contents; and

5.3.1.2 Equipped with a closure device between the tank shell and roof edge consisting of two seals, one above the other; the one below shall be referred to as the primary seal, and the one above shall be referred to as the secondary seal.

5.3.1.3 The floating roof shall be floating on the surface of the stored liquid at all times (i.e., off the roof leg supports) except during the initial fill until the roof is lifted off the leg supports and when the tank is completely emptied and subsequently refilled. When the roof is resting on the leg supports the processes of filling or emptying and refilling the tank shall be continuous and shall be accomplished as rapidly as possible. Whenever the operator intends to land the roof on its legs, an operator shall notify the APCO in writing at least five calendar days prior to performing the work. The tank must be in compliance with this rule before the operator may land the roof on its legs. The required information to be included in the written notification as well as the recordkeeping requirements is specified in Section 6.3.7.

5.3.2 Seal designs shall be submitted to the APCO and shall not be installed or used unless they are approved by the APCO as meeting the criteria set forth in Sections 5.3.2.1 through 5.3.2.3 as applicable. Seal designs other than set forth in Sections 5.3.2.1 through 5.3.2.3 may be approved provided that a notice allowing the use of such design has been published in the Federal Register pursuant to CFR 40 Part 60: Subpart Kb paragraph 60.114b.

5.3.2.1 Welded Tanks with Primary Metallic-Shoe Type Seal

5.3.2.1.1 No gap between the tank shell and the primary seal shall exceed one and one half (1-1/2) inches. The cumulative length of all gaps between the tank shell and the primary seal greater than one-half (1/2) inch shall not exceed ten (10) percent of the circumference of the tank. The cumulative length of all primary seal gaps greater than one-eighth (1/8) inch shall not exceed 30 percent of the tank circumference. No continuous gap greater than one-eighth (1/8) inch shall exceed ten (10) percent of the tank circumference.

5.3.2.1.2 No gap between the tank shell and the secondary seal shall exceed one-half (1/2) inch. The cumulative length of all gaps between the tank shell and the secondary seal, greater than one-eighth (1/8) inch shall not exceed five (5) percent of the tank circumference.

5.3.2.1.3 Metallic-shoe-type seals shall be installed so that one end of the shoe extends into the stored liquid and the other end extends a minimum vertical distance of 24 inches above the stored liquid surface.

5.3.2.1.4 The geometry of the metallic-shoe type seal 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 Section 5.3.2.1.1 for a length of at least 18 inches in the vertical plane above the liquid surface.

5.3.2.1.5 There shall be no holes, tears, or openings in the secondary seal or in the primary seal envelope that surrounds the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal.

5.3.2.1.6 The secondary seal shall allow easy insertion of probes up to one and one-half (1-1/2) inches in width in order to measure gaps in the primary seal.

5.3.2.1.7 The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal.

5.3.2.2 Riveted Tank with Primary Metallic-Shoe Type Seal

5.3.2.2.1 No gap between the tank shell and the primary seal shall exceed two and one-half (2-1/2) inches. The cumulative length of all primary seal gaps greater than one and one-half (1-1/2) inches shall be not exceed ten (10) percent of the circumference of the tank. The cumulative length of all gaps between the tank shell and the primary seal greater than one-eighth (1/8) inch shall not exceed 30 percent of the circumference of the tank. No continuous gap greater than one-eighth (1/8) inch shall exceed ten (10) percent of the tank circumference.

5.3.2.2.2 No gap between the tank shell and the secondary seal shall exceed one-half (1/2) inch. The cumulative length of all gaps between the tank shell and the secondary seal greater than one-eighth (1/8) inch shall not exceed five (5) percent of the tank circumference.

5.3.2.2.3 Metallic shoe-type seals shall be installed so that one end of the shoe extends into the stored liquid and the other end extends a minimum vertical distance of 24 inches above the stored liquid surface. The geometry of the metallic-shoe type seal 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 Section 5.3.2.2.1 for a length of at least 18 inches in the vertical plane

5.3.2.2.4 There shall be no holes, tears, or openings in the secondary seal or in the primary seal envelope that surrounds the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal.

5.3.2.2.5 The secondary seal shall allow easy insertion of probes up to two and one-half (2-1/2) inches in width in order to measure gaps in the primary seal.

5.3.2.2.6 The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal.

5.3.2.3 Tanks with Primary Resilient Toroid Seal:

5.3.2.3.1 The primary resilient toroid seal shall be mounted on the perimeter of the roof such that it is in contact with

the tank's liquid contents at all times while the roof is floating.

5.3.2.3.2 No gap between the tank shell and the primary seal shall exceed one-half (1/2) inch. The cumulative length of all primary seal gaps greater than one-eighth (1/8) inch shall not exceed five (5) percent of the tank circumference. No continuous gap greater than one-eighth (1/8) inch shall exceed ten (10) percent of the tank circumference.

5.3.2.3.3 No gap between the tank shell and the secondary seal shall exceed one-half (1/2) inch. The cumulative length of all gaps between the tank shall and the secondary seal, greater than one-eighth (1/8) inch shall not exceed five (5) percent of the tank circumference.

5.3.2.3.4 There shall be no holes, tears, or openings in the secondary seal or in the primary seal envelope that surrounds the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal.

5.3.2.3.5 The secondary seal shall allow easy insertion of probes up to one-half (1/2) inch in width in order to measure gaps in the primary seal.

5.3.2.3.6 The secondary seal shall extend from the roof of the tank to the shell and not be attached to the primary seal.

5.3.2.4 The following seal designs have been found to be equivalent to seals meeting the criteria set forth in Sections 5.3.2.1 through 5.3.2.3:

5.3.2.4.1 When installed and maintained with zero gap:

MANUFACTURER	MODEL
Republic Fabricators	WeatherGuard Seal

5.3.2.4.2 When installed and maintained to meet the gap criteria for primary and secondary seals set forth in Sections 5.3.2.1 through 5.3.2.3:

MANUFACTURER	MODEL

"HMT"	Dual/Multi Blade Wiper Seals

5.4 Specifications for Internal Floating Roof Tanks

5.4.1 Internal floating roof tanks shall be equipped with seals that meet the criteria set forth in Section 5.3, except for complying with the requirement specified in Section 5.3.2.1.3. For internal floating roof, the metallic-shoe type seals shall be installed so that one end of the shoe extends into the stored liquid and the other end extends a minimum vertical distance of 18 inches above the stored liquid surface.

5.4.2 The following seal designs have been found to be equivalent to seals meeting the criteria set forth in Section 5.3:

5.4.2.1 When installed and maintained with zero gap:

MANUFACTURER	MODEL
Ultraflote	Single Ultraseal

5.4.2.2 When installed and maintained to meet the gap criteria for primary and secondary seals set forth in Sections 5.3.2.1 through 5.3.2.3:

MANUFACTURER	MODEL
Ultraflote	Dual Ultraseal
Altech	Double Wiper Seal

5.4.3 The operator shall comply with the floating roof landing requirements specified in Section 5.3.1.3.

5.5 Floating Roof Deck Fitting Requirements

5.5.1 All openings in the roof used for sampling or gauging, except pressure-vacuum valves complying with Section 5.2, shall provide a projection below the liquid surface to prevent belching of liquid and to prevent entrained or formed organic vapor from escaping from the liquid contents of the tank and shall be equipped with a cover, seal, or lid. The cover, seal, or lid shall at all times be in a closed position, with no visible gaps and leak-free, except when the device or appurtenance is in use for sampling or gauging.

5.5.2 Tanks shall meet the requirements of Sections 5.1.3, 5.5.1, and Sections 5.5.2.1 through 5.5.2.4.

5.5.2.1 Requirements for Internal Floating Roof Deck Fittings

5.5.2.1.1 Each opening in a non-contact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents shall provide a projection below the liquid surface.

5.5.2.1.2 Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, combination manway/vacuum breakers, and stub drains shall be equipped with a cover, or a lid shall be maintained in a closed position at all times (i.e., no visible gap) except when the device is in use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted in place except when they are in use.

5.5.2.1.3 Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the leg roof supports.

5.5.2.1.4 Rim vents shall be equipped with a gasket and shall be set to open only when the internal floating roof is not floating or set to open at the manufacturer's recommended setting.

5.5.2.1.5 Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The well shall have a slit fabric cover that covers at least 90

percent of the opening. The fabric cover must be impermeable.

5.5.2.1.6 Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. The fabric sleeve must be impermeable.

5.5.2.2 Requirements for External Floating Roof Deck Fittings

5.5.2.2.1 Except for automatic bleeder vents and rim vents and pressure vacuum relief vents, each opening in a non-contact external floating roof shall provide a projection below the liquid surface.

5.5.2.2.2 Except for automatic bleeder vents and rim vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid that shall be maintained in a closed position at all times (i.e., no visible gap) except when in actual use.

5.5.2.2.3 Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

5.5.2.2.4 Rim vents shall be equipped with a gasket and shall be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

5.5.2.2.5 Each emergency roof drain shall be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. The fabric cover must be impermeable if the liquid is drained into the contents of the tanks.

5.5.2.2.6 External floating roof legs shall be equipped with vapor socks or vapor barriers in order to maintain a leak-free condition so as to prevent VOC emissions from escaping through the roof leg opening.

5.5.2.3 Solid Guidepole

Solid sampling or gauging wells, and similar fixed projections through a floating roof such as an anti-rotational pipe, shall meet the following requirements:

5.5.2.3.1 The well shall provide a projection below the liquid surface.

5.5.2.3.2 The well shall be equipped with a pole wiper and a gasketed cover, seal or lid which shall be in a closed position at all times (i.e., no visible gap) except when the well is in use.

5.5.2.3.3 The gap between the pole wiper and the guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed one-half (1/2) inch.

5.5.2.4 Slotted Guidepole

Slotted sampling or gauging wells shall meet the following requirements:

5.5.2.4.1 The well shall provide a projection below the liquid surface.

5.5.2.4.2 The well on external floating roof shall be equipped with the following: a sliding cover, a well gasket, a pole sleeve, a pole wiper, and an internal float and float wiper designed to minimize the gap between the float and the well, and provided the gap shall not exceed one-eighth (1/8) inch; or shall be equipped with a well gasket, a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface.

5.5.2.4.3 The gap between the pole wiper and the guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed one-eighth (1/8) inch.

5.6 Specifications for Vapor Recovery Systems

5.6.1 Fixed roof tanks shall be fully enclosed and shall be maintained in a leak-free condition. An APCO-approved vapor recovery system shall consist of a closed system that collects all VOCs from the storage tank, and a VOC

control device. The vapor recovery system shall be maintained in a leak-free condition. The VOC control device shall be one of the following:

5.6.1.1 A condensation or vapor return system that connects to one of the following: a gas processing plant, a field gas pipeline, a pipeline distributing Public Utility Commission quality gas for sale, an injection well for disposal of vapors as approved by the California Department of Conservation, Division of Oil Gas, and Geothermal Resources, or

5.6.1.2 A VOC control device that reduces the inlet VOC emissions by at least 95 percent by weight as determined by the test method specified in Section 6.4.6.

5.6.2 Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling.

5.6.3 All piping, valves, and fittings shall be constructed and maintained in a leak-free condition.

5.7 Voluntary Tank Preventive Inspection and Maintenance, and Tank Interior Cleaning Program

Only operators who elect to participate in the voluntary tank preventive inspection and maintenance, and tank interior cleaning program (program) shall be allowed to use the provisions specified in Tables 3 to 5 and Section 5.7.5. When using Tables 3 to 5 and Section 5.7.5 provisions, operators shall perform the procedures as expeditiously as practicable and minimize emissions to the maximum extent practicable. To participate in this program, the operator shall comply with the requirements of Sections 5.7.1 through 5.7.4.

5.7.1 Submit a letter to the APCO prior to conducting tank inspection, maintenance, and cleaning activities. The letter shall contain a list of each tank that will be subject to this program. The list shall include the tank identification number and location, and/or PTO numbers.

5.7.2 Keep in their facility at all times a copy of the letter sent to the APCO and maintain the records of annual tank inspection, maintenance and cleaning activities, to document their participation in the program.

5.7.3 The absence of a copy of the letter and/or failure to maintain appropriate records shall be deemed as non-participation in the program, and therefore the operator will not be eligible to use the provisions specified in Tables 3 to 5 and Section 5.7.5. Those who have not voluntarily participated in the

program but are found to be using the provisions of Tables 3 to 5, and Section 5.7.5 shall be deemed to be in violation of this rule.

5.7.4 Operators who elect to participate in this program but who fail to comply with all of the requirements specified in Tables 3 to 5 and Section 5.7.5 shall be deemed to be a violation of the provisions of this rule.

5.7.5 Storage Tank Degassing and Interior Cleaning Requirements

5.7.5.1 Notification

Operators of storage tanks subject to the requirements of Section 5.7 shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following information:

5.7.5.1.1 The PTO number and physical location of the tank being degassed,

5.7.5.1.2 The date and time that tank degassing and cleaning activities will begin,

5.7.5.1.3 The degassing method, as allowed pursuant to Section 5.7.5.4, to be used,

5.7.5.1.4 The method to be used to clean the tank, including any solvents to be used, and

5.7.5.1.5 The method to be used to dispose of the removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport.

5.7.5.2 Records

Operators shall maintain records of tank cleaning activities for a period of 5 years and present said records to the APCO upon request. Records should include the final details of the planned activities submitted pursuant to Section 5.7.5.1.

5.7.5.3 Fixed-Roof Tanks Operating Only a Pressure-Vacuum Relief Valve

5.7.5.3.1 Except for complying with Section 5.7.5.3.2 requirements, fixed-roof tanks allowed, pursuant to Tables 1 and 2 of this rule, to operate a pressure-

vacuum relief valve as the primary VOC control system are not subject to the degassing requirements specified in Section 5.7.5.4.

5.7.5.3.2 Operators shall comply with the requirements of Section 5.2 during the process of draining, and refilling the tank with an organic liquid having a TVP of 0.5 psia or greater.

5.7.5.3.3 The requirements specified in Sections 5.1 and 5.2 shall not apply to the tank during interior cleaning or maintenance activities.

5.7.5.4 Tank Degassing Requirements

Except for tanks satisfying Section 5.7.5.3 provisions, the process of tank degassing shall be accomplished by emptying the tank of organic liquid having a TVP of 0.5 psia or greater, and minimizing organic vapors in the tank vapor space by one of the following methods:

5.7.5.4.1 Exhaust VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or

5.7.5.4.2 Displace VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or

5.7.5.4.3 Displace VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight; or

5.7.5.4.4 For free-water knockout tanks, the operator may degas the tank vapor space by restricting the outflow of water and floating off the oilpad, such that at least 90 percent of the tank volume is displaced.

5.7.5.4.5 During degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system that is leak-free and meets the requirements of Section 5.6.1.1 or Section 5.6.1.2.

5.7.5.4.6 To facilitate connection to an external APCO-approved vapor recovery system a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour.

5.7.5.4.7 Except as provided for in Section 5.7.5.4.9, the tank shall be in compliance with the applicable requirements specified in Section 5.1 through Section 5.6 during draining, degassing, and refilling the tank with an organic liquid having a TVP of 0.5 psia or greater.

5.7.5.4.8 Draining and refilling of floating roof tanks shall occur as a continuous process and shall proceed as rapidly as practicable while the roof is not floating on the surface of the stored liquid.

5.7.5.4.9 For floating-roof tanks, the gap seal requirements specified in Sections 5.3.2 and 5.4.2 shall not apply while the roof is resting on its legs, and during the processes of draining, degassing, or refilling the tank. The leak-free condition specified in Section 5.1.3 shall not apply during refilling the tank, if the operator complies with Section 5.7.5.4.8 requirements.

5.7.5.4.10 After a tank has been degassed pursuant to the provisions of Section 5.7.5 the requirements specified in Section 5.1 through Section 5.6 shall not apply until an organic liquid having a TVP of 0.5 psia or greater is placed, held, or stored in the tank.

5.7.5.5 Tank Cleaning

5.7.5.5.1 While performing tank cleaning activities, operators may use the following cleaning agents: diesel, solvents with an initial boiling point of greater than 302^{o}F,

solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams per liter VOC content or less.

5.7.5.5.2 Steam cleaning shall be allowed at locations where wastewater treatment facilities are limited or during the months of December through March.

5.7.5.6 Removed Sludge

Operators of tanks containing an organic liquid with a TVP of 1.5 psia or greater shall control emissions from the removed sludge by complying with all of the following provisions:

5.7.5.6.1 During sludge removal the operator shall control emissions from the receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95 percent.

5.7.5.6.2 Operators shall transport removed sludge in closed, liquid leak-free containers.

5.7.5.6.3 Notwithstanding Section 5.7.5.6.2, operators shall store removed sludge, until final disposal, in leak-free containers, or tanks complying with Section 5.1 requirements. Sludge that is to be used to manufacture roadmix, as defined in Rule 2020 (Exemptions), is exempt from this requirement. Roadmix manufacturing operations exempt pursuant to Rule 2020, shall maintain documentation of their compliance with Rule 2020, and promptly make said documentation available to the APCO upon request.

Table 3: Fixed Roof Tank Preventive Inspection and Maintenance

Emission Minimization for Components Serving Organic Liquid Storage Tanks			
Components	Maintenance Schedule	Emission Minimization	Additional Requirements
1. Hatch	1. Conduct annual inspections with	1. Liquid Leak Repair leaking components that	1. For leaking components, immediately affix a tag

2. Tank seals and seams 3. Cable Seals 4. Piping components directly affixed to the tank and within five feet of the tank, including but not limited to: -Valves -Flanges -Connectors	maintenance and repair of components. 2. Conduct visual inspections and inspections using a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21. 3. Visually or ultrasonically inspect as appropriate, the external shells and roofs of un-insulated tanks for integrity annually.	have a liquid leak rate of ≥30 drops per minute, within 8 hours after detection. Repair leaking components that have a liquid leak rate of ≥3 to <30 drops per minute within 24 hours after detection. 2. Gas leak Comply with the following requirements to repair leaking components that have a gas leak >10,000 ppmv (measured in accordance with EPA Method 21 by a portable hydrocarbon detection instrument that is calibrated with methane): a. Eliminate the leak within 8 hours after detection; or b. If the leak can not be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices; and c. Eliminate the leak within 48 hours after minimization; and d. In no event that the total time to minimize and eliminate the leak shall exceed 56 hours after detection. 3. If a component type for a given tank is found to leak during an annual inspection, then conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If a component type is found to have no leak after four consecutive quarterly inspections, then revert to annual inspections.	and maintain records of liquid leak and gas leak detection readings, date/time leak was discovered, and date/time the component was repaired to a leak-free condition. 2. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the deadlines specified in the Emissions Minimization requirements, shall not constitute a violation of this rule. However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within deadlines specified in the Emissions Minimization requirements, shall constitute a violation of this rule. 3. Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if it is under the voluntary inspection and maintenance program.

Table 4: External Floating Roof Tank Preventive Inspection and Maintenance

Emission Minimization for Components Serving Organic Liquid Storage Tanks			
Components	Maintenance Schedule	Emission Minimization	Additional Requirements
1. Piping Components (valves, flanges, and connectors) directly affixed to the tank and within five feet of the tank.	1. Conduct annual inspections with maintenance and repair of components. 2. Conduct visual inspections and inspections using a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21. 3. Visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for integrity annually.	1. Liquid Leak Repair leaking components that have a liquid leak rate of ≥30 drops per minute within 8 hours after detection. Repair leaking components that have a liquid leak rate of ≥3 to <30 drops per minute within 24 hours after detection. 2. Gas leak Comply with the following requirements to repair leaking components that have a gas leak >10,000 ppmv (measured in accordance with EPA Method 21 by a portable hydrocarbon detection instrument that is calibrated with methane): a. Eliminate the leak within 8 hours after detection; or b. If the leak can not be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices; and c. Eliminate the leak within 48 hours after minimization; and d. In no event that the total time to minimize and eliminate the leak shall exceed 56 hours after detection. 3. If a component type for a given tank is found to leak during annual inspection, then conduct quarterly inspections on the tank or tank system for four consecutive quarters. If a component type is found to have no leak after four consecutive quarterly inspections, then revert to annual inspections.	1. For leaking components, immediately affix a tag and maintain records of liquid leak and gas leak detection readings, date/time leak was discovered, and date/time the component was repaired to a leak-free condition. 2. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the deadlines specified in the Emissions Minimization requirements, shall not constitute a violation of this rule. However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within deadlines specified in the Emissions Minimization requirements, shall constitute a violation of this rule. 3. Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if it is under the voluntary inspection and maintenance program.

Table 5: Internal Floating Roof Preventive Inspection Maintenance

Emission Minimization for Components Serving Organic Liquid Storage Tanks			
Components	Maintenance Schedule	Emission Minimization	Additional Requirements
1. Piping Components (valves, flanges, and connectors) directly affixed to the tank and within five feet of the tank.	1. Conduct annual inspections with maintenance and repair of components. 2. Conduct visual inspections and inspections using a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21. 3. Externally inspect un-insulated tanks, tank shells, and roofs for integrity annually.	1. Liquid Leak Repair leaking components that have a liquid leak rate of ≥30 drops per minute, within 8 hours after detection. Repair leaking components that have a liquid leak rate of ≥3 to <30 drops per minute within 24 hours after detection. 2. Gas leak Comply with the following requirements to repair leaking components that have a gas leak >10,000 ppmv (measured in accordance with EPA Method 21 by a portable hydrocarbon detection instrument that is calibrated with methane): a. Eliminate the leak within 8 hours after detection; or b. If the leak can not be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices; and c. Eliminate the leak within 48 hours after minimization; and d. In no event that the total time to minimize and eliminate the leak shall exceed 56 hours after detection. 3. If a component type for a given tank is found to leak during annual inspection, then conduct quarterly inspections on the tank or tank system for four consecutive quarters. If a component type is found to have no leak after four consecutive quarterly inspections, then revert to annual inspections.	1. For leaking components, immediately affix a tag and maintain records of liquid leak and gas leak detection readings, date/time leak was discovered, and date/time the component was repaired to a leak-free condition. 2. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the deadlines specified in the Emissions Minimization requirements, shall not constitute a violation of this rule. However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within deadlines specified in the Emissions Minimization requirements, shall constitute a violation of this rule. 3. Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if it is under the voluntary inspection and maintenance program.

6.0 Administrative Requirements

6.1 Inspection of Floating Roof Tanks

6.1.1 The operator of external floating roof tanks shall make the primary seal envelope available for unobstructed inspection by the APCO on an annual basis at locations selected along its circumference at random by the APCO. In the case of riveted tanks with toroid-type seals, a minimum of eight (8) locations shall be made available; in all other cases, a minimum of four (4) locations shall be made available. If the APCO suspects a violation may exist the APCO may require such further unobstructed inspection of the primary seal as may be necessary to determine the seal condition for its entire circumference.

6.1.2 Operators of floating roof tanks shall submit a tank inspection plan to the APCO for approval. The plan shall include an inventory of the tanks subject to this rule and a tank inspection schedule. A copy of the operator's tank safety procedures shall be made available to the APCO upon request. The tank inventory shall include tank's identification number, PTO number, maximum tank capacity, dimensions of tank (height and diameter), organic liquid stored, type of primary and secondary seal, type of floating roof (internal or external floating roof), construction date of tank, and location of tank. Any revision to a previously approved tank inspection schedule shall be submitted to the APCO for approval prior to conducting an inspection.

6.1.3 External Floating Roof Tank Inspection

6.1.3.1 Inspect all floating tanks at least once every 12 months to determine compliance with the requirements of this rule. The actual gap measurements of the floating roof primary and secondary seals shall be recorded. The inspection results shall be submitted to the APCO as specified in Section 6.3.5.

6.1.3.2 Inspect the primary and secondary seals for compliance with the requirements of this rule every time a tank is emptied or degassed. Actual gap measurements shall be performed when the liquid level is static but not more than 48 hours after the tank roof is re-floated.

6.1.4 Internal Floating Roof Tank Inspection

6.1.4.1 For newly constructed, repaired, or rebuilt internal floating roof tanks, visually inspect the internal floating roof and its appurtenant parts, fittings, etc., and measure the gaps of the primary seal and/or secondary seal prior to filling the tank. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof or its appurtenant

parts, components, fittings, etc., the operator shall repair the defects before filling the tank.

6.1.4.2 Visually inspect, through the manholes, roof hatches, or other openings on the fixed roof, the internal floating roof and its appurtenant parts, fittings, etc., and the primary seal and/or secondary seal at least once every 12 months after the tank is initially filled with an organic liquid. There should be no visible organic liquid on the roof, tank walls, or anywhere. Other than the gap criteria specified by this rule, no holes, tears, or other openings are allowed that would permit the escape of hydrocarbon vapors. Any defects found are violations of this rule.

6.1.4.3 Conduct actual gap measurements of the primary seal and/or secondary seal at least once every 60 months. Other than the gap criteria specified by this rule, no holes, tears, or other openings are allowed that would permit the escape of hydrocarbon vapors. Any defects found shall constitute a violation of this rule.

6.2 TVP and API Gravity Testing of Stored Organic Liquid in Uncontrolled Fixed Roof Tanks

Sections 6.2.1 and 6.2.2 shall not apply to tanks that exclusively store organic liquids listed in Appendix A, provided the storage temperature indicated in Appendix A is not exceeded at any time. An operator shall comply with Section 6.3.6 if the information in Appendix A is used to demonstrate the TVP and/or API gravity of the stored liquid.

6.2.1 Initial TVP and API Gravity Testing

6.2.1.1 An operator shall conduct an initial TVP testing of each uncontrolled fixed roof tank. In lieu of testing each uncontrolled fixed roof tank, an operator may conduct a TVP testing of a representative tank provided the requirements of Sections 6.2.1.1.1 through 6.2.1.1.5 are met. The operator shall submit the records of TVP and/or API gravity testing to the APCO as specified in Section 6.3.6. The operator shall be in full compliance with the rule by the deadline specified in Section 7.1

6.2.1.1.1 The selection of representative, uncontrolled fixed roof tanks is submitted in writing to the APCO, and written approval is granted by the APCO prior to conducting the test.

6.2.1.1.2 One uncontrolled fixed roof tank represents some or all of the tanks in a tank battery (defined in Section 3.31).

6.2.1.1.3 For crude oil production facilities, the representative uncontrolled fixed roof tank shall be the first line tank (or tanks) in a tank battery that is first receiving the produced fluids (mixture of oil, water, and gases) from the crude oil production wells.

6.2.1.1.4 The stored organic liquid in each of the represented tanks is the same and came from the same source.

6.2.1.1.5 The TVP and storage temperature of the stored organic liquid of the representative tank to be tested are the same or higher than those of the tanks it is to represent.

6.2.1.2 The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. If the tank stores crude oil or petroleum distillates, the operator shall also conduct an API gravity testing.

6.2.1.3 In lieu of complying with Sections 6.2.1.1 and 6.2.1.2, an operator shall submit a complete application for an Authority to Construct to install and operate on each uncontrolled fixed roof tank the appropriate VOC control system specified in Section 5.1. The operator shall be in full compliance with the rule by the deadline specified in Section 7.1.

6.2.2 Periodic TVP and API Gravity Testing

Effective on and after November 15, 2003, an operator shall conduct a TVP testing of each uncontrolled fixed roof tank at least once every 24 months during summer (July – September), and/or whenever there is a change in the source or type of organic liquid stored in each tank. In lieu of testing each uncontrolled fixed roof tank, an operator may conduct a TVP testing of a representative tank provided the requirements of Sections 6.2.1.1.1 through 6.2.1.1.5 are met. The operator shall also comply with Section 6.2.1.2. The operator shall submit the records of TVP and/or API gravity testing to the APCO as specified in Section 6.3.6.

6.2.3 The requirements of Sections 6.2.1 and 6.2.2 shall not apply to the following tanks:

6.2.3.1 Tanks identified in Section 5.1.1, Table 1, Group A, that are permitted by the District to operate a pressure-vacuum relief valve complying with Section 5.2 requirements, and exclusively receive and/or store crude oil with a TVP of less than 11 psia,

6.2.3.2 Tanks identified in Section 5.1.2, Table 2, Group A, that are permitted by the District to operate a pressure-vacuum relief valve complying with Section 5.2 requirements, and exclusively receive and/or store crude oil with a TVP of less than 11 psia, or

6.2.3.3 Tanks identified in Section 5.1.2, Table 2, Group B, are permitted by the District to operate a pressure-vacuum relief valve complying with Section 5.2 requirements; exclusively receive and/or store crude oil with a TVP of less than 11 psia; and have a permitted throughput of less than 150 barrels of crude oil per day.

6.3 Recordkeeping

An operator shall retain accurate records required by this rule for a period of five years. Records shall be made available to the APCO upon request, except for certain records that need to be submitted as specified in the respective sections below.

6.3.1 An operator whose tanks are subject to the requirements of this rule shall keep an accurate record of each organic liquid stored in each tank, including its storage temperature, TVP, and API gravity. The requirement of 6.3.1 shall not apply to fixed roof tanks equipped with a vapor recovery system, external floating roof tanks, or internal floating roof tanks that meet the requirements of this rule.

6.3.2 An operator whose emergency standby tanks are required to comply with Section 4.2.1 shall maintain records showing date(s) the organic liquid is first introduced into each tank, and date(s) each tank is fully drained. Such records shall be submitted to the APCO 60 days prior to permit renewal.

6.3.3 An operator whose temporary tanks are required to comply with Section 4.2.2 shall maintain records showing the tank capacity and duration of time that the tank is used.

6.3.4 Small producers shall maintain monthly records of average daily crude oil production to determine compliance with Section 3.29. The monthly crude oil production records required by the California Division of Oil, Gas, and Geothermal Resources may be used to comply with the above requirement. Small producers shall also maintain monthly records of the average daily crude oil throughput of each tank to demonstrate compliance with Sections 4.3, and/or 5.1.2. Operators shall submit the required monthly records upon the request of the APCO.

6.3.5 An operator shall submit the reports of the floating roof tank inspections conducted in accordance with the requirements of Section 6.1 to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Sections 5.2 through

5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and shall be made available upon request by the APCO. The inspection report shall contain all information necessary to demonstrate compliance with the provisions of this rule, including the following:

6.3.5.1 Date of inspection and names and titles of company personnel doing the inspection.

6.3.5.2 Tank identification numbers and PTO number.

6.3.5.3 Measurements of the gaps between the tank shell and primary and secondary seals.

6.3.5.4 Leak-free status of tanks and floating roof deck fittings. Records of leak-free status shall include the vapor concentration values measured in ppmv.

6.3.5.5 Data, supported by calculations, demonstrating compliance with the requirements specified in Sections 5.3, 5.4, 5.5.2.3.3, 5.5.2.4.2, and 5.5.2.4.3 of this rule.

6.3.5.6 Any corrective actions or repairs performed on the tank in order to comply with this rule and the date such actions were taken.

6.3.6 An operator shall submit the records of TVP and API gravity testing conducted in accordance with the requirements of Section 6.2 to the APCO within 45 days after the date of testing. The record shall include the tank identification number, PTO number, type of stored organic liquid, TVP and API gravity of the stored organic liquid, test methods used, and a copy of the test results. An operator who uses the information in Appendix A to demonstrate the TVP and/or API gravity of the stored organic liquid shall submit information to the APCO within 45 days after the date that the type of organic liquid stored in the tank has been determined.

6.3.7 An operator shall maintain the records of the external floating roof or internal floating roof landing activities that are performed pursuant to Sections 5.3.1.3 and 5.4.3. The records shall include information on the TVP, API gravity, and type of organic liquid stored in the tank, the purpose of landing the roof on its legs, the date of roof landing, duration the roof was on its legs, the level or height at which the tank roof was set to land on its legs, and the lowest liquid level in the tank. The operator shall keep the records at the facility (or on-site) for a period of five years. The records shall be made available to the APCO upon request.

6.4 Test Methods

The following test methods shall be used unless otherwise approved by the APCO and the United States Environmental Protection Agency (US EPA).

6.4.1 Analysis of halogenated exempt compounds shall be conducted using California Air Resources Board (ARB) Method 432.

6.4.2 The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287-92 (2000) e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057-95 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products".

6.4.3 Except for crude oil subject to Section 6.4.4, the TVP of any organic liquid shall be determined by measuring the Reid Vapor Pressure (RVP) using ASTM D 323-94 (Test Method for Vapor Pressure for Petroleum Products), and converting the RVP to TVP at the tank's maximum organic liquid storage temperature. The conversion of RVP to TVP shall be done in accordance with the procedures in Appendix B. Appendix B is an excerpt from the oil and gas section of "ARB Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588", dated August 1989. As an alternative to using ASTM D 323-94, the TVP of crude oil with an API gravity range of greater than 26^{o} up to 30^{o} may be determined by using other equivalent test methods approved by APCO, ARB and US EPA.

6.4.4 The latest version of the Lawrence Berkeley National Laboratory "Test Method for Vapor Pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and US EPA, shall be used to determine the TVP of crude oil with an API gravity of 26^{o} or less, or for any API gravity that is specified in this test method.

6.4.5 An operator may use the information in Appendix A to determine the TVP of the stored organic liquid in a tank provided the storage temperature listed in Appendix A is not exceeded at any time.

6.4.6 The control efficiency of any VOC destruction device, measured and calculated as carbon, shall be determined by US EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case US EPA Method 25a may be used. US EPA Method 18 may be used in lieu of US EPA Method 25 or US EPA Method 25A provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of the known analytes/compounds to ensure that the VOC concentrations are neither under- or over-reported.

6.4.7 Analysis of halogenated exempt compounds shall be analyzed by ARB Method 422 “Exempt Halogenated VOCs in Gases September 12, 1990”.

6.4.8 Measurements of a gas-leak concentration shall be determined by US EPA Method 21.

7.0 Compliance Schedule

7.1 Any tank subject to the requirements of this rule that is installed or constructed on and after May 19, 2005, shall be in full compliance with this rule upon initial operation, and thereafter.

7.2 Any tank that is exempted under Section 4.0 that becomes subject to the VOC control system requirements of this rule through the loss of exemption status, shall be in full compliance with this rule on the date the exemption status is lost.

Appendix A
STORAGE TEMPERATURE VERSUS VAPOR PRESSURE

ORGANIC LIQUID	Reference Properties		Maximum Temp °F Not to Exceed	
	Gravity (°API)	Initial Boiling Point (°F)	0.5 (psia)	1.5 (psia)
Middle Distillates				
Kerosene	42.5	350	195	250
Diesel	36.4	372	230	290
Gas Oil	26.2	390	249	310
Stove Oil	23	421	275	340
Jet Fuels				
JP-1	43.1	330	165	230
JP-3	54.7	110	---	25
JP-4	51.5	150	20	68
JP-5	39.6	355	205	260
JP-7	44-50	360	205	260
Fuel Oil				
No. 1	42.5	350	195	250
No. 2	36.4	372	230	290
No. 3	26.2	390	249	310
No. 4	23	421	275	340
No. 5	19.9	560	380	465
Residual	19.27	---	405	---
No. 6	16.2	625	450	---
Asphalt				
60-100 pen.	---	---	490	550
120-150 pen.	---	---	450	500
200-300 pen.	---	---	360	420

Appendix A (Continued)
STORAGE TEMPERATURE VERSUS VAPOR PRESSURE

Organic Liquid	Reference Properties			Maximum Temperature (°F) Not to Exceed	
	Density (lb/gal)	Gravity °API	Initial Boiling Point (°F)	0.5 psia	1.5 psia
Acetone	6.6	47	133	---	35
Acrylonitrile	6.8	41.8	173	30	62
Benzene	7.4	27.7	176	34	70
Carbon Disulfide	10.6	22.1	116	---	10
Carbon Tetrachloride	13.4	---	170	20	63
Chloroform	12.5	---	142	---	40
Cyclohexane	6.5	49.7	177	30	65
1,2 Dichloroethane	10.5	---	180	35	75
Ethyl Acetate	7.5	23.6	171	38	70
Ethyl Alcohol	6.6	47.0	173	55	85
Isopropyl Alcohol	6.6	47.0	181	62	95
Methyl Alcohol	6.6	47.0	148	30	62
Methyl Ethyl Ketone	6.7	44.3	175	30	70
Toluene	7.3	30	231	75	120
Styrene	7.5		293	128	167
Vinyl Acetate	7.8	19.6	163	30	65

Appendix B

California Air Resources Board Technical Guidance
to the Criteria and Guidelines Regulation for AB 2588
(Partial Excerpt from pages 102, 103 and 104)

True Vapor Pressure (TVP)

RVP is the absolute pressure of volatile crude oil and nonviscous petroleum liquids. Numerically, the relationship between TVP, RVP and temperature can be expressed by the following equation:

$$TVP = (RVP)\, e^{[Co(IRTEMP - ITEMP)]}$$

Where: C_o = Constant dependent upon the value of RVP
ITEMP = $(1/559.69^oR)$
IRTEMP = $(1/(T_s + 459.69^oR))$
T_s = Temperature of the stored fluid in ^oF

The value of the constant term C_o depends upon the given value of RVP.

Values of C_o for different RVP numbers are tabulated in Table C-3. It should be noted, however, that an error was discovered in the API nomograph calculated values of TVP so that the RVP was not equal to TVP at 100^oF as was expected given the general definition of RVP. Using linear regression techniques, correction factors (C_F) were developed and should be added to the calculated values of TVP in order to obtain reasonable TVP numbers. The relationship between the three values is given as follows:

Corrected TVP = Calculated TVP + C_F

The correction factor was found to be dependent upon RVP according to the following equations:

If RVP < 3,

$C_F = (0.04) \times (RVP) + 0.1$

If RVP > 3,

$C_F = e^{[(2.3452061 \log (RVP)) - 4.132622]}$

Table C-3: VALUES OF C_o FOR DIFFERENT RVP NUMBERS

RVP	C_o
0<RVP<2	-6622.5
2<RVP<3	-6439.2
RVP = 3	-6255.9
3<RVP<4	-6212.1
RVP = 4	-6169.2
4<RVP<5	-6177.9
RVP = 5	-6186.5
5<RVP<6	-6220.4
RVP = 6	-6254.3
6<RVP<7	-6182.1
RVP = 7	-6109.8
7<RVP<8	-6238.9
RVP = 8	-6367.9
8<RVP<9	-6477.5
RVP = 9	-6587.9
9<RVP<10	-6910.5
RVP = 10	-7234.0
10<RVP<15	-8178.0
RVP > 15	-9123.2

RULE 4624 TRANSFER OF ORGANIC LIQUID

(Adopted April 11, 1991)(Amended September 19, 1991; May 21, 1992; December 17, 1992; December 20, 2007)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from the transfer of organic liquids.

2.0 Applicability

This rule shall apply to organic liquid transfer facilities as defined in this rule.

3.0 Definitions

3.1 APCO: as defined in Rule 1020 (Definitions).

3.2 API: American Petroleum Institute.

3.3 ARB: The California Air Resource Board.

3.4 ASTM: American Society for Testing and Materials.

3.5 Background: the ambient concentration of organic compounds determined at least two (2) meters upwind from any valve or flange to be inspected and which is uninfluenced by any specific emission permit unit.

3.6 Bottom Loading: a type of organic liquid loading operation where the discharge opening into the container is completely submerged below the level of the organic liquid in the container.

3.7 CFR: Code of Federal Regulations.

3.8 Class 1 Organic Liquid Transfer Facility: any location transferring 20,000 gallons or more on any one day of organic liquids with a TVP of 1.5 psia or greater to or from tank trucks, trailers, or railroad tank cars.

3.9 Class 2 Organic Liquid Transfer Facility: any location transferring 4,000 gallons or more but less than 20,000 gallons on any one day of organic liquids with a TVP of 1.5 psia or greater to or from tank trucks, trailers, or railroad tank cars.

3.10 Closed VOC Emission Control System: an APCO-approved VOC emission control system that is not open to the atmosphere and that is composed of hard-piping, ductwork connections, and, if necessary, flow inducing devices that transport collected gases or vapors from a piece or pieces of equipment to a vapor return system or condensation system that connects to a process stream, a gas

processing plant, a gas pipeline recovery and distribution system (sales gas system), a fuel gas system, or an injection well for disposal of vapors as approved by the California Department of Resources, Division of Oil, Gas, and Geothermal Resources.

3.11 Container: any stationary tank, reservoir, or vessel in which any organic liquid is placed, held, or stored.

3.12 EPA: United States Environmental Protection Agency.

3.13 Excess Organic Liquid Drainage: more than ten (10) milliliters liquid drainage. Such liquid drainage for disconnect operations shall be determined by computing the average drainage from three consecutive disconnects at any one permit unit.

3.14 Gasoline: any petroleum distillate, petroleum distillate/alcohol blend or alcohol having a Reid vapor pressure of four (4) pounds per square inch absolute or greater, which is used as a motor vehicle fuel, or any fuel which is commonly or commercially known or sold as gasoline.

3.15 Gasoline Bulk Plant: any loading facility and associated unloading facilities, storage tanks and vapor recovery system(s) used to load less than 20,000 gallons in any one (1) day of gasoline to delivery vessels (i.e., tank trucks or trailers).

3.16 IBP: Initial Boiling Point.

3.17 Leak: the dripping of VOC-containing liquid at a rate of more than three (3) drops per minute; or

3.17.1 For organic liquids other than gasoline, the detection of any gaseous or vapor emissions with a concentration of VOC greater than 1,000 ppmv above a background as methane when measured in accordance with the test method in Section 6.3.7 shall constitute a leak

3.17.2 For gasoline, a concentration of VOC greater than 10,000 ppmv, as methane, above background when measured in accordance with the test method in Section 6.3.7 shall constitute a leak.

3.17.3 Any liquid or gas coming from a component undergoing repair or replacement, or during sampling of process fluid from equipment into a container is not considered a leak provided such activities are accomplished as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.

3.18 Location: any single site at a building, structure, facility, or installation.

3.19 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.20 Organic Liquid: any liquid which contains VOCs and has a TVP of 1.5 psia or greater at the storage container's maximum organic liquid storage temperature. Clean produced water, as defined by Rule 1020, and other types of liquids that contain no more than 35 milligrams of VOC per liter, shall not be considered to be an organic liquid.

3.21 Organic Liquid Loading Operation: the transfer of organic liquid to a tank truck, trailer, or railroad car.

3.22 Organic Liquid Transfer Facility: any aggregate or combination of transfer racks and vapor control equipment at a location, including, but not limited to, the stationary organic liquid pump, and the hose end connector, and the discharge of the vapor control device(s).

3.23 Portable Hydrocarbon Detection Instrument: a hand-held hydrocarbon analyzer that meets the criteria specified in EPA Method 21, 40 CFR Part 60. The instrument shall be calibrated with methane.

3.24 Psia: Pounds per square inch, absolute.

3.25 Pump: a device used to transport fluids by the addition of energy, and includes all associated components used for connecting or sealing purposes. The phrase "all associated components used for connecting and sealing purposes" means the first VOC leak points (first components) on the body of the pump. For example, a valve that is connected to a threaded hole on body of the pump, the first VOC leak point is the threaded connection on the body side of the pump, but the valve itself is not a "first VOC leak point". Similarly, a pump shaft seal is considered as a first "VOC leak point".

3.26 Transfer Rack: a loading rack as defined in Rule 1020 (Definitions) or an unloading rack as defined in Rule 2020 (Exemptions). This rule applies only to racks with stationary pumps.

3.27 TVP: True Vapor Pressure.

3.28 VOC: as defined in Rule 1020 (Definitions).

4.0 Exemptions

4.1 The requirements of Section 5.0 of this rule shall not apply to organic liquid transfer facilities which transfer less than 4,000 gallons of organic liquids in any one day. The operator shall meet the applicable recordkeeping requirements of Section 6.1.1.

4.2 The requirements of this rule shall not apply to transfer operations subject to the requirements of Rule 4621 (Gasoline Transfer into Stationary Storage Containers, Gasoline Delivery Vessels and Gasoline Bulk Plants) or to transfer operations that are subject to Rule 4622 (Gasoline Transfer into Motor Vehicle Fuel Tanks).

4.3 Except for Section 6.1, the requirements of this rule shall not apply to the transfer of organic liquids with TVP less than 1.5 psia at the storage container's maximum organic liquid storage temperature.

4.4 The requirements of Section 5.9 shall not apply to equipment or components subject to:

4.4.1 Rule 4409 (Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities);

4.4.2 Rule 4455 (Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants); or

4.4.3 Rule 4623 (Storage of Organic Liquids).

4.5 Except for the one-time record submission requirement of Section 6.1.5 for vacuum truck operators, the requirements of this rule shall not apply to transfer operations involving vacuum trucks.

5.0 Requirements

5.1 For a Class 1 organic liquid transfer facility, the emission of VOC from the transfer operation shall not exceed 0.08 pounds per 1,000 gallons of organic liquid transferred and use one of the following systems:

5.1.1 An organic liquid loading operation shall be bottom loaded.

5.1.2 The VOC from the transfer operation shall be routed to:

5.1.2.1 A vapor collection and control system;

5.1.2.2 A fixed roof container that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids);

5.1.2.3 A floating roof container that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids); or

5.1.2.4 A pressure vessel equipped with an APCO-approved vapor recovery system that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids); or

5.1.2.5 A closed VOC emission control system.

5.2 A Class 2 organic liquid transfer facility shall prevent the release to the atmosphere of at least 95 percent by weight of the VOC displaced during organic liquid transfers and use one of the following systems:

5.2.1 An organic liquid loading operation shall be bottom loaded, equipped with a vapor collection and control system and the vapors from loading the tank truck, trailer, or railroad tank car shall be routed to the vapor collection and control system; or

5.2.2 The VOC from the transfer operation shall be routed to:

5.2.2.1 A vapor collection and control system; or

5.2.2.2 A fixed roof container that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids); or

5.2.2.3 A floating roof container that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids); or

5.2.2.4 A pressure vessel equipped with an APCO-approved vapor recovery system that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids); or

5.2.2.5 A closed VOC emission control system.

5.3 A transfer operation utilizing a closed VOC emission control system or utilizing a container that meets the control requirements of Rule 4623 (Storage of Organic Liquids) to meet the emission control requirements of this rule shall demonstrate compliance with Sections 5.1 and 5.2 by complying with the leak inspection requirements of Section 5.9.

5.4 The vapor collection and control system shall operate such that the pressure in the delivery tank being loaded does not exceed 18 inches water column pressure and six (6) inches water column vacuum. This section shall not apply to the transfer of liquefied petroleum gas.

5.5 All delivery tanks which previously contained organic liquids with a TVP of 1.5 psia or greater at the storage container's maximum organic liquid storage

temperature shall be filled only at transfer facilities satisfying Sections 5.1, 5.2, or 5.4, as applicable.

5.6 The transfer rack and vapor collection equipment shall be designed, installed, maintained and operated such that there are no leaks and no excess organic liquid drainage at disconnections.

5.7 The construction of any new top loading facility or the reconstruction, as defined in 40 CFR 60.15, or the expansion of any existing top loading facility with top loading equipment shall not be allowed.

5.8 Notwithstanding any other provision of this rule, organic liquid transfer facilities exclusively handling liquefied petroleum gas need not comply with the bottom loading provisions of Sections 5.1, 5.2 or 5.7, provided the operator complies with the emission limit of Section 5.1, 5.2 and the provisions of Section 5.6.

5.9 Leak Inspection Requirements

5.9.1 The operator of an organic liquid transfer facility shall inspect the vapor collection system, the vapor disposal system, and each transfer rack handling organic liquids for leaks during transfer at least once every calendar quarter using the test method prescribed in Section 6.3.8.

5.9.2 A floating roof container that meets the applicable control requirements of Section 5.0 of Rule 4623 (Storage of Organic Liquids) shall be considered not leaking for the purposes of this section.

5.9.3. All equipment that are found leaking shall be repaired or replaced within 72 hours. If the leaking component cannot be repaired or replaced within 72 hours, the component shall be taken out of service until such time the component is repaired or replaced. The repaired or replacement equipment shall be reinspected the first time the equipment is in operation after the repair or replacement.

5.9.4 An operator may apply for a written approval from the APCO to change the inspection frequency from quarterly to annually provided no leaks were found during the inspections required under provisions of Sections 5.9.1 and 5.9.2 during five consecutive quarterly inspections. Upon identification of any leak during an annual inspection the frequency would revert back to quarterly and the operator shall contact the APCO in writing within 14 days.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 An operator claiming exemption under Section 4.1 shall keep records of daily liquid throughput.

6.1.2 An operator claiming exemption under Section 4.3 of this rule shall maintain accurate daily records of liquid TVP.

6.1.2.1 Liquid TVP shall be determined using Appendix A or the applicable test method in Section 6.3.

6.1.2.2 The TVP shall be determined whenever there is a change in the type of liquid being transferred.

6.1.2.3 An operator may use a material safety data sheet (MSDS) in place of TVP testing if the transferred organic liquid is not crude oil or a petroleum distillate.

6.1.3 An operator subject to any part of Section 5.0 shall keep records of daily liquid throughput and the results of any required leak inspections.

6.1.4 Records required under Sections 6.1.1, 6.1.2, 6.1.3 shall be retained for a minimum of five years and shall be made readily available to the APCO, ARB, or EPA during normal business hours and submitted upon request to the APCO, ARB, or EPA.

6.1.5 By July 1, 2008, operators of vacuum trucks claiming exemption under Section 4.5 shall submit to the District records covering 12 consecutive months of operation. The records shall indicate all of the following:

6.1.5.1 The number of vacuum trucks in operation;

6.1.5.2 The capacity of each vacuum truck storage container;

6.1.5.3 The average monthly throughput per vehicle;

6.1.5.4 The type of organic liquid transferred; and

6.1.5.5 The VOC capture and control equipment utilized.

6.2 Compliance Testing

6.2.1 By July 20, 2009, the operator of any Class 1 or Class 2 organic liquid transfer facility shall perform an initial source test of the VOC emission control system in accordance with the method prescribed in Section 6.3.2 to determine compliance with Section 5.1 and 5.2, as applicable.

6.2.1.1 Facilities in existence prior to December 20, 2007 that have performed the test specified in Section 6.3.2 within the 60 month period preceding December 20, 2007 need not perform an initial source test.

6.2.1.2 The source testing requirements of Section 6.2.1 shall not apply to any Class 1 or Class 2 organic liquid transfer facility equipped with a closed VOC control system.

6.2.1.3 The source testing requirements of Section 6.2.1 shall not apply to any Class 1 or Class 2 organic liquid transfer facility controlling VOC by routing vapors to:

6.2.1.3.1 A fixed roof container that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids); or

6.2.1.3.2 A floating roof container that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids); or

6.2.1.3.3 A pressure vessel equipped with an APCO-approved vapor recovery system that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids).

6.2.2 The operator of any Class 1 or Class 2 organic liquid transfer facility shall perform the source test specified in Section 6.3.2 once every 60 months, but no more than 30 days before or after initial source test anniversary date.

6.3 Test Methods

6.3.1 Analysis of halogenated exempt compounds shall be by ARB Method 432.

6.3.2 Compliance with Sections 5.1 and 5.2 shall be determined using 40 CFR 60.503 "Test Methods and Procedures" and EPA Methods 2A, 2B, 25A and 25B and ARB Method 422, or ARB Test Procedure TP-203.1.

6.3.3 The TVP of any organic liquid shall be determined by measuring the Reid Vapor Pressure (RVP) using ASTM D 323 (Test Method for Vapor Pressure for Petroleum Products), and converting the RVP to TVP at the storage container's maximum organic liquid storage temperature. The conversion of RVP to TVP shall be done in accordance with the procedures in Appendix B. Appendix B is an excerpt from the oil and gas section of "ARB Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588", dated August 1989.

6.3.4 As an alternative to using ASTM D 323, the TVP of crude oil with an API gravity range of greater than 26 degrees up to 30 degrees may be determined by using other equivalent test methods approved by APCO and EPA.

6.3.5 The latest version of the Lawrence Berkeley National Laboratory "Test Method for Vapor Pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA, shall be used to determine the TVP of crude oil with an API gravity of 26 degrees or less, or for any API gravity that is specified in this test method.

6.3.6 An operator may use the information in Appendix A to determine the TVP of the stored organic liquid in a tank provided the storage temperature listed in Appendix A is not exceeded at any time.

6.3.7 The API gravity of crude oil or petroleum distillate shall be determined using ASTM Method D 287 (Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 (Standard Practices for Manual Sampling of Petroleum and Petroleum Products).

6.3.8 Compliance with facility leaks as defined in Section 3.0 shall be determined using a portable hydrocarbon detection instrument in accordance with EPA Method 21.

6.3.9 An alternative test method may be used if the alternative is approved in writing by the APCO and EPA.

6.4 Version of Test Methods

All ASTM test methods referenced in Section 6.0 are the most recently EPA-approved version that appears in the CFR as Materials Approved for Incorporation by Reference.

7.0 Compliance Schedule

7.1 Operators of transfer facility subject to this rule on or before December 20, 2007 shall be in full compliance with all applicable rule requirements on and after December 20, 2008, unless otherwise specified in the rule.

7.2 The owner or operator of any transfer facility which is subject to the requirements of this rule and which was installed or constructed after December 20, 2007, shall be in full compliance with the requirements of this rule upon initial operation.

7.3 Any organic liquid transfer facility that is exempt pursuant to Section 4.1, 4.2, and 4.3 that becomes subject to the requirements of this rule through loss of exemption shall not be operated until such time that it is in full compliance with the requirements of this rule.

Appendix A

STORAGE TEMPERATURE VERSUS VAPOR PRESSURE

ORGANIC LIQUID	Reference Properties		Maximum Temp °F Not to Exceed
	Gravity °API	IBP °F	1.5 (psia)
Middle Distillates			
Kerosene	42.5	350	250
Diesel	36.4	372	290
Gas Oil	26.2	390	310
Stove Oil	23	421	340
Jet Fuels			
JP-1	43.1	330	230
JP-3	54.7	110	25
JP-4	51.5	150	68
JP-5	39.6	355	260
JP-7	44-50	360	260
Fuel Oil			
No. 1	42.5	350	250
No. 2	36.4	372	290
No. 3	26.2	390	310
No. 4	23	421	340
No. 5	19.9	560	465
Residual	19.27	---	---
No. 6	16.2	625	---
Asphalts			
60-100 pen.	---	---	550
120-150 pen.	---	---	500
200-300 pen.	---	---	420

IBP = Initial Boiling Point

Appendix B

California Air Resources Board Technical Guidance
to the Criteria and Guidelines Regulation for AB 2588
(Partial Excerpt from pages 102, 103 and 104)

True Vapor Pressure (TVP)

RVP is the absolute pressure of volatile crude oil and nonviscous petroleum liquids. Numerically, the relationship between TVP, RVP and temperature can be expressed by the following equation:

$$TVP = (RVP)\, e^{[Co(IRTEMP - ITEMP)]}$$

Where: C_o = Constant dependent upon the value of RVP
ITEMP = $(1/559.69^oR)$
IRTEMP = $(1/(T_s + 459.69^oR))$
T_s = Temperature of the stored fluid in ^oF

The value of the constant term C_o depends upon the given value of RVP.

Values of C_o for different RVP numbers are tabulated in Table C-3. It should be noted, however, that an error was discovered in the API nomograph calculated values of TVP so that the RVP was not equal to TVP at 100^oF as was expected given the general definition of RVP. Using linear regression techniques, correction factors (C_F) were developed and should be added to the calculated values of TVP in order to obtain reasonable TVP numbers. The relationship between the three values is given as follows:

Corrected TVP = Calculated TVP + C_F

The correction factor was found to be dependent upon RVP according to the following equations:

If RVP < 3,

$C_F = (0.04) \times (RVP) + 0.1$

If RVP > 3,

$C_F = e^{[(2.3452061 \log (RVP)) - 4.132622]}$

Table C-3 VALUES OF C_o FOR DIFFERENT RVP NUMBERS

RVP	C_o
0<RVP<2	-6622.5
2<RVP<3	-6439.2
RVP = 3	-6255.9
3<RVP<4	-6212.1
RVP = 4	-6169.2
4<RVP<5	-6177.9
RVP = 5	-6186.5
5<RVP<6	-6220.4
RVP = 6	-6254.3
6<RVP<7	-6182.1
RVP = 7	-6109.8
7<RVP<8	-6238.9
RVP = 8	-6367.9
8<RVP<9	-6477.5
RVP = 9	-6587.9
9<RVP<10	-6910.5
RVP = 10	-7234.0
10<RVP<15	-8178.0
RVP > 15	-9123.2

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RULE 4625 WASTEWATER SEPARATORS (Adopted April 11, 1991; Amended May 21, 1992; Amended December 17, 1992; Amended December 15, 2011)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from wastewater separators by requiring vapor loss control devices, recordkeeping, inspection and test methods.

2.0 Applicability

This rule applies to wastewater separators including air flotation units as defined in this rule. The requirements of this rule only apply to the separation of crude oil and water after custody transfer.

3.0 Definitions

3.1 Air flotation unit: equipment used to remove suspended matter, both oil and solid, from water by dissolving air under pressure and then releasing the air at atmospheric pressure in a tank or basin.

3.2 APCO: the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District, or any person authorized to act on behalf of the APCO.

3.3 ARB: California Air Resources Board as established by the California Health and Safety Code Section 39510, or any person authorized to act on its behalf.

3.4 Custody transfer: the physical and contractual ownership transfer of produced fluids from an oil producer to another entity.

3.5 District: San Joaquin Valley Unified Air Pollution Control District.

3.6 EPA: United States Environmental Protection Agency.

3.7 Operator: includes but is not limited to any person who owns, leases, supervises, or operates a facility and/or equipment.

3.8 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.9 Wastewater Separator: any device or piece of equipment that is used to remove oil and associated chemicals from water, or any device, such as a flocculation tank, clarifier, etc. that removes petroleum-derived compounds from wastewater.

3.10 Wastewater Separator Forbay: that section of a gravity-type wastewater separator which receives the untreated, oil-water waste from the preseparator flume; and acts as a header which distributes the influent to the separator channels.

4.0 [Reserved]

5.0 Requirements

5.1 A person shall not use any compartment of any vessel or device operated for the recovery of oil or tar from effluent water, from any equipment which processes, refines, stores or handles petroleum or coal tar products unless such compartments are equipped with one of the following vapor loss control devices, except when gauging or sampling is taking place:

5.1.1 A solid cover with all openings sealed and totally enclosing the liquid contents of the compartment, except for such breathing vents as are structurally necessary; or

5.1.2 A floating pontoon or double-deck type cover, equipped with closure seals that have no holes or tears, installed and maintained so that gaps between the compartment wall and seal shall not exceed one-eighth inch for an accumulative length of 97 percent of the perimeter of the tank, and shall not exceed one-half inch for an accumulative length of the remaining three percent of the perimeter of the tank. No gap between the compartment wall and the seal shall exceed one-half inch; or

5.1.3 A vapor recovery system with a combined collection and control efficiency of at least 95 percent by weight.

5.2 Any gauging and sampling device in the compartment cover shall be equipped with a cover or lid. The cover shall be in a closed position at all times, except when the device is in actual use.

5.3 All wastewater separator forbays shall be covered.

5.4 Skimmed oil or tar removed from wastewater separating devices shall be either charged to process units with feed or transferred to a container with a control system with at least 90 percent control efficiency by weight. A control device must be under District permit.

5.5 Inspection

On and after January 1, 2013:

5.5.1 An operator complying with Section 5.1.1 shall visually inspect, the manholes, roof hatches, or other openings on the fixed roof, at least once every 12 months after the tank is initially filled with an organic liquid. No holes, tears, or other openings are allowed that would permit the escape of hydrocarbon vapors. Any defects found are violations of this rule.

5.5.2 An operator complying with Section 5.1.2 shall visually inspect, the internal floating roof and its appurtenant parts, fittings, etc., and the primary seal and/or secondary seal at least once every 12 months after the tank is initially filled with an organic liquid. Other than the gap criteria specified by this rule, no holes, tears, or other openings are allowed that would permit the escape of hydrocarbon vapors. Any defects found are violations of this rule.

5.5.3 An operator complying with Section 5.1.3 shall visually inspect the manholes, roof hatches, other openings, fittings, etc., at least once every 12 months after the tank is initially filled with an organic liquid. No holes, tears, or other openings are allowed that would permit the escape of hydrocarbon vapors. Any defects found are violations of this rule.

6.0 Administrative Requirements

6.1 Test Methods

Compliance with the requirements of Section 5.0 shall be determined in accordance with the following test methods or their equivalents as approved by the EPA and the APCO:

6.1.1 Efficiency of VOC control device shall be determined by EPA Test Method 25 and analysis of halogenated exempt compounds shall be by ARB Method 422.

6.1.2 Where add-on control equipment is utilized, collection efficiency shall be determined by the EPA document "Model Regulatory Language for Capture Efficiency Testing," August 3, 1990.

6.2 Recordkeeping

Any operator subject to Section 5.0 of this rule shall:

6.2.1 Maintain records of the type and location of each wastewater separator.

6.2.2 Record the date of inspections pursuant to Section 5.5.

6.2.3 Maintain required records for at least five years and made available to the APCO, ARB, and EPA upon request.

RULE 4641 CUTBACK, SLOW CURE, AND EMULSIFIED ASPHALT, PAVING AND MAINTENANCE OPERATIONS (Adopted April 11, 1991, Amended September 19, 1991, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to limit VOC emissions by restricting the application and manufacturing of certain types of asphalt for paving and maintenance operations.

2.0 Applicability

This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

3.0 Definitions

3.1 Asphalt: a dark-brown to black refined liquid or solid cementious material of which the main constituents are bitumens suitable for use in the manufacture of paving materials or dust palliatives.

3.2 Cutback Asphalt: paving grade asphalt liquified with petroleum distillate and conforming to specification of the American Society for Testing & Materials (ASTM) as following:

3.2.1 Rapid cure type: ASTM D2028-76 (Reapproved 1981)
3.2.2 Medium cure type: ASTM D2027-76 (Reapproved 1981)

3.3 Dust Palliative: any light application of cutback asphalt, slow cure asphalt or emulsified asphalt for the express purpose of controlling loose dust.

3.4 Emulsified Asphalt: any asphalt liquified with water containing an emulsifier. The two kinds of emulsions most pertinent are the anionic and cationic types.

3.5 Organic Compound: any compound which contains VOCs.

3.6 Paving and Maintenance Operations: all activities involved in the new construction and maintenance of roadways and parking areas.

3.7 Penetrating Prime Coat: any application of asphalt to an absorptive surface to penetrate and bind the aggregate surface and promote adhesion between it and the new superimposed construction. Prime coats do not include dust palliative or tack coats.

3.8 Road Oils: shall be synonymous with slow cure asphalt.

3.9 San Joaquin Valley Air Basin: all of San Joaquin, Stanislaus, Merced, Madera, Fresno Counties and the San Joaquin Valley Portion of Kern County.

3.10 Slow Cure Asphalt: paving grade asphalt conforming to specification of the ASTM D2026-72 (Reapproved 1979).

3.11 Tack Coat: any application of asphalt applied to an existing surface to provide a bond between new surfacing and existing surface and to eliminate slippage planes where the new and existing surfaces meet.

4.0 Exemptions

4.1 The requirements of Section 5.0 shall not apply to the manufacture of cutback asphalt or emulsified asphalt in the manufacturing of paving materials where such materials are for shipment and use outside of the District .

4.2 The requirements of Section 5.1.2 shall not apply to the use of medium cure asphalt where the National Weather Service official forecast of the high temperature for the 24 hour period following application is below 50°F.

5.0 Requirements

5.1 A person shall not manufacture for sale nor use any of the following for penetrating prime coat, tack coat, dust palliative, or other paving and maintenance operations:

5.1.1 Rapid cure cutback asphalt;

5.1.2 Medium cure cutback asphalt;

5.1.3 Slow cure asphalt which as produced for application, contains more than one-half (0.5) percent of organic compounds which evaporate at 500°F or lower.

5.1.4 Emulsified asphalt containing organic compounds, in excess of three (3) percent by volume, which evaporate at 500°F or lower.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 The manufacturer of cutback, slow cure or emulsified asphalt for dust palliative, or any other road paving and maintenance operations shall maintain records showing the types and amounts of cutback asphalt

slow cure asphalt and emulsified asphalt which contain organic compounds produced and the destination of these products.

6.1.2 The users of cutback slow cure or emulsified asphalt for penetrating prime coat, tack coat, dust palliative, or other paving and maintenance operations shall maintain records showing the types, amounts received, and amounts used.

6.1.3 Such records shall be maintained daily and retained and available for inspection by the APCO for the previous 24 month period.

6.2 Test Methods

6.2.1 Analysis of cutback asphalt samples for VOC content shall be in accordance with ASTM Method D402-76 (Reapproved 1987).

6.2.2 Analysis of emulsified asphalt samples for VOC content shall be in accordance with ASTM Method D244-88.

6.2.3 Analysis for halogenated exempt compounds shall be by ARB Method 432.

7.0 Compliance Schedule

All manufacturers and users of cutback, slow cure, and emulsified asphalt which are subject to this rule shall be in full compliance with the provisions of this rule by November 1, 1991.

9/29/98

RULE 4642 SOLID WASTE DISPOSAL SITES (Adopted July 20, 1995; Amended April 16, 1998)

1.0 Purpose

The purpose of this rule is to reduce volatile organic compound (VOC) emissions from solid waste disposal sites.

2.0 Applicability

The provisions of this rule apply to any solid waste disposal sites which has a gas collection system and/or control device in operation, or undergoing maintenance or repair.

3.0 Definitions

3.1 Control Device: any equipment which disposes of the collected gas through combustion, on-site gas treatment and subsequent sale, sale and processing off-site, or other equivalent methods.

3.2 Active Disposal Area: An area in a landfill that has not been closed pursuant to California Code of Regulations Title 14, Chapter 3, Article 7.8 and Title 23, Chapter 15, Article 8.

3.3 Destruction Efficiency: a measure of the efficiency of the control device to combust, transform, or otherwise prevent the emissions of VOC-containing landfill gases to the atmosphere.

3.4 Enclosed Flare: a flare which is composed of multiple gas burners that are grouped in an enclosure, and are staged to operate at a wide range of flow rates. The basic elements of an enclosed flare system are described in the California Air Resources Board's Suggested Control Measure for Landfill Gas Emissions, Appendix E, Section C.1, dated September 13, 1990.

3.5 Energy Recovery Device: any combustion device which uses landfill gas to produce energy in the form of steam or electricity, including, but not limited to, gas turbines, internal combustion engines and boilers.

3.6 Gas Collection System: any device which employs mechanical blowers or compressors to create a pressure gradient and extract landfill gas.

3.7 Hazardous Waste: defined in California Code of Regulation Title 14, Division 7, Chapter 3 (Minimum Standards for Solid Waste Handling and Disposal).

3.8 Landfill: any location within the solid waste disposal site used for the permanent disposal of waste where the organic portion of the waste is subject to the natural process of aerobic and anaerobic decomposition.

3.9 Landfill Gas: any untreated, raw gas derived through a natural process from the decomposition of organic waste deposited in a landfill, from the evolution of organic species in the waste, or from chemical reactions of substances in the waste.

3.10 Maintenance: work performed on a gas collection system and/or control device in order to ensure continued compliance with District rules, regulations, and/or Permits to Operate, and to prevent its failure or malfunction.

3.11 Minimization: the shutting of valves, insertion of sewer plugs, or any other similar method that reduces emissions of landfill gas to the atmosphere.

3.12 Non-repeatable, Momentary Readings: indications of the presence of organic gases on a portable hydrocarbon detection instrument which persist for less than five seconds and do not recur when the sampling probe is placed in the same location.

3.13 Open Flare: a vertically or horizontally oriented open pipe flare from which gases are released into the air before combustion is commenced.

3.14 Operator: the owner of a solid waste disposal site and any other person who through lease, franchise agreement, or any other arrangement with the landowner becomes responsible to the APCO for the following requirements for a solid waste disposal site:

3.14.1 Obtaining Authority to Construct and/or Permit to Operate for a gas collections system and control device;

3.14.2 Complying with all applicable local air pollution requirements;

3.14.3 The physical operation of the gas collection system and control device; and

3.14.4 Maintaining the gas collection system and control device during the post closure maintenance period.

3.15 Portable Hydrocarbon Detection Instrument: a hand held hydrocarbon analyzer using detector types which include, but are not limited to, conductivity, flame ionization, catalytic oxidation, infrared absorption, and photo-ionization, which meet the requirements of USEPA Test Method 21, 40 CFR Part 60.

3.16 Repair: work performed on a gas collection system and/or control device in order to return it to compliance with District rules, regulations and/or Permits to operate.

3.17 Solid Waste: all putrescible and non-putrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid wastes, sludge, and other discarded solid and semisolid wastes.

3.18 Solid Waste Disposal Site: the place, location, tract of land, area, or premises in use, intended to be used, or which has been used for the landfill disposal of wastes and/or evaporation of liquid chemical wastes.

3.19 Total Organic Compounds: all hydrocarbon compounds containing hydrogen and carbon with or without other chemical elements.

3.20 Volatile Organic Compound (VOC): defined in Rule 1020 (Definitions).

4.0 Exemptions

4.1 The requirements of this rule shall not apply to:

4.1.1 Active disposal areas in a landfill.

4.1.2 Any solid waste disposal site which is subject to the requirements of 40 CFR 60 Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills), or Subpart Cc (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills).

4.1.3 Hazardous waste disposal sites.

4.2 The requirements of Section 5.1 and 5.2 shall not apply to solid waste disposal sites during maintenance of the landfill gas collection system and/or control device provided the requirements of Section 5.4 are met.

4.3 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of this rule shall be exempt from Best Available Control Technology and Offset requirements of Rule 2201 (New and Modified Stationary Source Review Rule) for all air pollutants provided the conditions in Sections 4.3.1 through 4.3.4 are met.

4.3.1 there shall be no change in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;

4.3.2 there shall be no change in the permitted rating or permitted operating schedule of the permitted unit;

4.3.3 there shall no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.3.4 the project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NOx, or 25 tons per year of VOC, or 15 tons per year of SOx, or 15 tons per year of PM-10, or 50 tons per year of CO.

5.0 Requirements

5.1 Solid Waste Disposal Site Gas Collection System

5.1.1 The gas collection system shall be operated in such a manner that the surface emissions testing of the landfill shows the concentrations of total organic compounds (measured as methane) do not exceed 1,000 ppmv at any point on the surface of the solid waste disposal site or along the gas transfer path of the gas collection system. Sampling ports shall be installed on each well head. Surface emissions testing shall be conducted according to Section 6.1.1.

5.1.2 The gas collection system shall be operated in a manner which maximizes the amount of landfill gas extracted while preventing overdraw that can cause fires or damage the gas collection system.

5.1.3 All landfill gas collected by a gas collection system shall be controlled by a control device which meets the requirements of Section 5.2.

5.2 Control Device

5.2.1 Except for control devices subject to Section 5.2.2, a control device shall achieve a VOC destruction efficiency of at least 98 percent by weight, or reduce the VOC concentration to 20 ppmv or less (measured as methane) corrected to 3 percent oxygen.

5.2.2 For control devices which have an Authority to Construct issued prior to July 20, 1995, such control devices shall achieve a destruction efficiency

of at least 90 percent by weight or reduce the VOC concentration to 30 ppmv or less (measured as methane) corrected to 3 percent oxygen.

5.2.3 Compliance with the VOC destruction efficiency requirement shall be verified in accordance with Section 6.1.4 and 6.3.2.

5.2.4 An enclosed flare or an open flare may be used as a control device provided the operator submits, for approval by the APCO, a flare manufacturer's written guarantee and supporting data to demonstrate that the flare achieves the VOC destruction efficiency in Section 5.2.1 or 5.2.2. The operator shall maintain and operate the flare according to the manufacturer's specification, and shall meet the following operational requirements:

5.2.4.1 An enclosed flare shall be operated in accordance with the applicable provisions of 40 CFR 60.756(b) and 40 CFR 60.18.

5.2.4.2 An open flare shall be operated in accordance with the applicable provisions of and 40 CFR 60.756(c) and 40 CFR 60.18.

5.3 Emission Control During Excavation of Solid Waste

Whenever buried solid waste is brought to the surface during the installation or preparation of wells, trenches, piping, or other equipment or when landfill solid waste is excavated or moved, the operator shall cover the excavated solid waste using fresh soil, plastic sheeting, or vapor retarding foam as necessary in order to prevent odorous emissions and to minimize the release of landfill gas.

5.4 Emission Control During Maintenance

During maintenance of the gas collection system and/or control device the following conditions shall be met:

5.4.1 Notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work.

5.4.2 Emissions of landfill gas to the atmosphere shall be minimized during shutdown.

5.4.3 The gas collection system and/or control device shall not be shut down for more than 144 cumulative hours in any calendar year.

6.0 Administrative Requirements

6.1 Test Methods

6.1.1 Surface Emissions Testing

The operator shall perform the surface emission testing of solid waste disposal sites in accordance with Sections 6.1.1 and 6.3.1 to insure the requirements of Section 5.1 are met. Prior to testing, the operator shall submit a written Surface Emission Testing Protocol for approval by the APCO. The testing protocol shall meet the following requirements:

6.1.1.1 Testing shall be conducted using a portable hydrocarbon detection test instrument. The instrument shall be calibrated before and after each test using zero air and an approximately 500 parts per million by volume (ppmv) methane based standard calibration gas in accordance with the manufacturer's recommendations. The instrument serial number and instrument calibration data shall be recorded for each calibration and maintained as a permanent record.

6.1.1.2 Testing shall be performed by holding the detector probe within three inches of the surface while walking a pattern of parallel paths not more than 90 feet apart over the entire surface area of the solid waste disposal site which contains buried refuse, and along the gas transfer path of the gas collection system. The operator shall monitor the instrument readings at least once every 30 seconds, at normal walking speed (approximately 2 miles per hour), record only the readings that exceed 1,000 ppmv, and geographically locate the specific area on the landfill surface where the exceedances occur. Cracks, holes and other breaches in the solid waste disposal site cover, as well as areas where buried waste interfaces with undisturbed native soil, shall be tested. Sampling is not required on steep slopes or other areas posing an unavoidable hazard to testing personnel.

6.1.1.3 Testing 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 shall be

determined on a ten-minute average using an on-site anemometer. The APCO may approve exceptions to the wind speed requirement for solid waste disposal sites which consistently have winds in excess of these limits. Application for this exemption must be made in writing prior to testing.

6.1.1.4 Testing shall be conducted when the solid waste disposal site is dry and no rain is falling. The site is considered dry when there has been no rain for 72 hours prior to testing.

6.1.2 Measurement of the volumetric flow shall be performed using CARB Method 2.

6.1.3 Heating value of process gas shall be determined by using the latest revision of test method ASTM D1826 or ASTM D3588.

6.1.4 The destruction efficiency of the control device shall be evaluated as follows:

6.1.4.1 The operator shall measure, in dry standard cubic feet, the volumetric flow rate of the collected landfill gas entering the control device and the volumetric flow rate of the control device effluent gases;

6.1.4.2 Simultaneous grab samples shall be taken at the inlet to the control device and in the control device. The VOC concentrations of the samples shall be determined by using USEPA Test Method 25;

6.1.4.3 The control device destruction efficiency shall be computed using the following equation:

$$Destruction\ Efficiency = [1 - \frac{VOC_o\ x\ exhaust\ flow}{VOC_i\ x\ inlet\ flow}]\ x\ 100\%$$

Where:

VOC_o = measured concentration of VOC in the control device exhaust

VOC_i = measured concentration of VOC in the landfill gas entering the control device

6.2 Recordkeeping

The operator shall maintain the following written records for a period of five years from the date of each entry. The records shall be made available during normal business hours from Monday through Friday, and shall be submitted to the APCO upon request.

6.2.1 Records of surface emissions tests including: the time; weather conditions, including precipitation records; areas sampled; calibration records; and test results.

6.2.2 If applicable, emission control device source test reports showing the VOC destruction efficiency.

6.2.3 If applicable, records of flare combustion temperature including the dates and times of temperature readings, net heating value of landfill gas being combusted, volumetric gas flow rate and flare exit velocity.

6.2.4 Maintenance-related or other collection system and control device downtime, including individual well shutdown.

6.3 Compliance Testing

The operator shall notify the District not later than 30 days prior to any compliance test required by Section 6.3.1 and 6.3.2. Compliance test reports shall be submitted to the District within 60 days of completion of testing.

6.3.1 Surface emissions testing performed to evaluate the effectiveness of a gas collection system shall be conducted at least once in every six month period per calendar year. Upon completion of two successive semi-annual tests without an exceedance of the 1,000 ppmv standard, other than non-repeatable, momentary readings, the testing frequency may be reduced to once every calendar year. Subsequent exceedances of the 1,000 ppmv standard shall result in the re-establishment of the semi-annual testing requirement.

6.3.2 Compliance source testing of an energy recovery device used as a control device shall be conducted in accordance with the testing requirements of other applicable District's rules.

6.4 Emission Control Plan

The operator of a solid waste disposal site subject to this rule shall submit an Emission Control Plan as required by Section 7.3 to the APCO indicating the actions to be taken to comply with the requirements of the rule. A written

approval of the plan shall be obtained from the APCO prior to implementing the plan. As operating experience is gained and site conditions change, the plan may be revised subject to the approval of the APCO. The plan shall, at a minimum, contain:

6.4.1 An engineering evaluation of the expected landfill gas generation rate and design specifications which demonstrate that the gas collection system will meet the requirements of this rule;

6.4.2 A map showing the location, spacing, and depths of extraction wells or trenches, and the direction of flow through the header system to the control device;

6.4.3 A map showing the areas with steep slopes and other safety hazards to personnel performing the surface emissions testing. A brief explanation of these hazards must be given;

6.4.4 Locations of sampling probes;

6.4.5 A schedule detailing inspection and maintenance intervals. The schedule must include the dates and durations of expected system shutdowns as well as the work or maintenance expected;

6.4.6 Written justification for less than continuous operation of the gas collection system;

6.4.7 Operating procedures including system start-up, balancing, routine maintenance, and shutdown;

6.4.8 Qualifications and training requirements for all on-site personnel;

6.4.9 A description of techniques used to ensure that excess vacuum and gas withdrawal resulting in air intrusion into the landfill are minimized.

7.0 Compliance Schedule

7.1 By July 20, 1996, the operator shall submit a Surface Emissions Testing Protocol to the APCO for approval.

7.2 Within 12 months after approval of the Surface Emission Testing Protocol by the APCO, the operator shall achieve full compliance with the requirements of this rule.

7.3 If any two (2) or more surface emissions tests exceed the 1,000 ppmv standard, the operator shall:

7.3.1 submit an Emission Control Plan and a complete application for Authority to Construct, if necessary, within 12 months from the date of the second test failure;

7.3.2 be in full compliance with the rule within 12 months after the Authority to Construct is issued, or after approval of the Emission Control Plan; and

7.3.3 conduct compliance testing pursuant to Sections 6.3.1 and 6.3.2.

RULE 4651 SOIL DECONTAMINATION OPERATIONS (Adopted April 16, 1992; Amended December 17, 1992; Amended September 20, 2007)

1.0 Purpose

The purpose of this rule is to limit volatile organic compound (VOC) emissions from soil that has been contaminated with a VOC-containing liquid.

2.0 Applicability

This rule shall apply to operations involved in the excavation, transportation, handling, decontamination, and disposal of contaminated soil.

3.0 Definitions

3.1 Aeration: exposure of excavated soil containing volatile organic compounds to the atmosphere.

3.2 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.3 Approved: requirements accepted by the APCO and EPA that have been determined to be in compliance with Rule 4651 or a permitted facility that satisfy the requirements of Rule 4651.

3.4 Contaminated Soil: soil which registers fifty (50) ppmv or greater of VOC concentration before suppression materials have been applied when measured as hexane at a distance of three (3) inches above the surface with an organic vapor analyzer, or soil containing VOC which has been identified for decontamination or disposal by the designated lead agency.

3.5 Decontamination: the removal, destruction, remediation, or encapsulation of VOC from contaminated soil according to Section 5.4.

3.6 Decontaminated Soil: soil that has undergone the decontamination process. For the purposes of this rule, decontaminated soil is still considered contaminated unless it satisfies the requirements of Section 5.4.6.

3.7 District: as defined in Rule 1020 (Definitions).

3.8 Emergency Excavation: an excavation of contaminated soil carried out pursuant to an order of a state or local government agency issued because the contaminated soil poses an imminent threat to public health, safety, or the environment.

3.9 EPA: the United States Environmental Protection Agency or any person designated to act on its behalf.

3.10 Excavation: the process of exposing, digging out, and removing contaminated soil, including but not limited to digging out and removal of soil, sand, asphalt, concrete, or other materials necessary to expose the contaminated soil.

3.11 Facility: a portion of real property that is on one or more contiguous or adjacent properties all of which are under common ownership or control. A facility includes, but is not limited to, all buildings, storage areas, installations, structures, VOC control systems, and treatment of contaminated soil on the properties.

3.12 Operation: any physical action resulting in a change in the location, form, or physical properties of a material, or any chemical action resulting in a change in the chemical composition or the chemical or physical properties of a material.

3.13 Operator: includes but is not limited to any person who owns, leases, supervises, or operates a facility and equipment.

3.14 Organic Vapor Analyzer: a hydrocarbon analyzer, which satisfies the specification requirements of EPA Method 21, 40 CFR Part 60.

3.15 Petroleum: crude oil or any fraction thereof that is liquid at Standard Conditions of temperature and pressure (60°F and 14.7 pounds per square inch absolute), including, but is not limited to aviation fuel, gasoline, kerosene, fuel oils, diesel, and other related hydrocarbons.

3.16 Storage Pile: For the purposes of this rule, any pile of soil resulting from operations related to the excavation of contaminated soil.

3.17 Uncontaminated Soil: soil which registers below fifty (50) ppmv of VOC concentration before suppression materials have been applied when measured as hexane at a distance of three (3) inches above the surface of the excavated soil with an organic vapor analyzer or decontaminated soil which registers below 50 ppmw of VOC content or soil that has been identified as uncontaminated by the designated lead agency.

3.18 Vapor Suppressant: At least six (6) inches of uncontaminated soil or any material that is demonstrated to reduce VOC emissions into the atmosphere from contaminated soil by at least 10%.

3.19 VOC Control Device: any machine or technology used to reduce VOC emissions from contaminated soil. Such devices include, but are not limited to, thermal oxidizers, carbon canisters, or incineration devices.

3.20 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

4.0 Exemptions

4.1 The requirements of this rule shall not apply to:

4.1.1 Excavation, handling, transportation, and decontamination of less than one (1) cubic yard of contaminated soil per occurrence.

4.1.2 Operations related to the accidental spillage of five (5) gallons or less of VOC-containing liquid per occurrence.

4.1.3 Contaminated soil exposed for the sole purpose of sampling.

4.1.4 Soil contaminated solely by a known VOC-containing liquid or a petroleum liquid that has an initial boiling point of 302°F or higher, as determined by Section 6.5.1, provided that the soil is not heated above ambient temperature and samples of the contaminating liquid can be obtained.

4.2 Except for the administrative requirements in Section 6.3.1, the rule requirements shall not apply to operations related to the accidental spillage of more than five (5) gallons but no more than 42 gallons of VOC-containing liquid.

4.3 Except for the requirements in Section 4.3.1 to Section 4.3.5, the requirements of this rule shall not apply to the emergency excavation of contaminated soil performed by, at the direction of, under the jurisdiction of, or pursuant to the requirements of, an authorized health officer, agricultural commissioner, fire protection officer, or other authorized state or local government officer.

4.3.1 Whenever possible, the APCO shall be notified by fax or by other approved methods prior to commencing such excavation of contaminated soil.

4.3.2 No later than 48 hours following the commencement of the excavation, the operator shall notify the APCO in writing, in accordance with Section 6.1. No later than 30 working days after excavation is completed, the operator shall provide the APCO a written verification of completion of the emergency excavation, in accordance with Section 6.2.

4.3.3 The operator shall maintain records pursuant to Section 6.3.1.

4.3.4 The operator shall cover the excavated contaminated soil with a tarp or other covering within 24 hours of excavation. Within 30 days of excavation, the soil shall be decontaminated, recycled, disposed of in an approved facility, or returned to excavation and permanently covered with at least six (6) inches of uncontaminated soil, unless otherwise directed by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized state or local government officer.

4.3.5 The operator shall also comply with all applicable requirements of Section 5.3 and Section 5.4.

5.0 Requirements

5.1 Excavation of Contaminated Soil

The operator excavating contaminated soil shall comply with the following:

5.1.1 A written notice, according to Section 6.1, shall be submitted to the APCO prior to commencement of excavation of known contaminated soil. Where contaminated soil is discovered during excavation, operators shall provide written notice according to Section 6.1 within 48 hours after detection. No later than 30 working days after excavation is completed, the operator shall provide the APCO a written verification of completion of the excavation, in accordance with Section 6.2.

5.1.2 Any excavation of soil resulting from operations related to contaminated soil shall be monitored for VOC contamination during the excavation and at least once every 15 minutes, unless the excavated soil is treated according to Section 5.2.1.

5.1.2.1 All readings shall be taken using the applicable test methods in Section 6.5.2.

5.1.2.2 All VOC concentration readings shall be recorded according to Section 6.3.4.

5.1.3 Excavated soil that has been detected as contaminated soil shall be placed in storage piles and handled as required by Section 5.2, and

5.1.4 Excavated contaminated soil shall be decontaminated, recycled, disposed of in an approved facility, returned to excavation and permanently covered with at least six (6) inches of uncontaminated soil, or transported to a location outside of the San Joaquin Valley Air Basin within thirty

(30) calendar days from the time of excavation or as directed by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized state or local government officer having jurisdiction.

5.2 Handling of Contaminated Soil

The operator handling contaminated soil shall comply with the following:

5.2.1 For VOC concentration of the excavated contaminated soil measuring at 1,000 ppm or greater, the contaminated soil shall be sprayed with water or vapor suppressant and be subject to the following requirements in addition to all applicable requirements of the rule:

5.2.1.1 Place the contaminated soil in sealed containers as soon as possible, but no more than 30 minutes after excavation, and handle pursuant to Section 5.1.4, or

5.2.1.2 Load the contaminated soil into trucks as soon as possible but no more than 30 minutes after excavation, moisten with additional water, cover as required in Section 5.3, and transport immediately to an approved facility, or

5.2.1.3 Implement other approved alternative storage methods and handle pursuant to Section 5.1.4.

5.2.2 Storage piles of contaminated soil shall be clearly isolated and identifiable from storage piles of uncontaminated soil according to Section 6.3.2,

5.2.3 Storage piles of contaminated soil that have been inactive for more than 60 consecutive minutes shall be subject to one of the following:

5.2.3.1 Treat with water or a vapor suppressant and cover with heavy-duty plastic sheeting to reduce VOC emissions. The covering shall have at least a six-feet overlap of adjacent sheets, be securely anchored, and have minimal headspace where vapors may accumulate, or

5.2.3.2 Cover with a layer of uncontaminated soil no less than six (6) inches deep.

5.2.4 A visual inspection of all storage piles of contaminated soil shall be conducted at least once every 24 hours, except when operators do not report to the facility for a given 24-hour period, to ensure the integrity of the covered surfaces and compliance with Section 5.2.5. Record of the visual inspections shall be maintained pursuant to Section 6.3.3.

5.2.5 Aeration of contaminated soil shall not be allowed except that which occurs during removal or addition of contaminated soil to a storage pile. This prohibition includes the use of contaminated soil in daily, intermediate, or final cover operations at disposal sites.

5.3 Transportation of Contaminated Soil

The operator transporting contaminated soil, whether by truck or other means of transportation, shall comply with all of the following prior to leaving the facility:

5.3.1 Any truck or trailer transporting contaminated soil shall be filled such that contaminated soil does not extend above the sides or rear of the truck,

5.3.2 Contaminated soil shall be treated with water or a vapor suppressant and covered with an continuous heavy duty plastic sheeting or other covering to prevent spillage of contaminated soil during transport, and

5.3.3 Chain-of-custody records shall be maintained according to Section 6.3.1 by the operators to document transfer of the transported contaminated soil.

5.4 Ex-situ Decontamination of Contaminated Soil

The operator decontaminating soil shall comply with the following:

5.4.1 VOC emissions from the decontamination of contaminated soil shall be controlled by one of the following:

5.4.1.1 Installation and operation of a VOC collection and control device with a VOC destruction or removal efficiency of at least 95%, or

5.4.1.2 Any other approved VOC control device demonstrated to be equivalent.

5.4.2 Key system operating parameters shall be monitored to demonstrate compliance of the VOC control device during decontamination operations. Examples of key system operating parameters may include, but are not limited to, temperatures, pressures, and flow rates.

5.4.3 VOC control device shall be operated and maintained in accordance with the manufacturer's recommendations and any additional operating and maintenance standards determined necessary by the APCO and EPA to ensure proper operation of the VOC control device.

5.4.4 Decontaminated soil shall be subject to the following requirements:

5.4.4.1 Monitor soil for contamination using the test method in Section 6.5.2 and

5.4.4.2 Record all VOC concentration readings according to Section 6.3.4.

5.4.5 Decontaminated soil measured as contaminated shall comply with all applicable requirements of this rule and be subject to one of the following:

5.4.5.1 Return the contaminated soil to the excavation and permanently cover with six (6) inches or more of uncontaminated soil, or

5.4.5.2 Decontaminate the contaminated soil to the extent that the soil is no longer considered contaminated as defined in Section 3.17, or

5.4.5.3 Transport the contaminated soil to an approved disposal facility, or

5.4.5.4 Transport the contaminated soil to an approved treatment or recycling facility, or

5.4.5.5 Transport the contaminated soil to a location outside of the San Joaquin Valley Air Basin.

5.4.6 Decontaminated soil that is to be treated as uncontaminated soil shall require soil samples to be obtained from each storage pile of according to Section 6.6 and tested using the applicable test methods in Section 6.5.3 or Section 6.5.4.

6.0 Administrative Requirements

6.1 Written Notice of Excavation Activity

The operator shall include the following information in the notice of excavation activities required by Sections 4.3 and 5.1:

6.1.1 Names and addresses of operator(s) performing and responsible for excavation,

6.1.2 Location of site where excavation will occur,

6.1.3 Scheduled starting date of excavation. If the excavation does not commence on the start date, renotification is required,

6.1.4 Estimated volume of soil to be excavated,

6.1.5 Estimated volume (in gallons) of VOC liquid spilled in the soil, if known, and

6.1.6 Where emergency excavation is conducted at the direction of an authorized officer, pursuant to Section 4.3: name, title and contact information of the authorized officer, and a copy of the signed emergency declaration from the authorized officer.

6.2 Written Verification of Completion of Excavation Activity

The operator shall include the following information in the written verification as required by Section 4.3 and Section 5.1.

6.2.1 Names and addresses of operator(s) performing and responsible for excavation,

6.2.2 Address of site where excavation occurred,

6.2.3 Date(s) of excavation,

6.2.4 Estimated volume of contaminated soil excavated, and

6.2.5 Estimated average VOC content of the contaminated soil or estimated volume of VOC contaminant, and

6.2.6 Final disposition of the contaminated soil.

6.3 Recordkeeping

Records shall be retained for at least five (5) years, shall be readily available, and shall be made available to the APCO upon request.

6.3.1 Recordkeeping Requirements for Chain-of-Custody:

Operators shall maintain records at the time custody is transferred. Records shall include but are not limited to the following:

6.3.1.1 The identities and business addresses of the relevant parties such as the generator, transporter, and storage/treatment facilities,

6.3.1.2 The volume of contaminated soil generated or received,

6.3.1.3 All analytical data associated with the contaminated soil (this section does not apply to Section 4.3),

6.3.1.4 The date and location of excavation of the contaminated soil, and

6.3.1.5 The date and signatures of the operators at the time custody is transferred.

6.3.2 Recordkeeping Requirements for Excavated Storage Piles

Each storage pile shall be identified according to, but not limited to, the following information:

6.3.2.1 Location of storage pile.

6.3.2.2 Unique identification of storage pile.

6.3.2.3 Date that soil storage pile was excavated.

6.3.3 Recordkeeping Requirements for Visual Inspection

Operators shall maintain visual inspection records at least once every 24 hours except when operators do not report to the facility for that given 24 hours. The records shall include, but are not limited to the following information:

6.3.3.1 Location and unique identification of each specific storage pile.

6.3.3.2 Name, date, and signature of operator inspecting the storage piles.

6.3.4 Recordkeeping Requirements for VOC concentration readings pursuant to Section 5.1 and Section 5.4.

6.3.4.1 The identities and business addresses of the relevant parties such as the generator or storage/treatment facilities,

6.3.4.2 The volume of contaminated or decontaminated soil,

6.3.4.3 Date of contaminated or decontaminated soil,

6.3.4.4 VOC concentration reading, and

6.3.4.5 The origin of the contaminated or decontaminated soil.

6.3.5 Calibrations for all approved monitoring instruments shall be recorded and kept available onsite.

6.4 Testing Requirements

6.4.1 The operator of a VOC control device used to decontaminate excavated soil shall demonstrate compliance with the requirements of Section 5.4.1 before operation of such system.

6.4.2 Source sampling to determine the compliance status of an emissions source shall be witnessed or authorized by District personnel.

6.4.3 The operator of the facility shall maintain a copy of the source test protocol. A copy of the source test results must be maintained for at least five years and be readily available to the APCO upon written or oral request.

6.5 Test Methods

Test methods referenced shall be the latest approved method. The following methods shall be used:

6.5.1 The initial boiling point of a liquid from samples of contaminated soil shall be measured in accordance with one of the following applicable methods:

6.5.1.1 ASTM D86 for soil contaminated with petroleum liquid or

6.5.1.2 ASTM D-1078-93 for soil contaminated with known organic chemical.

6.5.2 The VOC concentration of soils shall be measured as hexane using an organic vapor analyzer, complying with EPA Reference Method 21.

6.5.3 The VOC content of soil that can be reasonably demonstrated to be contaminated only with petroleum shall be determined by using EPA Reference Method 8015 or EPA Test Method 25D.

6.5.4 The VOC content of soil that is contaminated by unknown VOC-containing liquids, or that cannot be reasonably demonstrated to be contaminated only with petroleum, shall be determined by using EPA Reference Method 8015 or EPA Test Method 25D. In addition to one of the aforementioned methods, the operator shall use EPA Reference Method 8260B or the gas chromatographic method in the Leaking Underground Fuel Tank (LUFT) Manual (October 1989).

6.5.5 An operator may use an equivalent alternative test method to those listed in Sections 6.5.1 through 6.5.4 for which APCO and EPA approval has been obtained.

6.5.6 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.

6.6 Soil Sampling Procedure for Decontaminated Soil

6.6.1 One composite sample shall be collected and analyzed for VOC for every 50 cubic yards of excavated soil that has been determined to be uncontaminated by the test method in Section 6.5.2. At least one (1) composite sample shall be collected from each storage pile within 12 hours of soil decontamination.

6.6.2 A composite sample shall consist of one sample taken from the center of each of four (4) equal sectors using the procedures described in Section 6.6.3 or other approved methods.

6.6.3 Samples shall be taken from at least twelve (12) inches below the surface of the pile using a driven-tube type sampler, capped and sealed with inert materials, and extruded in the lab in order to reduce the loss of volatile materials; or by using a clean brass or stainless steel tube (at least twelve

(12) inches long) driven into the soil with a suitable instrument. The ends of the brass tube shall then be covered with aluminum foil, then plastic end caps, and finally wrapped with a suitable tape. The samples shall then be immediately placed on ice, or dry ice, for transport to a laboratory.

6.6.4 Chain-of-custody records shall be kept by the operators to document possession of a sample from the time it is taken in the field until it is analyzed.

7.0. Compliance Schedule

7.1 All contaminated soil excavation, handling, transporting, and decontamination projects shall be in compliance with the rule on and after March 20, 2008.

7.2 Any VOC control device whose initial installation occurs on or after September 20, 2007 shall be in full compliance with the requirements of the rule upon initial operation.

7.3 Any VOC control device installed prior to September 20, 2007 shall be in full compliance with the requirements of the rule no later than March 20, 2008.

RULE 4653 ADHESIVES AND SEALANTS (Adopted March 17, 1994; Amended April 13, 1995; Amended March 19, 1998; Amended December 14, 2000; Amended December 20, 2001; Amended September 20, 2007; Amended September 17, 2009; Amended September 16, 2010)

1.0 Purpose

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs) from the application of adhesive products, sealant products, and associated solvent cleaning operations.

2.0 Applicability

This rule is applicable to any person who supplies, sells, offers for sale, or applies any adhesive product, sealant product, or associated solvent, used within the District.

3.0 Definitions

The following definitions apply for the purpose of this rule.

3.1 ABS Welding Adhesive: an adhesive that is intended by the manufacturer to weld acrylonitrile butadiene styrene (ABS) plastic. ABS is made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with ABS marking.

3.2 Acrylic: a thermoplastic polymer or copolymer of acrylic acid, metharcrylic acid, esters of these acids, or acrylonitrile.

3.3 Acrylonitrile-Butadiene-Styrene (ABS): a plastic made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with ABS marking.

3.4 Acrylonitrile-Butadiene-Styrene (ABS) welding: a process used to weld acrylonitrile-butadiene-styrene pipe.

3.5 Adhesive: a substance intended by the manufacturer to be applied for the purpose of bonding two surfaces together other than by mechanical means.

3.6 Adhesive Primer: a product intended by the manufacturer for application to a substrate, prior to the application of an adhesive, to provide a bonding surface.

3.7 Adhesive Product: an adhesive product includes, but is not limited to adhesives, glues, cements, mastic, adhesive bonding primers, adhesive primers, adhesive primers for plastics, and any other adhesive primer.

3.8 Aerosol Adhesive or Adhesive Primer: an adhesive or adhesive primer packaged as an aerosol product in which the spray mechanism is permanently housed in a non-refillable can designed for handheld application without the need for ancillary hoses or spray equipment.

3.9 Airless Spray: a spray method in which a pump forces the adhesive through an atomizing nozzle at high pressure (1,000 to 6,000 psi).

3.10 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.11 Appurtenances: an accessory to a stationary structure, whether installed or detached. Appurtenances include but are not limited to: bathroom and kitchen fixtures; cabinets; concrete forms; doors; elevators; fences; hand railings; heating equipment, air conditioning equipment, and other fixed mechanical equipment or stationary tools; lampposts; partitions; pipes and piping systems; rain gutters and downspouts; stairways, fixed ladders, catwalks, and fire escapes; and window screens.

3.12 Application Equipment: a device, including, but not limited to, a spray gun, brush, and roller, used to apply adhesives, sealants, coatings, or inks.

3.13 ARB: California Air Resources Board.

3.14 Architectural: pertaining to stationary structures including buildings, houses, and mobile homes, and their appurtenances.

3.15 Architectural Sealant: a sealant intended by the manufacturer to be applied on stationary structures, including mobile homes, and their appurtenances.

3.16 Architectural Sealant Primer–Nonporous: a sealant primer intended by the manufacturer to be applied to nonporous material surfaces on stationary structures, including mobile homes, and their appurtenances.

3.17 Architectural Sealant Primer–Porous: a sealant primer intended by the manufacturer to be applied to porous material surfaces on stationary structures, including mobile homes, and their appurtenances.

3.18 ASTM: American Society for Testing and Materials.

3.19 Automotive Glass Primer: an adhesive primer intended by the manufacturer to be applied to automotive glass prior to installation of an adhesive/sealant that improves adhesion to the pinch weld and blocks ultraviolet light used at a facility that is not an automobile or light-duty truck assembly coating facility pursuant to District Rule 4602.

3.20 Bench Scale Project: a project (other than at a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top.

3.21 Carpet Pad Adhesive: an adhesive intended by the manufacturer to be used for the installation of a carpet pad (or cushion) beneath a carpet.

3.22 Cellulosic Plastics: a plastic containing the naturally occurring polymer or polysaccharide, cellulose ($C_6H_{10}O_5$). Examples include, but are not limited to, cellulose acetate, cellulose acetate butyrate, cellulose nitrate and cellulose propionate.

3.23 Ceramic Tile: ceramic surfacing unit made from clay or a mixture of clay and other materials.

3.24 Ceramic Tile Installation Adhesive: an adhesive that is intended by the manufacturer to be used for installation of ceramic tiles.

3.25 CFR: Code of Federal Regulations.

3.26 Chlorinated Polyvinyl Chloride Plastic (CPVC plastic): a polymer of the vinyl chloride monomer that contains 67% chlorine and is normally identified with a CPVC marking.

3.27 Chlorinated Polyvinyl Chloride Welding (CPVC welding) Adhesive: an adhesive intended by the manufacturer for welding of chlorinated polyvinyl chloride plastic, and labeled as such.

3.28 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.29 Contact Adhesive: an adhesive, also known as Contact Bond Adhesive, that is intended by the manufacturer for application to both surfaces to be bonded together, is allowed to dry before the two surfaces are placed in contact with each other, forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other, and does not need sustained pressure or clamping of surfaces after the adhesive-coated surfaces have been brought together using sufficient momentary pressure to establish full contact between both surfaces. Contact adhesive does not include rubber cements that are primarily intended for use on paper substrates. Contact adhesive also does not include vulcanizing fluids that are designed and labeled for tire repair only.

3.30 Contact Adhesive-Specialty: a contact adhesive that is intended by the manufacturer to be used for the bonding of nonporous substrates to each other, the bonding of decorative laminate in post-forming applications, the bonding of decorative laminate to metal, melamine-covered board, or curved surfaces, or the bonding of any substrate to metal, rubber, rigid plastic, or wood veneer not exceeding 1/16 inch in thickness.

3.31 Cove Base: 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 or to form an inside corner.

3.32 Cove Base Installation Adhesive: an adhesive intended by the manufacturer to be used for the installation of cove base or wall base on a wall or vertical surface at floor level.

3.33 Cured Adhesive, Cured Coating, or Cured Ink: an adhesive, coating, or ink that is dry to the touch.

3.34 Cyanoacrylate Adhesive: an adhesive with a cyanoacrylate content of at least 95 percent by weight.

3.35 Dry Wall Adhesive: an adhesive intended by the manufacturer to be used during the installation of gypsum dry wall to studs or solid surfaces.

3.36 Elastomeric Adhesive: a rubber or thermoplastic based adhesive intended by the manufacturer to be used in the manufacture of life preserving equipment including, but not limited to, aircraft float systems, life rafts, and life jackets; or other personal or equipment protection products.

3.37 Ethylene Propylene Diene Monomer (EPDM) Roof Membrane: a prefabricated sheet of elastomeric material composed of ethylene propylene diene monomer and that is field applied to a building roof using one layer or membrane material.

3.38 EPA: United States Environmental Protection Agency.

3.39 Exempt Compound: a compound identified as exempt under the definition of VOC, in Rule 1020 (Definitions).

3.40 Fiberglass: fine filaments of glass.

3.41 Flexible Vinyl: a nonrigid polyvinyl chloride plastic with at least five percent, by weight of plasticizer content.

3.42 Foam: a rigid or spongy cellular mass with gas bubbles dispersed throughout.

3.43 Floor Covering Installation: installation of wood flooring, carpet, floor tile, or artificial grass. Floor covering installation does not include ceramic tile installation or perimeter bonded sheet flooring installation.

3.44 Glue: a hard gelatin obtained from hides, tendons, cartilage, bones, or other parts of animals.

3.45 Grams of VOC per Liter of Adhesive Product, Excluding Water and Exempt Compounds: the weight of VOC per combined volume of VOC and coating solids, calculated using the following equation:

$$\text{Grams of VOC per Liter of Adhesive Product, Excluding Water and Exempt Compounds} = \frac{W_s - W_w - W_{ec}}{V_m - V_w - V_{ec}}$$

Where:

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

3.46 Grams of VOC per Liter of Material: the weight of VOC per volume of material, calculated using the following equation:

$$\text{Grams of VOC per Liter of Material} = (W_s - W_w - W_{ec}) / V_m$$

Where:

W_s = weight of all volatile compounds, in grams
W_w = weight of water, in grams
W_{ec} = weight of exempt compounds, in grams
V_m = volume of the material, in liters

3.47 High Precision Optics: optical elements used in electro-optical devices which are designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.

3.48 High-Volume, Low-Pressure (HVLP) Spray Equipment: equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure, measured dynamically at the center of the air cap and the air horns.

3.49 Indoor Carpet Adhesive: an adhesive intended by the manufacturer to be used during the installation of a carpet that is in an enclosure and is not exposed to ambient weather conditions during normal use.

3.50 Indoor Floor Covering Installation Adhesive: an adhesive intended by the manufacturer for use in the installation of wood flooring, carpet, resilient tile, vinyl tile, vinyl backed carpet, resilient sheet and roll or artificial grass. Adhesives used to install ceramic tile and perimeter bonded sheet flooring with vinyl backing onto a non-porous substrate, such as flexible vinyl, are excluded from this category.

3.51 Inkjet Printer Head Assembly Operation: an operation used to manufacture or assemble the printer head used on inkjet printers. Inkjet printing is a printing method where the liquid ink is transferred at high velocity through a small diameter opening(s) to a substrate.

3.52 Laminate: a product made by bonding together two or more layers of material.

3.53 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.54 Low-Solids Adhesive Product: an adhesive or adhesive primer that contains less than 120 grams of solids per liter of material.

3.55 Maintenance Cleaning: the cleaning of tools, forms, molds, jigs, machinery, and equipment (except coating application equipment, ink application equipment, or adhesive application equipment), and the cleaning of work areas where maintenance or manufacturing occurs.

3.56 Manufacturing Process: the process of making goods or articles by hand or by machine.

3.57 Marine Deck Sealant/Primer: a sealant or sealant primer intended by the manufacturer to be applied to wooden marine deck.

3.58 Medical Device: an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article including any component or accessory, that is intended for use in the diagnosis of disease or other conditions or in the cure, mitigation, treatment, or prevention of disease, or is intended to affect the structure or any function of the body.

3.59 Medical Equipment Manufacturing: the manufacture of medical devices, including, but not limited to, catheters, heart valves, blood cardioplegia machines, tracheostomy tubes, blood oxygenators, and cardiatory reservoirs.

3.60 Metal to Urethane/Rubber Molding or Casting Adhesive: an adhesive intended by the manufacturer to bond metal to high density or elastomeric urethane or molded rubber materials, in a heated molding or casting processes, to fabricate products such as rollers for computer printers or other paper handling equipment.

3.61 Modified Bituminous Sealant Primer: a primer that consists 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.

3.62 Modified Bituminous Material: materials obtained from natural deposit 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.

3.63 Motor Vehicle Adhesive: an adhesive, including glass bonding adhesive, used at a facility that is not an automobile or light-duty truck assembly coating facility pursuant to District Rule 4602, that is intended by the manufacturer to be applied for the purpose of bonding two vehicle surfaces together without regard to the substrates involved.

3.64 Motor Vehicle Glass Bonding Primer: a primer, used at a facility that is not an automobile or light-duty truck assembly coating facility pursuant to District Rule 4602, applied to windshield or other glass, or to body openings, to prepare the glass or body opening for the application of glass bonding adhesives or the installation of adhesive bonded glass. Motor vehicle glass bonding primer includes glass bonding/cleaning primers that perform both functions (cleaning and priming of the windshield or other glass, or body openings) prior to the application of adhesive or the installation of adhesive bonded glass.

3.65 Motor Vehicle Weatherstrip Adhesive: an adhesive, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to weatherstripping materials for the purpose of bonding the weatherstrip material to the surface of the vehicle.

3.66 Multipurpose Construction: the installation or repair of construction materials including, but not limited to, drywall, subfloor, paneling, baseboards, fiberglass, ceiling tiles, and ceiling panels.

3.67 Multipurpose Construction Adhesive: an adhesive intended by the manufacturer for use in 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. Effective on and after January 1, 2012, drywall, subfloor,

and panel adhesives are no longer considered Multipurpose Construction Adhesive, each would be considered its own adhesive category with VOC content limits pursuant to Section 5.1 of this rule.

3.68 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.69 Non-Atomized Solvent Flow: a solvent in the form of a liquid stream without the introduction of any propellant.

3.70 Non-Leaking Container: a container without a liquid leak.

3.71 Non-Membrane Roof Adhesive: an adhesive intended by the manufacturer to be used for the installation or repair of non-membrane roofs. This category includes plastic or asphalt roof cement, asphalt roof coatings and cold application cement.

3.72 Non-Membrane Roof Sealant: a sealant intended by the manufacturer to be used for installation or repair of non-membrane roofs. This category includes plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.

3.73 Organic Solvent: the same as "Solvent."

3.74 Organic Solvent Cleaning: an activity, or operation, or process, (including surface preparation, cleanup, or wipe cleaning), performed outside of a degreaser, that uses organic solvent to remove uncured adhesives, uncured coatings, uncured inks or other contaminants, including, but not limited to, dirt, soil, oil, lubricants, coolants, moisture, fingerprints, and grease, from parts, products, tools, machinery, application equipment and general work areas. Cleaning spray equipment used for the application of coatings, adhesives, or ink, is also considered to be organic solvent cleaning.

3.75 Outdoor Carpet Adhesive: an adhesive used during the installation of carpet that is not in an enclosure and is exposed to ambient weather conditions during normal use.

3.76 Outdoor Floor Covering Installation Adhesive: an adhesive intended by the manufacturer for use in the installation of floor covering that is not in an enclosure and that is exposed to ambient weather conditions during normal use.

3.77 Panel Installation: the installation of plywood, predecorated hardboard, tileboard, fiberglass, reinforced plastic, and similar predecorated or non-decorated panels to studs or solid surfaces.

3.78 Panel Installation Adhesive: an adhesive intended by the manufacturer to be used for the installation of plywood, pre-decorated hardboard (or tileboard), fiberglass reinforced plastic, and similar pre-decorated or non-decorated panels to studs or solid surfaces using an adhesive formulated for that purpose.

3.79 Paper-Based Gaskets: a gasket made of paper that forms a mechanical seal in the space between two mating surfaces.

3.80 Percent VOC by Weight: the ratio of the weight of the VOC to the weight of the material, expressed as a percentage. The percent VOC by weight can be calculated as follows:

$$\% \text{ VOC weight} = \frac{W_v \times 100}{W_m}$$

Where:

W_v = weight of VOCs, in grams

W_m = weight of material, in grams

3.81 Perimeter Bonded Sheet Flooring Installation: the installation of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive designed to be applied only to a strip of up to four inches wide around the perimeter of the sheet flooring.

3.82 Plastic Cement Welding Adhesive: an adhesive also called Plastic Solvent Welding Adhesive, intended by the manufacturer for use to dissolve plastic surfaces to form a bond between mating surfaces.

3.83 Plastic Cement Welding Adhesive Primer: an adhesive primer intended by the manufacturer to prepare plastic substrates prior to the application of an adhesive for bonding or welding.

3.84 Plastic Foam: a foam constructed of plastic material

3.85 Plasticizer: a material, such as a high boiling point organic solvent, that is incorporated into an adhesive to increase its flexibility, workability, or distensibility.

3.86 Plastic: a synthetic material chemically formed by the polymerization of organic (carbon-based) substances. Plastics are usually compounded with modifiers, extenders, and/or reinforcers and are capable of being molded, extruded, cast into various shapes and films, or drawn into filaments.

3.87 Polyvinyl Chloride Plastic (PVC plastic): a polymer of the chlorinated vinyl monomer that contains 57% chlorine.

3.88 Polyvinyl Chloride Welding Adhesive (PVC Welding Adhesive): an adhesive intended by the manufacturer for use in the welding of PVC plastic pipe.

3.89 Porous Material: a material with surfaces permeable to liquids. Examples of porous materials include, but are not limited to paper and cardboard. For purposes of this rule, porous material does not include wood.

3.90 Pre-formed Rubber Product: a rubber product which has undergone a vulcanization process and is in its final state for further use and is not intended to be vulcanized any further.

3.91 Propellant: a gas, including air, in a pressure container for expelling the contents when the pressure is released.

3.92 Reinforced Plastic Composite: a composite material consisting of plastic reinforced with fibers.

3.93 Repair Cleaning: a solvent cleaning operation or activity carried out during a repair process.

3.94 Repair Process: the process of returning a damaged object or an object not operating properly to good condition.

3.95 Research and Development: a facility or portion thereof used to further the development of useful materials, devices, systems, or methods, including, but not limited to, design, development, and improvement of prototypes and processes. Research and development does not include the manufacturing process itself.

3.96 Roadway Sealant: a sealant intended by the manufacturer to be applied to streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.

3.97 Rubber: a natural or manmade rubber substrate, including but not limited to styrene-butadiene rubber (SBR), polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene (CSM), and ethylene propylene diene terpolymer.

3.98 Rubber Flooring Adhesive: an adhesive that is intended by the manufacturer to be used for the installation of flooring material in which both the back and the top surface are made of synthetic rubber, and which may be in sheet or tile form.

3.99 Rubber Stock Sheet: a cured, uncured or partially cured rubber sheets which are not in their final state of intended use.

3.100 Rubber Vulcanization Adhesive/Primer: an adhesive product intended by the manufacturer to bond rubber to metal, rubber, or polyester or nylon fabrics during the following vulcanization processes:

3.100.1 Molded vulcanization: the application of heat and pressure to uncured rubber in a mold;

3.100.2 Sheet-applied Vulcanization: the application of heat after rubber stock sheets have been adhered to the walls of tanks, tankers, elbow joints, protective earthquake building pads, or rail cars; or the application of heat after one or more layers of rubber stock sheets have been built-up to form a rubber product;

3.100.3 Cold vulcanization: the chemical reaction of an adhesive with rubber stock sheets that are adhered to earthmoving equipment, other high impact/abrasion devices, or industrial belting devices, without the application of heat or pressure.

3.101 SCAQMD: South Coast Air Quality Management District.

3.102 Scientific Instrument: an instrument (including the components, assemblies, and subassemblies used in their manufacture) and associated accessories and reagents which are used for the detection, measurement, analysis, separation, synthesis, or sequencing of various compounds.

3.103 Sealant: a material with adhesive properties that is intended by the manufacturer primarily to fill, seal, or waterproof gaps or joints between two surfaces. Sealants include sealant primers and caulks.

3.104 Sealant Primer: a product intended by the manufacturer to be applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.

3.105 Sealant Product: sealant products include, but are not limited to, sealants and sealant primers.

3.106 Sheet Rubber Lining Installation: the process of applying sheet rubber liners by hand to metal or plastic substrates to protect the underlying substrate from corrosion or abrasion. These operations also include laminating sheet rubber to fabric by hand.

3.107 Single-ply Roof Membrane: a prefabricated sheet of rubber, normally ethylene-propylene diene terpolymer that is filed applied to a building roof using one layer of membrane material. For the purposes of this rule, single-ply roof membrane does not include membranes prefabricated from ethylene-propylene diene monomer (EPDM).

3.108 Single-ply Roof Membrane Installation: the use of adhesive products to apply one layer of roofing membrane.

3.109 Single-ply Roof Membrane Installation and Repair Adhesive: an adhesive intended by the manufacturer, and labeled, for use in the installation or repair of single-ply roof membrane. Installation includes, as a minimum, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes and ducts that protrude through the membrane. Repair includes gluing the edges of torn membrane together, attaching a patch over a hole and reapplying flashings to vents, pipes or ducts installed through the membrane.

3.110 Single-ply Roof Membrane Adhesive Primer: a primer intended by the manufacture for use to clean and promote adhesion of the single-ply roof membrane seams or splices prior to bonding, and labeled as such.

3.111 Single-ply Roof Membrane Sealant: a sealant intended by the manufacturer to be used for the installation or repair of single-ply roof membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.

3.112 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.113 Solvent Flushing: the use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of equipment by flushing solvent, by a non-atomized solvent flow, through the equipment.

3.114 Solvent Welding: the softening of the surfaces of two substrates by wetting them with solvents and/or adhesives, and joining them together with a chemical and/or physical reaction(s) to form a fused union.

3.115 Staple and Nail Manufacturing Adhesive: an adhesive that is intended by the manufacturer to bond industrial staples into a clip or to be applied to industrial nails to produce collated nails.

3.116 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.117 Stripping: the use of solvent to remove material such as cured adhesives, cured inks, cured or dried paint, cured or dried paint residue or temporary protective coating.

3.118 Structural Glazing: a process that includes the application of adhesives to bond glass, ceramic, metal, stone, or composite panels to the exterior of a building.

3.119 Structural Wood Member Adhesive: an adhesive intended by the manufacturer to be used for the construction of a load – bearing joint in wooden joists, trusses, or beams.

3.120 Styrene-Acrylonitrile Welding Adhesive: an adhesive intended by the manufacturer to weld styrene-acrylonitrile co-polymer plastics. Bonding of styrene-acrylonitrile to any other substrate (such as metal) is not included under this plastic welding adhesive subcategory.

3.121 Subfloor Installation: the installation of subflooring material over floor joists, including the construction of any load bearing joists. Subflooring is covered by a finish surface material.

3.122 Surface Preparation: the removal of contaminants from a surface prior to the application of coatings, inks, or adhesives or before proceeding to the next step of a manufacturing process.

3.123 Surface Preparation Solvent: a VOC containing material used to remove dirt, oil, and other contaminants. This surface cleaning is typically done prior to the application of an adhesive product.

3.124 Thin Metal Laminating Adhesive: an adhesive intended by the manufacturer for use in bonding multiple layers of metal to metal or metal to plastic on the production of electronic or magnetic components in which the thickness of the bond line(s) is less than 0.25 millimeters.

3.125 Thinner: a solvent that is used to dilute coatings to reduce viscosity, color strength, and solids, or to modify drying conditions.

3.126 Tire Repair: a process that includes expanding a hole, tear, fissure, or blemish in a tire casing by grinding or gouging, applying adhesive and filling the hole or crevice with rubber.

3.127 Tire Retread: the process of tire retreading is where adhesives are applied to the back of precured tread rubber and to the casing and cushion rubber. It may also be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.

3.128 Top and Trim Adhesive: an adhesive intended by the manufacturer to be used for installing automotive or marine trim, including, but not limited to headliners, vinyl tips, vinyl trims, sunroofs, dash covering, door covering, floor covering, panel covering and upholstery.

3.129 Traffic Marking Tape: a pre-formed reflective tape intended by the manufacturer to be applied to public streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.

3.130 Traffic Marking Tape Adhesive Primer: an adhesive primer intended by the manufacturer to be applied to surfaces prior to installation of traffic marking tape.

3.131 Transfer Efficiency: 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.

3.132 Vinyl Composition Tile (VCT): a material made from thermoplastic resins, fillers, and pigments.

3.133 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.134 VCT and Asphalt Tile Adhesive: an adhesive intended by the manufacturer for the installation of vinyl composite tile or asphalt tile flooring.

3.135 Waste Solvent Material: a solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

3.136 Waterproof Resorcinol Glue: a two-part, resorcinol-resin-based adhesive intended by the manufacturer for applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

3.137 Wipe Cleaning: a solvent cleaning activity performed by hand rubbing an absorbent material such as a rag, paper, sponge, brush, or cotton swab containing solvent.

3.138 Wood Flooring Adhesive: an adhesive intended by the manufacturer to be used to install a wood floor surface, including but not limited to, parquet tiles and wood planks.

3.139 Wood Parquet Flooring: a wood flooring in tile form constructed of smaller pieces of wood which are joined together in a pattern by the manufacturer to form the tile.

3.140 Wood Plank Flooring: a wood flooring in plank form constructed of solid or laminated wood.

4.0 Exemptions

4.1 The provisions of this rule shall not apply to:

4.1.1 A stationary source that uses 20 gallons or less of adhesives products in a calendar year shall not be subject to Sections 5.1.1, 5.1.2, 5.1.3, and to the adhesives portion of Sections 5.1.5 and 5.2 through 5.6. Commercial and industrial operations exempted by this section shall maintain monthly records documenting the type and quantity of adhesive products and solvents used and provide the records to the District upon request.

4.1.2 The use of adhesive products or sealant products containing less than 20 grams VOC per liter.

4.1.3 Effective through December 31, 2010, the testing and evaluation of adhesives in research laboratories, analytical laboratories, or quality assurance laboratories. Laboratory operators shall maintain monthly records documenting the type and quantity of adhesive products used and provide the records to the District upon request. Effective on and after January 1, 2011, laboratory operators shall comply with the requirements of Section 4.2.

4.1.4 The use of adhesives in tire repair provided the label states "for tire repair use only."

4.1.5 Effective through December 31, 2010, the use of adhesives that are sold or supplied with 8 fluid oz. or less of adhesive in non-reusable containers. Effective on and after January 1, 2011, operators shall comply with the applicable requirements of Section 4.2.

4.1.6 The use of aerosol spray adhesive products.

4.1.7 Household adhesive products subject to Article 2, Consumer Products, Sections 94507 - 94517, Title 17, California Code of Regulations.

4.1.8 Adhesive products subject to the VOC limit requirements of Rule 4605 (Aerospace Assembly and Component Coating Operations), Rule 4607 (Graphic Arts), and Rule 4681 (Rubber Tire Manufacturing). Effective on and after January 1, 2011, adhesive products subject to the VOC limit requirements of Rule 4605 (Aerospace Assembly and Component Coating

Operations) will be subject to work practices required pursuant to Section 5.3.

4.1.9 Contact adhesives that are subject to the Consumer Product Safety Commission regulations in 16 CFR, Part 1302, that have a flash point greater than 20°F as determined pursuant to those regulations, and that are sold in packages that contain 128 fluid ounces or less.

4.1.10 Stripping of cured adhesives, except the stripping of such materials from spray application equipment.

4.1.11 A stationary source that uses 20 gallons or less of sealant products in a calendar year shall not be subject to Section 5.1.4, and to the sealant portion of Sections 5.1.5 and 5.2 through 5.6. Commercial and industrial operations exempted by this section shall maintain monthly records documenting the type and quantity of sealant products and solvents used and provide the records to the District upon request.

4.1.12 Except for the work practices required pursuant to Section 5.3, and 5.6, the provisions of this rule shall not apply to the testing and evaluation of sealant products in research laboratories, analytical laboratories, or quality assurance laboratories. Laboratory operators claiming exemption under this section shall maintain monthly records documenting the type, quantity, and VOC content of sealant products used, the amount and VOC content of solvents. Records shall be retained in accordance with provisions of Section 6.1.5.

4.2 Effective on and after January 1, 2011, the provisions of this rule, except for the work practices required pursuant to Sections 5.3 and 5.6 shall not apply to:

4.2.1 The testing and evaluation of adhesives in research laboratories, analytical laboratories, or quality assurance laboratories. Laboratory operators shall maintain monthly records documenting the type and quantity of adhesive products used and provide the records to the District upon request.

4.2.2 The use of adhesives that are sold or supplied with 8 fluid oz. or less of adhesive in non-reusable containers.

4.2.3 The use of aerosol adhesive or aerosol adhesive primer products.

4.2.4 Adhesive products used in assembly, repair, or manufacture of undersea-based weapon systems.

4.2.5 Adhesive products used in medical equipment manufacturing operations.

4.2.6 Cyanoacrylate adhesive application processes.

4.2.7 Processes using polyester bonding putties to assemble fiberglass parts at fiberglass boat manufacturing facilities and at other reinforced plastic composite manufacturing facilities.

4.3 Except for the records required in Section 6.1.3, the prohibition of sale in Section 5.7 shall not apply to the following:

4.3.1 Adhesive products and sealant products shipped, supplied, or sold exclusively to persons outside the District for use outside the District.

4.3.2 Adhesive products and sealant products sold to any person who complies with the requirements of Section 5.4.

4.4 The VOC content limits of Table 6 shall not apply to the following applications:

4.4.1 Cleaning of solar cells, laser hardware, scientific instruments, or high precision optics.

4.4.2 Cleaning in laboratory tests and analyses, or bench scale or research and development projects.

4.4.3 Cleaning of clutch assemblies where rubber is bonded to metal by means of an adhesive.

4.4.4 Cleaning of paper-based gaskets.

5.0 Requirements

5.1 Adhesive and Sealant VOC Content Limits

5.1.1 The VOC content of adhesive products used for specific applications shall not exceed the following limits, expressed as grams of VOC per liter of adhesive product, excluding water and exempt compounds, or grams of VOC per liter of material for low-solids adhesive products, as applied:

Table 1 - VOC Content Limits for Adhesive Products
(Effective through December 31, 2011)

Applications	VOC Limit Effective through December 31, 2010. (Grams Per Liter)	VOC Limit Effective on and after January 1, 2011. (Grams Per Liter)
Multipurpose Construction	200	200
Floor Covering Installation	150	150
Ceramic Tile Installation	130	130
Perimeter Bonded Sheet Flooring Installation	660	660
Single-Ply Roof Material Installation	250	250
Structural Glazing	100	100
ABS Welding Adhesive	400	400
CPVC Welding Adhesive	490	490
PVC Welding Adhesive	510	510
Other Plastic Cement Welding Adhesive	450	450
Plastic Cement Welding Adhesive Primer	650	650
Adhesive Primers	250	250
Staple and Nail Manufacturing	640	640
Contact Adhesive	250	250
Contact Adhesive – Specialty	250	250
Rubber Vulcanization Adhesive/Primer	850	850
Waterproof Resorcinol Glue	170	170
Tire Retread	N/A	100
Cove Base Installation	250	150

Table 2 - VOC Content Limits for Adhesive Products (Effective on and after January 1, 2012)	
Applications	VOC limit (Grams Per Liter)
Architectural Adhesive Products:	
Multipurpose Construction	70
Ceramic Tile Adhesive	65
Cove Base Installation	50
Dry Wall and/or Panel Adhesive	50
Flooring Adhesives:	
Floor Covering Installation	150
Ceramic Floor Tile Installation	65
Indoor Carpet Adhesive	50
Carpet Pad Adhesive	50
Outdoor Carpet Adhesive	150
Rubber Flooring Adhesive	60
Perimeter Bonded Sheet Flooring Installation	660
Subfloor Adhesive	50
VCT and Asphalt Tile Adhesive	50
Wood Flooring Adhesive	100
Roofing Adhesives:	
Single-Ply Roof Material Installation	250
Non-Membrane Roof Adhesive	300
Structural Glazing	100
Structural Wood Member Adhesive	140
Miscellaneous Adhesives:	
Contact Adhesive	80
Contact Adhesive – Specialty	250
Rubber Vulcanization Adhesive/Primer	850
Tire Retread	100
Motor Vehicle Adhesive	250
Motor Vehicle Weatherstrip Adhesive	750
Traffic Marking Tape Adhesive/ Primer	150
Top and Trim Adhesive	540
Waterproof Resorcinol Glue	170
Staple and Nail Manufacturing	640
Thin Metal Laminating Adhesive	780
Elastomeric Adhesive	750
Flexible Vinyl Adhesive	250

Table 2 - VOC Content Limits for Adhesive Products continued (Effective on and after January 1, 2012)	
Applications	VOC Limit (Grams per Liter)
Plastic Welding Products	
ABS Welding Adhesive	325
Cellulosic Plastic Welding Adhesive	100
CPVC Welding Adhesive	490
PVC Welding Adhesive	510
Styrene-Acrylonitrile Welding Adhesive	100
Plastic Cement Welding Adhesive Primer	400
Other Plastic Cement Welding Adhesive	250
Adhesive Primers:	
Automotive Glass Primer	700
Adhesive Primer	250

5.1.2 The VOC content of adhesive products, except as provided in Section 5.1.1, shall not exceed the following limits, expressed as grams of VOC per liter of adhesive product, excluding water and exempt compounds, or grams of VOC per liter of material for low-solids adhesive products, as applied:

Table 3 - VOC Content Limits for Adhesive Products			
Material Bonded	VOC Limit Effective through December 31, 2010. (Grams Per Liter)	VOC Limit Effective on and after January 1, 2011. (Grams Per Liter)	VOC Limit Effective on and after January 1, 2012. (Grams Per Liter)
Metal to Metal	30	30	30
Porous Materials	120	120	50
Plastic Foam	120	120	50
Wood	30	30	30
Pre-formed Rubber Products	250	250	250
Reinforced Plastic Composite	250	200	200
Fiberglass	-	-	80
All other Substrates	250	250	250

5.1.3 The higher of the two limits from Table 3 applies to the bonding of two dissimilar substrates.

5.1.4 The VOC content of sealant products used for specific applications shall not exceed the following limits, expressed as grams of VOC per liter of sealant product, excluding water and exempt compounds, or grams of VOC per liter of material for low-solids sealant products, as applied:

Table 4 - VOC Content Limits for Sealants	
Sealant	VOC Limit Effective on and after January 1, 2012. (Grams Per Liter)
Architectural	250
Marine Deck	760
Non-membrane Roof	300
Roadway	250
Single-Ply Roof Membrane	450
Other Sealants	420

Table 5 - VOC Content Limits for Sealant Primers	
Sealant Primer	VOC Limit Effective on and after January 1, 2012. (Grams Per Liter)
Architectural Non Porous	250
Architectural Porous	775
Modified Bituminous	500
Marine Deck	760
Other Sealant Primers	750

5.1.5 In lieu of complying with the applicable requirements of Sections 5.1.1 through 5.1.4, an operator may control VOC emissions from adhesive product or sealant product application operations with a VOC emission control device that meets the requirements of Section 5.4.

5.2 Adhesive and Sealant Application Equipment

An operator shall use only the following equipment to apply adhesives and sealants:

5.2.1 Electrostatic Application

5.2.2 Flow Coater

5.2.3 Roll Coater

5.2.4 Dip Coater

5.2.5 Hand Application Methods

5.2.6 Airless Spray

5.2.7 HVLP Spray

5.2.7.1 HVLP spray equipment shall be operated in accordance with the manufacturer's recommendations.

5.2.7.2 For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.2.7.3 A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Section 3.0.

5.2.8 Any other application method that demonstrates, to the satisfaction of the APCO and EPA, a coating transfer efficiency equivalent to or greater than the efficiency achieved by an HVLP spray gun as measured using a test method in Section 6.3.6.

5.2.9 Air-atomized spray may only be used for the application of contact adhesives or specialty contact adhesives.

5.2.10 In lieu of complying with the applicable requirements in Sections 5.2.1 through 5.2.9, an operator may control emissions from coating application equipment with an APCO-approved VOC emission control system that controls the emissions from the source operation and that meets the requirements of Section 5.4.

5.3 Work Practices for Adhesive Products and Sealant Products

The operator shall implement the following work practices when participating in adhesive-related activities. Effective on and after January 1, 2012, the operator shall implement the work practices pursuant to Section 5.3.1 through 5.3.4 when participating in sealant-related activities.

5.3.1 An operator shall store or dispose of adhesive products, sealant products, catalysts, thinners, fresh or spent solvents, and waste solvent materials such as cloth, paper, etc., in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty. The containers used for disposal of adhesive materials, solvents, or any unused VOC containing materials shall be self-closing.

5.3.2 Ensure that mixing containers for used VOC-containing adhesive products and sealant products and process-related waste materials are kept closed at all times except when depositing or removing these materials.

5.3.3 Minimize spills of VOC-containing adhesive products, and sealant products, and process-related waste materials.

5.3.4 Convey VOC-containing adhesive products, sealant products, and process-related waste materials from one location to another in closed containers or pipes.

5.4 VOC Emission Control System Requirements

5.4.1 In lieu of the applicable requirements of Section 5.1, 5.2, or 5.5, an operator may install and maintain a VOC emission control system that meets all of the requirements of Sections 5.4.2 through 5.4.4.

5.4.2 The VOC emission control system shall be approved by the APCO.

5.4.3 The VOC emission control system shall be operated with an overall capture and control efficiency of at least 85 percent by weight, as determined in accordance with Section 6.3.

5.4.4 In no case shall compliance through the use of a VOC emission control system result in VOC emissions in excess of the VOC emissions which would result from compliance with the applicable requirements of Sections 5.1, 5.2, or 5.5.

5.4.5 The minimum required overall capture and control efficiency of a VOC emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by using the following equation:

$$CE = \left[1 - \left(\frac{VOC_{LWc}}{VOC_{LWn,\mathrm{Max}}} \, x \, \frac{1 - \left(VOC_{LWn,\mathrm{Max}} / D_{n,\mathrm{Max}} \right)}{1 - \left(VOC_{LWc} / D_c \right)} \right) \right] x \, 100$$

Where:

CE	=	Minimum Required Overall Capture and Control Efficiency, in percent
VOC_{LWc}	=	VOC Limit, less water and less exempt compounds
$VOC_{LWn,Max}$	=	Maximum VOC content of noncompliant adhesive product 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 noncompliant adhesive product, containing the maximum VOC content
D_c	=	Density of corresponding solvent, reducer, or thinner used in the compliant adhesive products

5.5 Organic Solvent Cleaning Requirements

5.5.1 An operator shall not use organic solvents for cleaning operations associated with adhesive products that exceed the VOC content limits specified in Table 6. Effective on and after January 1, 2012 an operator shall not use organic solvents for cleaning operations associated with sealant products that exceed the VOC content limits specified in Table 6.

Table 6 – VOC Limits for Organic Solvents Used in Cleaning Operations

Type of Solvent Cleaning Operation	VOC Content Limit Grams of VOC/liter of material (lb/gal)
A. Product Cleaning During Manufacturing Process or Surface Preparation for Adhesive Application	
1. General	25 (0.21)
2. Surface Preparation Prior to Rubber Vulcanization Process	850 (7.1)
B. Repair and Maintenance Cleaning	25 (0.21)
C. Cleaning of Adhesive Application Equipment	25 (0.21)

5.5.2 In lieu of complying with the requirements in Table 6, an operator may control VOC emissions from cleaning operations with an APCO-approved VOC emission control system that meets the requirements of Section 5.4.

5.5.3 An operator performing Table 6 Category A.2 cleaning using solvent with VOC content greater than 25 grams per liter and the cleaning takes place outside the control of an APCO-approved VOC emission control system shall meet the requirements of Sections 5.5.4 through 5.5.6 in addition to the meeting the applicable VOC content limit of Table 6.

5.5.4 Cleaning activities that use solvents shall be performed by one or more of the following methods:

5.5.4.1 Wipe cleaning; or

5.5.4.2 Application of solvent from hand-held spray containers from which solvents are dispensed without a propellant-induced force; or

5.5.4.3 Non-atomized solvent flow method in which 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

5.5.4.4 Solvent flushing method in which the cleaning solvent is discharged into a container that 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.

5.5.5 Solvent shall not be atomized into the open air unless it is vented to a VOC emission control system that complies with Section 5.4. This provision shall not apply to the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with spray bottles or containers described in Section 5.5.4.2.

5.5.6 An operator shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used,

it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use.

5.5.7 In lieu of complying with the applicable requirements of Sections 5.5.4 through 5.5.6, an operator shall install and maintain a VOC emission control system that meets the requirements of Section 5.4 to control emissions from the solvent cleaning operation.

5.6 Work Practices for Solvent Cleaning

The operator shall implement the following work practices when participating in organic solvent cleaning activities:

5.6.1 Minimize spills of VOC-containing cleaning materials.

5.6.2 Convey VOC-containing cleaning materials from one location to another in closed containers or pipes.

5.6.3 Minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

5.6.4 An operator shall store or dispose of cleaning materials, fresh or spent solvents, and waste solvent materials such as cloth, paper, etc., in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty. The containers used for disposal of adhesive materials, solvents, or any unused VOC containing materials shall be self-closing.

5.7 Prohibition of Sale

Except as provided in Section 4.3, no person shall supply, sell, or offer for sale any adhesive product or sealant product that does not meet the limits as specified in Section 5.1 or 5.4.

5.8 Sell-Through of Adhesives and Sealants

5.8.1 An adhesive product or sealant product manufactured prior to the effective date specified for that product in Section 5.1, may be sold, supplied, or offered for sale for up to 12 months after the specified effective date.

5.8.2 An adhesive product or sealant product manufactured prior to the effective date specified for that product in Section 5.1 may be applied up to 24 months after the specified effective date.

5.8.3 Sections 5.8.1 and 5.8.2 only apply to those adhesive products or sealant products which are labeled to display the date or date code indicating when the product was manufactured and that complied with the standards in effect at the time the product was manufactured.

5.9 Prohibition of Specification

No person shall solicit, require for use, or specify the application of any adhesive products or sealant products, if such use or application results in a violation of the provisions of this Rule. This prohibition shall apply to all written or oral contracts.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 An operator subject to Section 5.1 or 5.5 shall maintain the following records:

6.1.1.1 Records of the VOC content, in grams VOC per liter, of all adhesive materials used and stored at the stationary source.

6.1.1.2 Records of the VOC content of all solvents used and stored at the stationary source.

6.1.1.3 Effective on and after January 1, 2012, records of the VOC content, in grams VOC per liter, of all sealant materials used and stored at a stationary source.

6.1.2 VOC Emission Control System Records

An operator using a VOC emission control device as a means of complying with this rule shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. Key system operating parameters are those necessary to ensure compliance with VOC limits. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

6.1.3 Prohibition of Sale Exemption Records

An operator who claims exemption under Section 4.3 shall maintain records for all adhesive products and sealant products sold that do not meet the limits as specified in Section 5.1. The records shall include the following information:

6.1.3.1 Type, quantity, and VOC content, in grams per liter, of the adhesive products or sealant products sold.

6.1.3.2 Name, address, and telephone number of the persons to whom the adhesive products or sealant products are sold.

6.1.4 Solvent Cleaning Records

An operator subject to Section 5.5 shall also comply with the following recordkeeping requirements:

6.1.4.1 Keep a copy of the manufacturer's product data sheet or material safety data sheet of the solvents used for organic solvent cleaning activities.

6.1.4.2 Maintain a current list of solvents that are being used for organic solvent cleaning activities. The list shall include the following information:

6.1.4.2.1 The name of the solvent and its manufacturer's name.

6.1.4.2.2 The VOC content of the solvent expressed in grams per liter or lb/gallon.

6.1.4.2.3 When the solvent is a mixture of different materials that are blended by the operator, the mix ratio of the batch shall be recorded and the VOC content of the batch shall be calculated and recorded in order to determine compliance with the specified limits of VOC content, as applied.

6.1.4.2.4 The type of cleaning activity for each solvent that is being used in accordance with the applicable cleaning category specified in Table 6 of this rule.

6.1.4.2.5 The quantity of solvents used for cleaning operations shall be kept on a daily basis.

6.1.5 Records Retention: The operator shall retain the records specified in Sections 6.1.1 through 6.1.4, as applicable, on site for a period of five years, make the records available to the APCO, ARB, or EPA, and submit the records to the APCO, ARB, or EPA upon request.

6.2 Labeling Requirements

Adhesive products and solvents subject to this rule shall be labeled pursuant to Sections 6.2.1 through 6.2.3 as appropriate. Effective on and after January 1, 2012, sealant products subject to this rule shall be labeled pursuant to Sections 6.2.1 through 6.2.3 as appropriate.

6.2.1 VOC Content: Each container of adhesive product and sealant product subject to this rule shall display the maximum VOC content of the adhesive product or sealant product as applied. VOC content shall be displayed as grams of VOC per liter of adhesive product or sealant product, excluding water and exempt compounds, or grams of VOC per liter of material for low-solids adhesive products. Each container of solvent subject to this rule shall display the maximum VOC content (in grams of VOC per liter of material) as supplied.

6.2.2 Thinning Recommendations: Each container of adhesive product or sealant product subject to this rule shall display a statement of the manufacturer's recommendations regarding thinning, reducing, or mixing of the adhesive product with any other VOC containing material. Mixing recommendations shall specify a ratio which results in a compliant, as applied, adhesive product, or sealant product.

6.2.3 Manufacturers of any solvents subject to this rule shall indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, the VOC content, and density of the solvent, as supplied. The VOC content shall be expressed in units of grams per liter or lb/gallon.

6.3 Test Methods

The analysis of solvents, adhesive products, sealant products, and control efficiency shall be determined by the following methods:

6.3.1 The VOC and solids content of adhesive products, sealant products, and solvents shall be determined using EPA Method 24 or other test method approved by ARB, EPA, and the APCO.

6.3.2 The capture efficiency for a VOC emission control system's collection device(s) shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable, or any other method approved by EPA, ARB, and the APCO.

6.3.3 The control efficiency of a VOC emission control system's control device(s) shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Test Method 18 or ARB Method 422 (Determination of Volatile Organic Compounds in Emissions from Stationary Sources) shall be used to determine the emissions of exempt compounds.

6.3.4 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{CAPTURE\ AND\ CONTROL} = [\ CE_{CAPTURE} \times CE_{CONTROL}\ ] / 100\ \%$$

Where:

$CE_{CAPTURE\ AND\ CONTROL}$ = Overall Capture and Control Efficiency, in percent

$CE_{CAPTURE}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.3.2

$CE_{CONTROL}$ = Control Efficiency of the control device, in percent, as determined in Section 6.3.3

6.3.5 Determination of Solvent Losses from Spray Gun Cleaning Systems

The passive and active solvent losses from spray gun cleaning systems shall be determined by using SCAQMD "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems" dated October 3, 1989. The test solvent for this determination shall be lacquer thinner with a minimum vapor pressure of 105 mm Hg at 20°C. The minimum temperature shall be 15°C.

6.3.6 Transfer Efficiency

Transfer efficiency shall be determined by one of the following:

6.3.6.1 SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989, or

6.3.6.2 Any other test method for transfer efficiency for which written approval of the EPA and the APCO has been obtained.

6.4 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.

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RULE 4661 - ORGANIC SOLVENTS

(Adopted May 21, 1992)(Amended December 17, 1992; December 9, 1999; December 20, 2001; May 16, 2002; September 20, 2007).

1.0 Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from the use of organic solvents. This rule also specifies the reduction, monitoring, reporting, and disposal requirements.

2.0 Applicability

The provisions of this rule shall apply to any source operation that uses organic solvents unless the source operation is exempted under Section 4.0.

3.0 Definitions

3.1 APCO: as defined in Rule 1020 (Definitions).

3.2 ARB: California Air Resources Board.

3.3 Baked: a process whereby the coated object is heated above ambient temperature to a temperature at or above 194°F for the purpose of curing or drying.

3.4 Dissolver: an organic solvent that is added to an adhesive, coating, or ink in order to melt or to liquefy solid particles.

3.5 EPA: United States Environmental Protection Agency.

3.6 Exempt Compounds: all organic compounds not classified as VOC, as listed in the definition of VOC in Rule 1020 (Definitions).

3.7 Grams of VOC per liter of Material: the weight of VOC per volume of material and is calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{Ws - Ww - Wec}{Vm}$$

Where:

Ws = Weight of volatile compounds, in grams
Ww = Weight of water, in grams
Wec = Weight of exempt compounds, in grams
Vm = Volume of material, in liters.

3.8 Heat-Cured or Heat-Polymerized: heated to a temperature less than or equal to 194°F for the purpose of curing a coating, ink or adhesive.

3.9 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.10 Organic Solvent: the same as "Solvent."

3.11 Organic Solvent Cleaning: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.12 Photochemically Reactive Solvent: any organic solvent with an aggregate of more than 20% of its total volume composed of chemical compounds classified below or which exceeds any of the following individual percentage composition limitations referring to the total volume of solvent:

3.12.1 A combination of hydrocarbons, alcohols, aldehydes, esters, ethers or ketones having an olefinic or cycloolefinic type of unsaturation: five (5) percent; or

3.12.2 A combination of aromatic compounds with eight (8) or more carbon atoms to the molecule except ethylbenzene: eight (8) percent; or

3.12.3 A combination of ethylbenzene, ketones having branched hydrocarbon structures, or toluene: 20%.

Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one (1) of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical group, that is, that group having the least allowable percentage of the total volume of solvents.

3.13 SCAQMD: South Coast Air Quality Management District.

3.14 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.15 Standard Conditions: as defined in Rule 1020 (Definitions).

3.16 Thinner or Viscosity Reducer: an organic solvent which is used to dilute coatings to reduce viscosity, color strength, and solids, or to modify drying conditions.

3.17 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

4.0 Exemptions

The provisions of this rule shall not apply to:

4.1 The manufacture of organic solvents, or the transport of organic solvents or materials containing organic solvents.

4.2 Any source operation that is subject to or specifically exempted by any of the following rules:

4.2.1 Rule 4601 (Architectural Coatings),

4.2.2 Until December 31, 2008, Rule 4602 (Motor Vehicle and Mobile Equipment Coating Operations),

4.2.3 Rule 4603 (Surface Coating of Metal Parts and Products),

4.2.4 Rule 4604 (Can and Coil Coating Operations),

4.2.5 Rule 4605 (Aerospace Assembly and Component Coating Operations),

4.2.6 Rule 4606 (Wood Products Coating Operations),

4.2.7 Rule 4607 (Graphic Arts),

4.2.8 Rule 4610 (Glass Coating Operations),

4.2.9 On and after January 1, 2009, Rule 4612 (Motor Vehicle and Mobile Equipment Coating Operations – Phase II),

4.2.10 Rule 4653 (Adhesives),

4.2.11 Rule 4662 (Organic Solvent Degreasing Operations),

4.2.12 Rule 4684 (Polyester Resin Operations), or

4.2.13 Rule 4691 (Vegetable Oil Processing Operations).

4.3 The spraying or other employment of insecticides, pesticides or herbicides.

4.4 The employment, application, evaporation, or drying of saturated halogenated hydrocarbons or perchloroethylene.

4.5 The use of any material, in any source operation described in Sections 5.1, 5.2, 5.3, or 5.4 if all of the following conditions are met:

4.5.1 The volatile content of material consists only of water and organic solvents, and

4.5.2 The organic solvents content comprises not more than 20 percent by volume of the total volatile content, and

4.5.3 The volatile content is not photochemically reactive, and

4.5.4 The organic solvent does not come into contact with flame.

5.0 Requirements

5.1 Sections 5.2 through 5.7 shall remain in effect until March 20, 2008.

5.2 Solvents Subjected to Heat: An operator shall not discharge into the atmosphere more than 15 pounds of VOC emissions in any one (1) day from any source operation in which any organic solvent or any material containing organic solvents comes into contact with a flame or is baked, heat-cured, or heat-polymerized in the presence of oxygen, unless the VOC emissions have been reduced through the operation of an APCO-approved VOC emissions control system with an overall capture and control efficiency of at least 85 percent by weight. Those portions of any series of source operation designed for processing continuous web, strip, or wire that emit VOCs in the course of using operations described in this section shall be collectively subject to compliance with this section.

5.3 Photochemically Reactive Solvents: An operator shall not discharge into the atmosphere more than 40 pounds of VOC emissions in any one (1) day from any source operation resulting from conditions other than those described in Section 5.1 for employing or applying any photochemically reactive solvent, or any material containing such photochemically reactive solvent, unless the VOC emissions have been reduced through the operation of an APCO-approved VOC emissions control system with an overall capture and control efficiency of at least 85 percent by weight. Emissions resulting from baking, heat-curing, or heat-polymerizing, as described in Section 5.2 of this rule, shall be excluded from determination of compliance with this section. Those portions of any series of source operation designed for processing a continuous web, strip, or wire that emit VOCs in the course of using operations described in this section shall be collectively subject to compliance with this section.

5.4 Non-photochemically Reactive Solvents: An operator shall not discharge into the atmosphere more than 3,000 pounds of VOC emissions in any one (1) day from any source operation in which any non-photochemically reactive organic solvent or any material containing such a solvent, is employed or applied, unless VOC emissions have been reduced through the operation of an APCO-approved VOC emissions control system with an overall capture and control efficiency of at least 85 percent by weight. Emissions resulting from baking, heat-curing, or heat-polymerizing, as described in Section 5.2 of this rule, shall be excluded from determination of compliance with this section. Those portions of any series of source operation designed for processing a continuous web, strip, or wire that emit VOCs in the course of using operations described in this section shall be collectively subject to compliance with this section.

5.5 Cleanup: Emissions of VOCs into the atmosphere resulting from cleanup operations utilizing photochemically reactive organic solvents, from any source

operation described in Sections 5.2, 5.3, or 5.4 shall be included with other emissions of VOCs from that source operation for determining compliance with this rule.

5.6 Post Removal Drying: Emissions of VOCs into the atmosphere as a result of spontaneously continuing drying of products for the first 12 hours after their removal from any source operation described in Sections 5.2, 5.3, or 5.4 shall be included with other emissions of VOCs from that source operation for determining compliance with this rule.

5.7 Monitoring: An operator incinerating, adsorbing, or otherwise processing organic solvents pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices as specified in the Authority to Construct or the Permit to Operate, or as specified by the APCO, for indicating temperatures, pressures, rates of flow or other operating conditions necessary to determine the degree and effectiveness of the VOC emission control system.

5.8 On and after March 21, 2008, from all VOC-containing materials, equipment, and processes subject to this rule, an operator shall not emit to the atmosphere VOCs in excess of 833 pounds VOC per calendar month per facility.

5.9 In lieu of meeting the VOC emission limit in Section 5.8, an operator may install and operate a VOC emission control system that meets the following requirements.

5.9.1 The VOC emission control system shall be approved by the APCO.

5.9.2 The VOC emission control system shall have a capture efficiency of at least 90 percent by weight (90 wt%) and a control efficiency of at least 95 wt%.

5.10 Organic Solvent Cleaning, Storage, and Disposal Requirements

Operators shall comply with the requirements of Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal) when performing organic solvent cleaning, storage and disposal of organic solvents and waste solvent materials, coatings, adhesives, catalysts, and thinners. See Sections 5.0 and 6.0 of Rule 4663 for solvent VOC content limits, work practices, recordkeeping, and testing requirements.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 Until March 20, 2008, the records shall identify the organic solvents used in all source operations and shall include the name of each organic solvent,

solvent manufacturer's name, chemical composition, VOC content, vapor pressure, amount used.

6.1.1.1 An operator of a coating operation subject to this rule shall maintain daily records.

6.1.1.2 For other operations subject to this rule, records may be kept on an extended basis, but not to exceed monthly, and shall not exceed a period during which the amount of VOC emissions exceeds the applicable daily VOC emission limits in the rule.

6.1.1.3 Solvent purchase records and other such records needed to verify compliance of emissions limits of the rule shall also be kept.

6.1.1.4 Other such records, including the amount of VOC emissions resulting from organic solvent cleaning operations subject to Rule 4663 utilizing photochemically reactive organic solvents, needed to verify compliance of emissions limits of the rule shall also be kept.

6.1.2 On and after March 21, 2008, operators shall

6.1.2.1 Materials List: An operator shall maintain and have available on site, a current list of materials in use which provides all of the data necessary to evaluate compliance including the following information as applicable:

6.1.2.1.1 Specific manufacturer's name of solvent-containing material, including solvents, catalysts, and thinners.

6.1.2.1.2 VOC content of each solvent-containing material, as used, in g/l or lb/gal.

6.1.2.2 Material Usage Records – An operator shall maintain usage records on a daily basis that include the following information:

6.1.2.2.1 Specific material.

6.1.2.2.2 Volume of material used (gallons).

6.1.2.2.3 Specific solvents, catalysts and thinners added to material.

6.1.2.2.4 Volume of each solvent, catalyst and thinner (gallons) added.

6.1.2.2.5 When the material is a mixture of different materials that are blended by the operator, the mix ratio of the

batch shall be recorded and the VOC content of the batch shall be calculated and recorded in order to determine compliance with the VOC emission limits.

6.1.3 VOC Emission Control System Records

An operator using a VOC emission control system as a means of complying with this rule shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the VOC emission control system during periods of emission-producing activities.

6.1.4 Records Retention

An operator shall retain records required in Sections 6.1.1 through 6.1.3, as applicable, on site for a minimum of five (5) years, make the records available on site during normal business hours to the APCO, ARB, or EPA and submit the records to the APCO, ARB, or EPA upon request.

6.2 Test Methods

6.2.1 Determination of VOC Content

6.2.1.1 The VOC content of organic solvents shall be determined by using EPA Test Method 24 or 24A or by using the manufacturer's product formulation data and the formula in Section 3.7.

6.2.1.2 Exempt halogenated VOCs shall be determined by using the ARB Test Method 432 or SCAQMD Test Method 303.

6.2.2 Determination of Overall Capture and Control Efficiency of VOC Emission Control Devices

6.2.2.1 The capture efficiency of a VOC emission control system's collection device(s) shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Test Methods 204-204F, as applicable, or any other method approved by EPA, ARB, and the APCO.

6.2.2.2 The control efficiency of the VOC emission control system's control device shall be determined by using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Method 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

The control efficiency of the VOC emission control system's control device shall be calculated by using the following equation:

$$CE_{CONTROL} = [1 - (VOC_{OUT} / VOC_{IN})] \times 100\%$$

Where:

$CE_{CONTROL}$ = Control Efficiency, in percent

VOC_{IN} = VOC content, in grams/liter, less exempt compounds and water, into the control device

VOC_{OUT} = VOC content, in grams/liter, less exempt compounds and water, out of the control device.

6.2.2.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{CAPTURE \& CONTROL} = [CE_{CAPTURE} \times CE_{CONTROL}] / 100\ \%$$

Where:

$CE_{CAPTURE \& CONTROL}$ = Overall Capture and Control Efficiency, in percent

$CE_{CAPTURE}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.2.2.1

$CE_{CONTROL}$ = Control Efficiency of the control device, in percent, as determined in Section 6.2.2.2.

6.2.3 Determination of VOC Emissions

6.2.3.1 The emissions of VOCs, measured and calculated as carbon, shall be determined by using EPA Test Method 25, 25A, or 25B, as applicable. EPA Test Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.2.3.2 Total VOC emissions per day shall be determined for each source operation by using the following equation:

$$E_{Total} = \left[\left(\sum_{i=1}^{k} L_i V_i \right) + \left(\sum_{m=1}^{n} L_m V_m \times (1 - CE/100\%) \right) \right] / 454$$

Where:

ETotal = Total VOC emissions, in pounds per day

Li = Liters per day used of the "i"th organic solvent that is uncontrolled

Vi = Grams of VOC per liter of material of the "i"th organic solvent that is uncontrolled

Lm = Liters per day used of the "m"th organic solvent that is controlled

Vm	=	Grams of VOC per liter of material of the "m"th organic solvent that is controlled
CE	=	Overall capture and control efficiency of the control device, in percent, as determined in Section 6.2.2.3.

6.2.4 Multiple Methods of Determination

VOC emissions and overall capture and control efficiency determined to exceed any limits established by this rule through the use of any of the above-referenced test methods and equations shall constitute a violation of the rule.

3/7/08

RULE 4662 ORGANIC SOLVENT DEGREASING OPERATIONS (Adopted April 11, 1991; Amended September 19, 1991; Amended December 17, 1992; Amended April 19, 2001; Amended December 20, 2001; Amended September 20, 2007)

1.0 Purpose

The purpose of this rule is to limit volatile organic compounds (VOCs) and hazardous air pollutant emissions from organic solvent degreasing operations and to provide the administrative requirements for recording and measuring emissions.

2.0 Applicability

The requirements of this rule shall apply to all organic solvent degreasing operations.

3.0 Definitions

3.1 Aerospace Vehicle Component: any raw material, partial or completed fabricated part, assembly of parts, or completed unit of any aircraft, helicopter, missile, or space vehicle, including mockups and prototypes.

3.2 Aerospace Vehicle: the completed unit of any aircraft, helicopter, missile or space vehicle.

3.3 Airless Cleaning System: a degreaser that is automatically operated and seals at an absolute internal pressure of 0.02 psia or less, prior to the introduction of solvent vapor into the cleaning chamber and maintains differential pressure under vacuum during all cleaning and drying cycles.

3.4 Air-tight Cleaning System: a degreaser that is automatically operated and seals at a differential pressure no greater than 0.5 psig during all cleaning and drying operations.

3.5 APCO: as defined in Rule 1020 (Definitions).

3.6 ARB: California Air Resources Board.

3.7 ASTM: American Society for Testing and Materials.

3.8 Automated Parts Handling System: a mechanical device, such as a hoist or a conveyor, that carries all parts and parts baskets, at a controlled speed, from the point of initial loading of soiled or wet parts through the point of removal of the cleaned or dried parts.

3.9 Batch-loaded: an operation in which any material is placed in a non-conveyorized container for cleaning.

3.10 CFR: Code of Federal Regulations.

3.11 Cold Cleaner: any non-boiling solvent degreaser with an air-solvent interface.

3.12 Condenser Equipment: any equipment, such as refrigerated or non-refrigerated freeboard chillers, condenser coils, or water jackets, used to condense solvent vapor in a vapor degreaser.

3.13 Condenser Flow Switch: a safety switch which shuts off sump heat if condenser water fails to circulate or if condenser water temperature rises above the designated operating temperature.

3.14 Conveyorized Degreaser: any continuously loaded degreaser, with either boiling or non-boiling solvent. Conveyorized cold cleaners and conveyorized vapor cleaners shall be considered conveyorized degreasers.

3.15 Degreaser: a tank, tray, drum, or other container in which objects to be cleaned are exposed to a solvent or solvent vapor, in order to remove contaminants. The objects to be cleaned include, but are not limited to, parts, products, tools, machinery, and equipment.

3.16 Electrical Components: the internal components such as wires, windings, stators, rotors, magnets, contacts, relays, energizers, and connections in an apparatus that generates or transmits electrical energy including generators, transformers, and electric motors.

3.17 Electronic Components: the portions 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 cabinet in which the components are housed.

3.18 EPA: United States Environmental Protection Agency.

3.19 Freeboard Height:

3.19.1 For cold cleaners, the distance from the top of the solvent or solvent drain to the top of the degreaser based on inside tank dimensions.

3.19.2 For open-top vapor degreasing tanks, the distance from the solvent air-vapor interface to the top of the basic degreaser tank, based on inside tank dimensions.

3.19.3 For conveyorized degreasers, the distance from either the air-solvent or air-vapor interface to the top of the degreaser, based on inside tank dimensions.

3.20 Freeboard Ratio: the freeboard height divided by the smaller of the inside length or the inside width of the degreaser.

3.21 High Precision Optics: the optical elements used in electro-optical devices that are designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes of light energy levels.

3.22 Lip Exhaust: a device installed at the top of the opening of a degreaser that draws in air and solvent vapor from the freeboard area and ducts the air and vapor away from the solvent cleaning area.

3.23 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.24 Make-up Solvent: that solvent which is added to a degreaser operation to replace solvent lost through evaporation, carryout, splashing, leakage, or disposal.

3.25 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.26 Non-Leaking Container: a container without liquid leak.

3.27 Non-halogenated Solvent: a solvent that does not contain methylene chloride, perchloroethylene, trichloroethylene, carbon tetrachloride, 1,1,1, trichloroethane, chloroform or any combination of these solvents in a total concentration greater than five percent by weight.

3.28 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.29 Open-top Vapor Degreaser: any batch loaded, boiling solvent degreaser.

3.30 Organic Solvent Degreasing Operation: any cleaning activities which occur within a degreaser. Cleaning of ink, coating, or adhesive application equipment, and stripping of coatings are not considered organic solvent degreasing operations.

3.31 Perimeter Trough: a receptacle located below the primary condenser that conveys condensed solvent and atmospheric moisture to a water separator.

3.32 Primary Condenser: a series of cooling coils on the inner perimeter walls of a vapor degreaser through which a chilled substance is circulated to provide continuous condensation of rinsing solvent vapors, thereby creating a concentrated solvent vapor zone.

3.33 Refrigerated Freeboard Chiller: 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.

3.34 Remote Reservoir: a liquid solvent tank which is completely enclosed except for a single solvent return opening no larger than 15 in^2 which allows used solvent to drain into it from a separate solvent sink or work area and which is not accessible for soaking parts.

3.35 SCAQMD: South Coast Air Quality Management District.

3.36 Solvent: any liquid containing a volatile organic compound or combination of volatile organic compounds, which is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent, or for other similar uses. These liquids are principally derived from petroleum and include petroleum distillates, chlorinated hydrocarbons, chlorofluorocarbons, ketones, and alcohols. Effective through September 20, 2008, solutions, emulsions, and dispersions of water and soap, or water and detergent, that contain 50 grams of VOCs per liter or less, as used, are not considered to be organic solvents. On and after September 21, 2008, solutions, emulsions, and dispersions of water and soap, or water and detergent, that contain 25 grams of VOCs per liter or less, as used, are not considered to be organic solvents.

3.37 Space Vehicle: a vehicle designed to travel beyond the earth's atmosphere.

3.38 Spray Pump Safety Switch: a safety switch, which cuts off the pump of the spray applicator if the vapor level drops below a specified level.

3.39 Stripping: the removal of cured coatings, cured inks, or cured adhesives.

3.40 Superheated Vapor Zone: a region located within the vapor zone of a degreaser in which solvent vapors are heated above the solvent's boiling point.

3.41 Vapor Level Control Thermostat: a safety switch which turns off the sump heater if the thermostat senses the temperature rising above the designed operating level at the center of the air-vapor interface.

3.42 Ultrasonic: the enhancement of the cleaning process by vibrating the solvent with high frequency sound waves, causing implosion of microscopic vapor cavities within the liquid solvent.

3.43 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.44 Wipe Cleaning: a method of cleaning which utilizes a cloth, cotton swab or other material, wetted with a solvent, which is physically rubbed on the surface to be degreased.

4.0 Exemptions

4.1 The provisions of this rule do not apply to cleaning outside a degreaser.

4.2 The provisions of this rule shall not apply to any degreaser which:

4.2.1 uses unheated non-halogenated solvent, and

4.2.2 is covered except when parts are being added to, removed from, or handled in the solvent bath, and

4.2.3 has an open top surface area of less than 1.0 square foot, or with a capacity of less than 2.0 gallons, and

4.2.4 has a solvent usage, the difference between the amount of solvent at the end of the recordkeeping period and the total of the amount of solvent at the beginning of the recordkeeping period plus the amount of solvent added to the device during the recordkeeping period, of less than five (5.0) gallons per calendar month, and

4.2.5 is used only for one or more of the following cleaning applications:

4.2.5.1 electrical;

4.2.5.2 high precision optics;

4.2.5.3 electronic applications;

4.2.5.4 aerospace and military applications for the cleaning of solar cells, laser hardware, fluid system, and space vehicle components;

4.2.5.5 components used solely in research and development programs and laboratory tests in quality assurance laboratories.

4.3 The provisions of this rule shall not apply to one degreaser per building, which uses unheated, non-halogenated solvent exclusively, and has an open top surface area of less than 1.0 square foot and a capacity of less than 2.0 gallons, provided the degreaser is covered except when parts are being added to, removed from, or handled in the solvent bath.

4.4 Effective through September 20, 2008, except for applicable records specified in Section 6.1, the rule shall not apply to the a degreaser exclusively using non-halogenated cleaning material having a VOC content of 50 grams VOC per liter solvent or less, as used.

4.5 Effective on and after September 21, 2008, except for applicable records specified in Section 6.1, the rule shall not apply to a degreaser exclusively using non-halogenated cleaning material having a VOC content of 25 grams VOC per liter solvent or less, as used.

5.0 Requirements

5.1 Cold Cleaner Requirements

5.1.1 Effective October 19, 2002 through September 20, 2008, the operator of a cold cleaner (with or without a conveyor) shall exclusively use non-halogenated cleaning material with VOC content of 50 grams VOC per liter solvent or less.

5.1.2 Effective September 21, 2008, the operator of a cold cleaner (with or without a conveyor) shall exclusively use non-halogenated cleaning material with VOC content of 25 grams VOC per liter solvent or less.

5.1.3 In lieu of complying with Section 5.1.1 or Section 5.1.2, as applicable, an operator may install and maintain a VOC emission control system that meets the requirements of Section 5.2.

5.1.4 On and after September 20, 2008, if an operator of a cold cleaner is using a VOC emission control system to comply with this rule, the following requirements shall also be met:

5.1.4.1 The operating requirements of Sections 5.3.1 through 5.3.8 shall apply.

5.1.4.2 The cold cleaner shall have the following equipment:

5.1.4.2.1 A freeboard with a freeboard ratio of at least 1.0;

5.1.4.2.2 A container (degreaser) for the solvent and the articles being cleaned;

5.1.4.2.3 An apparatus or cover which prevents the solvent from evaporating when not processing work in the degreaser;

5.1.4.2.4 A facility for draining cleaned parts such that the drained solvent is returned to the container;

5.1.4.2.5 A permanent, conspicuous label posted on or near the degreaser which lists each of the operating requirements in Section 5.3; and

5.1.4.2.6 A permanent conspicuous mark locating the maximum allowable solvent level, that conforms to the freeboard requirement in Section 5.1.4.2.1.

5.2 Cold Cleaner VOC Emission Control System Requirements

For operators of cold cleaners (with or without a conveyer), solvents other than those specified in Section 5.1.1 or 5.1.2 may be used if the operator installs and maintains a VOC emission control system that meets all of the following requirements:

5.2.1 The VOC emission control system shall be under District permit.

5.2.2 The VOC emission control system shall comply with the requirements of Section 5.2.3 and 5.2.4 during periods of emission-producing activities.

5.2.3 The overall capture and control efficiency of the VOC emission control system shall be at least 85% by weight.

5.2.4 The VOC emission control system shall reduce VOC emissions, at all times, to a level that is not greater than the emission level which would have been achieved through the use of solvents compliant with the VOC content limits of Section 5.1.1 or Section 5.1.2, as applicable.

5.3 General Operating Requirements for Degreasers that are Not Cold Cleaners

Section 5.3.1 through Section 5.3.6 apply to all open-top vapor degreasers, all conveyorized degreasing equipment that are not cold cleaners, and all airless/airtight cleaning equipment.

5.3.1 An operator shall operate and maintain the degreaser equipment and emission control equipment in proper working order;

5.3.2 An operator shall not remove or open any device designed to cover the solvent unless processing work in the degreaser or performing maintenance on the degreaser;

5.3.3 An operator shall not degrease porous or absorbent materials such as cloth, leather, wood, or rope;

5.3.4 An operator shall, upon detection of a solvent leak, repair the solvent leak immediately, or shut down and drain the degreaser;

5.3.5 An operator shall use only a continuous fluid stream (not a fine, atomized, fan, or shower type spray) at a pressure which does not cause liquid solvent to splash outside of the solvent container, if a solvent flow is utilized;

5.3.6 An operator shall store or dispose of spent solvents, waste solvent cleaning materials such as cloth, paper, etc., in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty;

5.4 Open-Top Vapor Degreaser Requirements

In addition to complying with the applicable requirements of Section 5.3, an operator of an open-top vapor degreaser shall also comply with the following requirements:

5.4.1 Work loads shall not occupy more than half of the degreaser's open top area;

5.4.2 Solvent spraying shall be done at least four (4) inches below the top of the vapor layer;

5.4.3 Water shall not be visually detectable in the solvent returning from the water separator to the solvent cleaner;

5.4.4 For open-top vapor degreasers equipped with a lip exhaust, the exhaust shall be turned off when the degreaser is covered;

5.4.5 If the unit is equipped with a refrigerated freeboard chiller, or a primary condenser, or both, the following procedures shall be followed:

5.4.5.1 When starting up the degreaser, the cooling system shall be turned on before, or simultaneously with, the sump heater; and

5.4.5.2 When shutting down the degreaser, the sump heater shall be turned off before, or simultaneously with, the cooling system;

5.4.6 Exhaust ventilation should not exceed 65 cfm/ft^2 of degreaser open area, unless necessary to meet OSHA requirements. Ventilation fans shall not be positioned in such a way to disturb the vapor zone;

5.4.7 The vertical speed of a powered hoist for an open-top vapor degreaser, shall be not more than 2.2 inches/sec when moving parts in and out of the degreaser; and

5.4.8 The work load shall be degreased in the vapor zone until condensation ceases.

5.4.9 Open-top vapor degreasers shall be equipped with a cover designed such that it can be opened and closed easily without disturbing the vapor zone.

5.4.10 Open-top vapor degreasers shall be equipped with:

5.4.10.1 A freeboard with a freeboard ratio of at least 1.0.

5.4.10.2 A container (degreaser) for the solvent and the articles being cleaned;

5.4.10.3 An apparatus or cover which prevents the solvent from evaporating when not processing work in the degreaser;

5.4.10.4 A facility for draining cleaned parts such that the drained solvent is returned to the container;

5.4.10.5 A permanent, conspicuous label posted on or near the degreaser which lists each of the operating requirements in Section 5.3 and Sections 5.4.1 through 5.4.8; and

5.4.10.6 A permanent conspicuous mark locating the maximum allowable solvent level, that conforms to the freeboard requirement in Section 5.4.10.1.

5.4.10.7 An automated parts handling system;

5.4.10.8 Primary condensing coils;

5.4.10.9 A perimeter trough;

5.4.10.10 A water separator;

5.4.10.11 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 percent of the boiling point of the solvent, and;

5.4.10.12 A superheated vapor zone.

5.4.11 Open-top vapor degreasers shall not operate without one (1) of the following or a combination of the following major control devices:

5.4.11.1 Condenser equipment where the chilled air blanket temperature measured in degrees F at the coldest point on the vertical axis in the center of the degreaser shall be either no greater than 30 percent of the initial boiling point, measured in degrees F, of the solvent used, or 41°F;

5.4.11.2 Enclosed design (cover or door opens only when the dry part is actually entering or exiting the degreaser);

5.4.11.3 A carbon adsorption system which ventilates the air-vapor interface at a minimum rate of 50 cfm/ft^2 of degreaser opening, but not greater than 65 cfm/ft^2 of degreaser opening, unless required by OSHA standards, and exhausts less than 25 ppm of solvent by volume over a complete adsorption cycle, and with an overall capture and control efficiency of 85 percent; or

5.4.11.4 Any other system of emission control demonstrated to have an overall capture and control efficiency of at least 85 percent.

5.4.12 Open-top vapor degreasers shall include all of the following safety switches:

5.4.12.1 A condenser flow switch with a solvent temperature indicator, except where non-water refrigerant is used. The switch shall shut off the sump heat if either the condenser coolant stops circulating or becomes warmer than specified;

5.4.12.2 A spray pump safety switch; and

5.4.12.3 A manual reset vapor level thermostat with a solvent temperature indicator.

5.5 Conveyorized Degreaser that is Not a Cold Cleaner

In addition to complying with the applicable requirements of Section 5.3, an operator of a conveyorized degreaser that is not a cold cleaner, shall also comply with the following requirements:

5.5.1 Exhaust ventilation should not exceed 65 cfm/ft^2 of degreaser opening, unless necessary to meet OSHA requirements. Ventilation fans shall not be positioned in such a way to disturb the vapor zone;

5.5.2 Covers shall be provided for closing off the entrance and exit during shutdown hours. A cover shall be placed over entrances and exits of conveyorized degreasers immediately after the conveyor and exhaust are shut down and removed just before they are started up;

5.5.3 For degreasers with greater than 21.6 ft^2 air/vapor interface, a hood or enclosure with a delivery or ductwork to collect degreaser emissions, exhausting to a carbon adsorber or equivalent VOC emission control device;

5.5.4 The vertical speed of a powered hoist for conveyorized processes, shall be not more than 2.2 inches/sec when moving parts in and out of the degreaser; and

5.5.5 The work load shall be degreased in the vapor zone until condensation ceases.

5.5.6 Conveyorized degreasers shall not be operated without one (1) of the following or a combination of the following major control devices:

5.5.6.1 Condenser equipment where the chilled air blanket temperature measured in degrees F at the coldest point on the vertical axis in the center of the degreaser shall be either no greater than 30 percent of the initial boiling point, measured in degrees F, of the solvent used, or 41°F;

5.5.6.2 A carbon adsorption system which ventilates the air-vapor interface at a minimum rate of 50 cfm/ft^2, but not greater than 65 cfm/ft^2, unless required by OSHA standards, and exhausts less than 25 ppm of solvent by volume over a complete adsorption cycle, and with an overall capture and control efficiency of 85% by weight; or

5.5.6.3 Any other system of VOC emission control demonstrated to have an overall capture and control efficiency equivalent to 85%.

5.5.7 Conveyorized vapor degreasers shall be equipped with:

5.5.7.1 A freeboard such that the freeboard ratio is at least 1.0;

5.5.7.2 A container (degreaser) for the solvent and the articles being cleaned;

5.5.7.3 An apparatus or cover which prevents the solvent from evaporating when not processing work in the degreaser;

5.5.7.4 A facility for draining cleaned parts such that the drained solvent is returned to the container;

5.5.7.5 A permanent, conspicuous label posted on or near the degreaser which lists each of the operating requirements in Sections 5.4.1 though 5.4.8 and Sections 5.5.1 through 5.5.5;

5.5.7.6 A permanent conspicuous mark locating the maximum allowable solvent level, that conforms to the freeboard requirements in Section 5.5.7.1;

5.5.7.7 An automated parts handling system;

5.5.7.8 Primary condensing coils;

5.5.7.9 A perimeter trough;

5.5.7.10 A water separator;

5.5.7.11 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 percent of the boiling point of the solvent, and;

5.5.7.12 A superheated vapor zone.

5.5.8 Conveyorized degreasers shall include both the following control devices:

5.5.8.1 A drying tunnel or other means, such as a rotating basket, sufficient to prevent cleaned parts from carrying out solvent liquid or vapor; and

5.5.8.2 Minimized opening: entrances and exits should silhouette the work loads so that the average clearance between parts and the edge of the degreaser opening is either less than four (4) inches or less than ten (10) percent of the width of the opening, whichever is less.

5.5.9 Conveyorized degreasers shall be equipped with all of the following safety switches:

5.5.9.1 A condenser flow switch with a solvent temperature indicator, except where non-water refrigerant is used;

5.5.9.2 A spray pump safety switch; and

5.5.9.3 A manual reset vapor level thermostat with a solvent temperature indicator.

5.6 Air-Tight or Airless Cleaning System Requirements

In lieu of meeting the requirements of Sections 5.2 and 5.5, an operator may use an air-tight or airless batch cleaning system provided all the following requirements are met:

5.6.1 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.

5.6.2 All associated pressure relief devices shall not allow liquid solvents to drain out. Spills during solvent transfer shall be wiped up immediately and handled in accordance with Section 5.3.6.

5.6.3 A differential pressure gauge shall be installed to indicate the sealed chamber pressure.

6.0 Administrative Requirements

6.1 Recordkeeping Requirements

6.1.1 Solvent VOC Content: An operator subject to the requirements of this rule shall have solvent manufacturer specification sheets available for review.

6.1.2 Solvent Usage Records: An operator using solvents not in compliance with the requirements of Section 5.1 or Section 5.2, as appropriate, shall keep the following records for each degreaser on a monthly basis:

6.1.2.1 type of degreaser;

6.1.2.2 type of solvent and the VOC content of solvent, as used;

6.1.2.3 the solvent initial boiling point;

6.1.2.4 volume of solvent used, the difference in the amount of solvent from the beginning of the recordkeeping period to the end of the recordkeeping period; and

6.1.2.5 the volume of make-up solvent added to degreaser during the recordkeeping period.

6.1.3 Waste Disposal Records: Each time waste solvent residues associated with Section 5.3.6 or waste solvent are removed from the facility, keep records confirming compliance with the acceptable disposal methods listed in Section 5.3.6.

6.1.4 VOC Emission Control System Control Records

An operator using a VOC emission control system as a means of complying with this rule shall maintain daily records of key system operating parameters and maintenance procedures which will demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. Key system

operating parameters are those necessary to ensure compliance with VOC limits. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

6.1.5 Records Retention: An operator shall retain the records specified in Sections 6.1.1 through 6.1.4, as appropriate, on site for a period of five years, make the records available on site during normal business hours to the APCO, ARB, or EPA, and submit the records to the APCO, ARB, or EPA upon request.

6.2 Test Methods

The following test methods shall apply to this rule:

6.2.1 Initial boiling point of solvent shall be determined by ASTM D1078-05 (Standard Test Method for Distillation Range of Volatile Organic Liquids).

6.2.2 Determination of Overall Capture and Control Efficiency of a VOC Emission Control Systems

6.2.2.1 The capture efficiency of a VOC emission control system's collection device(s) shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable, or any other method approved by EPA, ARB, and the APCO.

6.2.2.2 The control efficiency of a VOC emission control system's VOC control device(s) shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device(s). EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.2.2.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{Capture\ and\ Control} = [\ CE_{Capture} \times CE_{Control}\ ] / 100$$

Where:

$CE_{Capture\ and\ Control}$ = Overall Capture and Control Efficiency, in percent.

$CE_{Capture}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.2.2.1.

$CE_{Control}$ = Control Efficiency of the control device, in percent, as determined in Section 6.2.2.2.

6.2.3 The VOC content of organic solvents and organic materials shall be determined by EPA Method 24 or 24A (Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings) or by SCAQMD Method 304 (Determination of Volatile Organic Compounds in Various Materials).

6.2.4 The VOC content of materials containing 50 g/l of VOC or less shall be determined by SCAQMD Method 313 (Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry).

6.2.5 Analysis of halogenated exempt compounds shall be by ARB Method 432.

6.2.6 Determination of Emissions: Emissions of VOC shall be measured by EPA Method 25, 25A or 25B, as applicable, and analysis of exempt compounds shall be analyzed by ARB Method 422.

6.2.7 Exhaust ventilation rates shall be measured by EPA Method 2, 2A, 2C, or 2D, as applicable.

RULE 4663 - ORGANIC SOLVENT CLEANING, STORAGE, AND DISPOSAL

(Adopted December 20, 2001)(Amended September 20, 2007)

1.0 Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from organic solvent cleaning and from the storage and disposal of solvents and waste solvent materials.

2.0 Applicability

The provisions of this rule shall apply to any organic solvent cleaning performed outside a degreaser during the production, repair, maintenance, or servicing of parts, products, tools, machinery, equipment, or in general work areas at stationary sources. The rule shall also apply to the storage and disposal of all solvents and waste solvent materials at stationary sources.

3.0 Definitions

3.1 Aerosol Product: a hand-held, non-refillable container that expels a pressurized solvent-containing product by means of a propellant-induced force.

3.2 APCO: as defined in Rule 1020 (Definitions).

3.3 Application Equipment: a device, including, but not limited to, a spray gun, brush, and roller, used to apply adhesives, coatings, or inks.

3.4 ARB: California Air Resources Board.

3.5 ASTM: American Society for Testing and Materials.

3.6 Bench Scale Project: a project (other than at a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top.

3.7 CFR: Code of Federal Regulations.

3.8 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.9 Cured Adhesive, Cured Coating, or Cured Ink: an adhesive, coating, or ink that is dry to the touch.

3.10 Degreaser: a tank, tray, drum or other container in which objects to be cleaned are exposed to a solvent or solvent vapor in order to remove contaminants. The

objects to be cleaned include, but are not limited to, parts, products, tools, machinery, and equipment. An enclosed spray application equipment cleaning system is not a degreaser.

3.11 Dissolver: an organic solvent that is added to an adhesive, coating, or ink in order to melt or to liquefy solid particles.

3.12 Electrical Apparatus or Electrical Components: all internal components 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 generators, transformers, and electric motors.

3.13 Electronic Components: all portions of an assembly such as circuit cards, printed wire assemblies, printed wiring boards, soldered joints, ground wires, bus bars, magnetic tapes and tape drive mechanisms, and other electronic fixtures, except the cabinet in which the components are housed.

3.14 EPA: United States Environmental Protection Agency.

3.15 Exempt Compound: an organic compound not classified as a volatile organic compound (VOC), as listed in the definition of volatile organic compound in Rule 1020 (Definitions).

3.16 Grams of VOC per liter of Material: the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{Ws - Ww - Wec}{Vm}$$

Where:

Ws	=	Weight of volatile compounds, in grams
Ww	=	Weight of water, in grams
Wec	=	Weight of exempt compounds, in grams
Vm	=	Volume of material, in liters

3.17 High Precision Optics: optical elements used in electro-optical devices which are designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.

3.18 Janitorial Cleaning: the cleaning of building or stationary source components such as floors, ceilings, walls, windows, doors, stairs, bathrooms, etc., excluding work areas where maintenance or manufacturing are performed.

3.19 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.20 Maintenance Cleaning: the cleaning of tools, forms, molds, jigs, machinery, and equipment (except coating application equipment, ink application equipment, or adhesive application equipment), and the cleaning of work areas where maintenance or manufacturing occurs.

3.21 Manufacturing Process: the process of making goods or articles by hand or by machine.

3.22 Medical Device: an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article, including any component or accessory that meets the following conditions:

3.22.1 is intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of diseases; or

3.22.2 is intended to affect the structure or any function of the body; or

3.22.3 is defined in the National Formulary or the United States Pharmacopeia, or any supplement to it.

3.23 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.24 Non-Atomized Solvent Flow: solvents in the form of a liquid stream without the introduction of any propellant.

3.25 Non-Leaking Container: a container without liquid leak.

3.26 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.27 Organic Solvent: the same as “Solvent.”

3.28 Organic Solvent Cleaning: an activity, or operation, or process, (including surface preparation, cleanup, or wipe cleaning), performed outside of a degreaser, that uses organic solvent to remove uncured adhesives, uncured coatings, uncured inks or other contaminants, including, but not limited to, dirt, soil, oil, lubricants, coolants, moisture, fingerprints, and grease, from parts, products, tools, machinery, application equipment and general work areas. Cleaning spray equipment used for the application of coatings, adhesives, or ink, is also considered to be organic solvent cleaning.

3.29 Propellant: any gas, including air, in a pressure container for expelling the contents when the pressure is released.

3.30 Repair Cleaning: a solvent cleaning operation or activity carried out during a repair process.

3.31 Repair Process: the process of returning a damaged object or an object not operating properly to good condition.

3.32 Research and Development: a facility or portion thereof used to further the development of useful materials, devices, systems, or methods, including, but not limited to, design, development, and improvement of prototypes and processes. Research and development does not include the manufacturing process itself.

3.33 Rolling, Consecutive 365-Day Period: any given date plus the immediate, previous 364 days.

3.34 SCAQMD: South Coast Air Quality Management District.

3.35 Scientific Instruments: instruments (including the components, assemblies, and subassemblies used in their manufacture) and associated accessories and reagents which are used for the detection, measurement, analysis, separation, synthesis, or sequencing of various compounds.

3.36 Solvent: any liquid containing a volatile organic compound or combination of volatile organic compounds, which is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent, or for other similar uses. These liquids are principally derived from petroleum and include petroleum distillates, chlorinated hydrocarbons, chlorofluorocarbons, ketones, and alcohols. Effective through September 20, 2008, solutions, emulsions, and dispersions of water and soap, or water and detergent, that contain 50 grams of VOCs per liter or less, as used, are not considered to be organic solvents. Effective on and after September 21, 2008, solutions, emulsions, and dispersions of water and soap, or water and detergent, that contain 25 grams of VOCs per liter or less, as used, are not considered to be organic solvents.

3.37 Solvent Flushing: the use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of equipment by flushing solvent, by a non-atomized solvent flow, through the equipment.

3.38 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.39 Stripping: the use of solvent to remove material such as cured adhesives, cured inks, cured or dried paint, cured or dried paint residue or temporary protective coating.

3.40 Surface Preparation: the removal of contaminants from a surface prior to the application of coatings, inks, or adhesives or before proceeding to the next step of a manufacturing process.

3.41 Thinner: a solvent that is used to dilute coatings to reduce viscosity, color strength, and solids, or to modify drying conditions.

3.42 Viscosity Reducer: an organic solvent which is added to an adhesive, coating or ink to make it more fluid.

3.43 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.44 Waste Solvent Material: any solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

3.45 Wipe Cleaning: a solvent cleaning activity performed by hand rubbing an absorbent material such as a rag, paper, sponge, brush, or cotton swab containing solvent.

4.0 Exemptions

The provisions of this rule shall not apply to:

4.1 Janitorial cleaning, including graffiti removal.

4.2 Stripping of cured coatings, cured adhesives, and cured inks, except the stripping of such materials from spray application equipment.

4.3 Any source operation that is subject to or specifically exempted by any of the following rules:

4.3.1 Rule 4602 (Motor Vehicle and Mobile Equipment Coating Operations). This exemption shall apply through December 31, 2008,

4.3.2 Rule 4603 (Surface Coating of Metal Parts and Products),

4.3.3 Rule 4604 (Can and Coil Coating Operations),

4.3.4 Rule 4605 (Aerospace Assembly and Component Coating Operations),

4.3.5 Rule 4606 (Wood Products Coating Operations),

4.3.6 Rule 4607 (Graphic Arts),

4.3.7 Rule 4612 (Motor Vehicle and Mobile Equipment Coating Operations – Phase II). This exemption shall apply on and after January 1, 2009,

4.3.8 Rule 4623 (Storage of Organic Liquids),

4.3.9 Rule 4652 (Coatings and Ink Manufacturing),

4.3.10 Rule 4653 (Adhesives),

4.3.11 Rule 4662 (Organic Solvent Degreasing Operations),

4.3.12 Rule 4672 (Petroleum Solvent Dry Cleaning Operations),

4.3.13 Rule 4684 (Polyester Resin Operations), or

4.3.14 Rule 4691 (Vegetable Oil Processing Operations).

4.4 Except for the records required in Section 6.2.4, the provisions of Section 5.1 shall not apply to an operator using 55 gallons or less of organic solvent products in all source operations subject to Rule 4663 in a stationary source, in any rolling, consecutive 365-day period.

4.5 The provisions of Table 1 shall not apply to the following applications:

4.5.1 Cleaning of solar cells, laser hardware, scientific instruments, or high precision optics.

4.5.2 Cleaning in laboratory tests and analyses, or bench scale or research and development projects.

4.5.3 Cleaning of clutch assemblies where rubber is bonded to metal by means of an adhesive.

4.5.4 Cleaning of paper-based gaskets.

4.6 The provisions of Table 1 Category C shall not apply to the cleaning of application equipment used to apply coatings on satellites and radiation effect coatings.

4.7 Until September 20, 2008, the provisions of Table 1 and Section 5.3 shall not apply to the cleaning of architectural coating application equipment provided that the cleaning solvent used does not exceed 950 grams of VOC per liter. Effective on and after September 21, 2008, such cleaning shall be performed in accordance with all provisions of the rule. An operator using solvent to clean architectural coating application equipment is exempt from the provisions of this rule if the facility meets the specifications of Section 4.4.

4.8 Cleaning with aerosol products shall not be subject to the VOC content limits of Table 1 and the work practices of Section 5.2.2 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 ARB regulations.

5.0 Requirements

5.1 Organic Solvent VOC Content Limits

An operator shall not use organic solvents for cleaning operations that exceed the VOC content limits specified in Table 1, in accordance with the corresponding effective date.

Table 1 – Organic Solvent VOC Content Limits

Type of Solvent Cleaning Operation	Effective November 15, 2003 through September 20, 2008 VOC Content Limit Grams of VOC/liter of material (lb/gal)	Effective on and after September 21, 2008 VOC Content Limit Grams of VOC/liter of material (lb/gal)
A. Product Cleaning During Manufacturing Process or Surface Preparation for Coating, Adhesive, or Ink Application		
1. General	50 (0.42)	25 (0.21)
2. Electrical Apparatus Components and Electronic Components	500 (4.2)	100 (0.84)
3. Medical Devices and Pharmaceuticals	800 (6.7)	800 (6.7)
B. Repair and Maintenance Cleaning		
1. General	50 (0.42)	25 (0.21)
2. Electrical Apparatus Components and Electronic Components	900 (7.5)	100 (0.84)
3. Medical Devices and Pharmaceuticals	800 (6.7)	800 (6.7)
3.1 Tools, Equipment, and Machinery		
3.2 General Work Surfaces	600 (5.0)	600 (5.0)
C. Cleaning of Coating or Adhesive Application Equipment	550 (4.6)	25 (0.21)

5.2 Cleaning Methods

5.2.1 Sections 5.2.2 through 5.2.8 shall apply to operators performing solvent cleaning operations outside the control of a VOC emission control system and the cleaning operations are not Table 1 Category A.1 or Table 1 Category B.1.

5.2.2 Until September 20, 2008, an operator performing cleaning operations from Table 1 (other than Category A.1 or Category B.1) and using solvent with VOC content greater than 50 g/L shall meet the requirements of Sections 5.2.5 through 5.2.7 in addition to meeting the applicable VOC content limits of Table 1.

5.2.3 On and after September 21, 2008, an operator performing cleaning operations from Table 1 (other than Category A.1, Category B.1 or Category C) and using solvent with VOC content greater than 25 g/L shall meet the requirements of Sections 5.2.5 through 5.2.7 in addition to meeting the applicable VOC content limits of Table 1.

5.2.4 Sections 5.2.5 through 5.2.7 shall not apply to operators performing Table 1 Category C cleaning operations outside the control of a VOC emission control system on and after September 21, 2008.

5.2.5 Cleaning activities that use solvents shall be performed by one or more of the following methods:

5.2.5.1 Wipe cleaning; or

5.2.5.2 Application of solvent from hand-held spray bottles from which solvents are dispensed without a propellant-induced force; or

5.2.5.3 Non-atomized solvent flow method in which 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

5.2.5.4 Solvent flushing method in which the cleaning solvent is discharged into a container that 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.

5.2.6 Solvent shall not be atomized into the open air unless it is vented to a VOC emission control system that complies with Section 5.4. This provision shall not apply to the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with spray bottles or containers described in Section 5.2.5.2.

5.2.7 An operator shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless

an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use.

5.3 In lieu of complying with the VOC content limits of Table 1 or complying with the provisions of Sections 5.2, an operator may control VOC emissions from solvent cleaning operations with a VOC emission control system that meets the requirements of Section 5.5.

5.4 Storage and Disposal of Solvents

An operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc., coatings, adhesives, catalysts, and thinners in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

5.5 VOC Emission Control System

5.5.1 In lieu of complying with the requirements in Section 5.1 or Section 5.2, an operator may comply with this rule by using a VOC emission control system in association with the solvent cleaning operation, provided that during emission-producing activities, the system complies with Sections 5.5.4 and 5.5.5 and either Section 5.5.2 or Section 5.5.3, as applicable.

5.5.2 The VOC emission control system's collection device(s) has a capture efficiency of at least 90 percent, by weight, of the emissions generated by the solvent cleaning operation and one of the following requirements:

5.5.2.1 The VOC emission control system's control device(s) has a control efficiency of at least 95 percent, by weight, or

5.5.2.2 The VOC emission control system has an output of less than 50 parts per million by weight (ppm) calculated as carbon with no dilution; or,

5.5.3 If the solvent cleaning activity is associated with operations subject to Rule 4661 (Organic Solvents), the VOC emission control system shall meet the VOC emission control system overall capture and control efficiency requirements as specified in Rule 4661 (Organic Solvents).

5.5.4 The VOC emission control system shall be approved by the APCO.

5.5.5 In no case shall compliance through use of a VOC emission control system result in VOC emissions in excess of the VOC emissions which would result from compliance with Section 5.1 or Section 5.2, as applicable.

6.0 Administrative Requirements

6.1 Compliance Statement Requirements

Manufacturers of any solvents subject to this rule shall indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, the VOC content, and density of the solvent, as supplied. The VOC content shall be expressed in units of gm/liter or lb/gallon.

6.2 Recordkeeping Requirements

An operator shall comply with the following recordkeeping requirements:

6.2.1 The operator shall retain the records specified in Sections 6.2.2 through 6.2.6, as applicable, on site for a period of five years, make the records available on site during normal business hours to the APCO, ARB, or EPA, and submit the records to the APCO, ARB, or EPA upon request.

6.2.2 Keep a copy of the manufacturer’s product data sheet or material safety data sheet of the solvents used for organic solvent cleaning activities.

6.2.3 Maintain a current list of solvents that are being used for organic solvent cleaning activities at the stationary source. The list shall include the following information:

6.2.3.1 The name of the solvent and its manufacturer’s name.

6.2.3.2 The VOC content of the solvent expressed in grams/liter or lb/gallon.

6.2.3.3 When the solvent is a mixture of different materials that are blended by the operator, the mix ratio of the batch shall be recorded and the VOC content of the batch shall be calculated and recorded in order to determine compliance with the specified limits of VOC content, as applied.

6.2.3.4 The type of cleaning activity for each solvent that is being used at the stationary source in accordance with the applicable cleaning category specified in Table 1 of this rule.

6.2.4 On and after September 20, 2007, the quantity of solvents used in solvent cleaning operations shall be recorded on a daily basis.

6.2.5 An operator claiming exemption under Section 4.4 shall keep records of any additional information necessary to confirm that 55 gallons or less of organic solvent products are used in all source operations subject to this rule at the stationary source in any rolling, consecutive 365-day period. An operator shall maintain usage records of non-compliant solvents on the days that non-compliant solvents are used.

6.2.6 VOC Emission Control System Records

6.2.6.1 An operator using a VOC emission control system pursuant to Section 5.5 as a means of complying with this rule shall maintain daily records of the VOC emission control system's key operating parameters during periods of emission-producing operations. Key system operating parameters are those necessary to ensure compliance with VOC limits. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

6.2.6.2 An operator shall keep records describing all maintenance work on the VOC emission control system that requires the VOC emission control system to be shut down.

6.3 Test Methods

6.3.1 Determination of VOC Content

6.3.1.1 The VOC content of solvents and organic materials shall be determined by using EPA Test Method 24 or 24A, or SCAQMD Method 304 (Determination of Volatile Organic Compounds in Various Materials), or by using the manufacturer's product formulation data and the formula for "Grams of VOC per liter of Material" in Section 3.0.

6.3.1.2 The content of exempt halogenated VOCs shall be determined by using the ARB Method 432 or SCAQMD Method 303 (Determination of Exempt Compounds).

6.3.2 Determination of Overall Capture and Control Efficiency of a VOC Emission Control System

6.3.2.1 The capture efficiency of a VOC emission control system's collection device(s) shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9,

1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable, or any other method approved by EPA, ARB, and the APCO.

6.3.2.2 The control efficiency of a VOC emission control system's control device(s) shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the VOC emission control system's control device. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.3.2.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{CAPTURE\ AND\ CONTROL} = [\ CE_{CAPTURE} \times CE_{CONTROL}\ ] / 100\ \%$$

Where:

$CE_{CAPTURE\ AND\ CONTROL}$ = Overall Capture and Control Efficiency, in percent

$CE_{CAPTURE}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.3.2.1

$CE_{CONTROL}$ = Control Efficiency of the control device, in percent, as determined in Section 6.3.2.2.

6.3.3 Determination of Solvent Losses from Spray Gun Cleaning Systems

The passive and active solvent losses from spray gun cleaning systems shall be determined by using SCAQMD "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems" dated October 3, 1989. The test solvent for this determination shall be lacquer thinner with a minimum vapor pressure of 105 mm Hg at 20°C. The minimum temperature shall be 15°C.

6.4 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.

6.5 Version of Test Methods

All ASTM test methods referenced in Section 6.0 are the most recently EPA-approved version that appears in the CFR as Materials Approved for Incorporation by Reference.

RULE 4672 PETROLEUM SOLVENT DRY CLEANING OPERATIONS (Adopted April 11, 1991, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to limit VOC emissions from petroleum solvent dry cleaning operations. Recordkeeping requirements, test methods and a compliance schedule are specified.

2.0 Applicability

This rule applies to petroleum solvent washers, dryers, solvent filters, settling tanks, vacuum stills, and other containers and conveyors of petroleum solvents that are used in petroleum solvent dry cleaning facilities.

3.0. Definitions

3.1 Cartridge Filter: a discrete filter unit containing both filter paper and activated carbon that traps and removes contaminants from petroleum solvents, together with the piping and ductwork used in the installation of this device.

3.2 Dryer: a machine used to remove petroleum solvents from articles of clothing or other textile or leather goods, after washing and removing of excess petroleum solvent, together with the piping and ductwork used in the installation of this device.

3.3 Leak: the dripping of liquid petroleum solvent at a rate of more than three (3) drops per minute from equipment in organic service; or an emission of organic compounds which causes a portable hydrocarbon detection instrument to register at least 10,000 ppm as methane, as determined by EPA Method 21.

3.4 Liquid and Vapor Leak: liquid and vapor leaks shall be determined by visual inspection of the following sources:

3.4.1 Hose connections, unions, couplings and valves;

3.4.2 Machine door gasket and seating;

3.4.3 Filter head gasket and seating;

3.4.4 Pumps;

3.4.5 Base tanks and storage containers;

3.4.6 Water separators;

3.4.7 Filter sludge recovery;

3.4.8 Distillation unit;

3.4.9 Diverter valves;

3.4.10 Saturated lint from lint basket; and

3.4.11 Cartridge filters.

3.5 Petroleum Solvent Dry Cleaner: a dry cleaning facility that uses petroleum solvent in a combination of washers, dryers, filters, stills, and settling tanks.

3.6 Petroleum Solvent: any clear petroleum distillate having a minimum flash point of 100°F, and the following distillation ranges: not less than 50 percent over at 350°F, 90 percent over at 375°F, and the end point not higher than 410°F. The distillation is performed at standard conditions.

3.7 Portable Hydrocarbon Detection Instrument: a hydrocarbon analyzer which uses the flame ionization detection or thermal conductivity methods and satisfies Method 21, 40 CFR Part 60. The instrument shall be equated to calibrating on methane and sampling at one (1) liter per minute.

3.8 Solvent Recovery Dryer: a class of dry cleaning dryers that employs a condenser to condense and recover solvent vapors evaporated in a closed-loop stream of heated air, together with the piping and ductwork used in the installation of this device.

3.9 Washer: a machine which agitates fabric articles in a petroleum solvent bath and spins the articles to remove the solvent, together with the piping and ductwork used in the installation of this device.

4.0 Exemptions

Dry cleaning facilities which use perchloroethylene dry cleaning solvents exclusively are not subject to this rule.

5.0 Requirements

A petroleum solvent dry cleaner shall comply with all of the following requirements:

5.1 Petroleum solvent dry cleaning equipment shall not be operated if solvent liquid and/or vapor is leaking from any portion of the equipment.

5.2 Solvents shall be stored in closed containers, except where closed containers are prohibited by law, regulation, or fire control authority.

5.3 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 as required for proper operation or maintenance.

5.4 All wastes from dry cleaning facilities subject to Department of Health Services regulation shall be stored, transported and disposed of in accordance with Department of Health Services regulations.

5.5 The used filtering material shall be put into a sealed container immediately after removal from the filter, unless the dry cleaning system is equipped with one of the following filtering systems:

5.5.1 Cartridge filters containing paper or carbon or a combination thereof which are fully drained in a sealed filter housing for at least 24 hours before being discarded, or 12 hours if the filter is dried in a dryer vented to an emission control device; or

5.5.2 Reduce the petroleum solvent content in all filtration wastes to one (1.0) kilograms or less per 100 kilograms dry weight of articles dry cleaned, before disposal, and exposure to the atmosphere.

5.6 A clearly visible label specifying leak inspection and leak repair cycle information for petroleum solvent dryers shall be posted. Such information should state:

> "To protect against fire hazards, loss of valuable solvents, and emissions of solvents to the atmosphere, periodic inspection of this equipment for evidence of leaks and prompt repair of any leaks is recommended. The EPA recommends that the equipment be inspected every 15 days. Each owner or operator shall repair all petroleum solvent vapor and liquid leaks within three (3) working days after identifying the sources of the leaks. If necessary repair parts are not on hand the owner or operator shall order these parts within three (3) working days, and repair the leaks no later than three (3) working days following the arrival of the necessary parts."

5.7 Articles which have been cleaned shall be transferred to the dryer within five (5) minutes after they are received from the washer, or shall be stored in closed transfer carts.

5.8 Emission Control Requirements: A person shall not operate any petroleum solvent dry cleaner unless one of the following requirements is satisfied:

5.8.1 Add-On-Control Device: All exhaust gases from drying tumblers, washers, and cabinets are vented through a control device, which reduces the total emissions of petroleum solvent vapors by at least 90 percent by weight.

5.8.2 Solvent Recovery Dryer: A solvent recovery dryer that recovers at least 90 percent of petroleum solvent by weight shall be installed. For the purpose of determining compliance with the 90 percent recovery efficiency of this Section, three (3) kilograms of petroleum solvent emitted per 100 kilograms dry weight of articles cleaned shall be deemed to be in compliance.

5.9 The flow rate of recovered solvent from the solvent recovery dryer at the termination of the recovery cycle shall not exceed 0.05 liters per minute.

6.0 Administrative Requirements

6.1 Recordkeeping

The following records shall be retained for a minimum of two (2) years and made available for inspection by the APCO upon request.

6.1.1 Usage Records: Any person seeking to satisfy the requirements of this rule shall maintain purchase and actual usage records showing amounts of solvents purchased and used.

6.1.2 Solvent Filtration Records: Any person subject to the requirements of this rule shall maintain records of pre-washed weight of articles cleaned per load.

6.1.3 Solvent Filtration Waste Records: Any person subject to the requirements of this rule shall maintain records which indicate the amount of volatile organic compounds contained in the filtration waste material per 100 kilograms dry weight of articles dry cleaned.

6.2 Test Methods

6.2.1 Determination of Emissions: Emissions of petroleum solvent subject to the rule shall be determined using EPA reference Method 18, EPA Method 25 and EPA Method 25A.

6.2.2 The flow rate of recovered solvent from the solvent recovery dryer shall be determined by EPA CFR Part 60, Subpart JJJ, § 60.624.

6.2.3 Leak detection shall be performed with a portable hydrocarbon detection instrument in accordance with EPA Method 21.

7.0 Compliance Schedule

7.1 The owner or operator of any existing petroleum dry cleaning facility subject to this rule shall comply with the following increments of progress:

7.1.1 By August 1, 1991, submit to the APCO a plan describing the methods to be used to comply with the applicable rule.

7.1.2 By November 1, 1991, submit a completed application for an Authority to Construct if needed.

7.1.3 By November 1, 1992, be in full compliance.

7.2 The owner of any new petroleum dry cleaning facility shall be in full compliance with this rule upon initial operation.

5/24/94

RULE 4681 RUBBER TIRE MANUFACTURING (Adopted May 16, 1991; Amended December 17, 1992; Amended December 16, 1993)

1.0 Purpose

The purpose of this rule is to limit VOC emission from rubber tire and recapping treadstock manufacturing facilities. Recordkeeping requirements, test methods and a compliance schedule are specified.

2.0 Applicability

The provisions of this rule shall apply to rubber tire and recapping treadstock manufacturing facilities.

3.0 Definitions

3.1 Bead Cementing: the application of solvent based cement to an assembled tire bead or to rubber coated steel wire to be assembled into a bead.

3.2 Green Tires: assembled tires before molding and curing have occurred.

3.3 Green Tire Coating: the operation of coating green tires, either inside or outside, with release compounds and or coatings which help remove air from the tire during molding and which prevent the tire from sticking to the mold after curing.

3.4 New Source: an emission source subject to this rule for which an initial authority to construct is issued on or after the effective date of adoption of this rule.

3.5 Rubber Tire Manufacturing: the production of passenger car tires, light and medium-duty truck tires, and other pneumatic rubber tires manufactured on assembly lines using automated equipment.

3.6 Recapping Tread Stock: vulcanized or unvulcanized rubber to be used for recapping prepared tire carcasses and which are delivered to the recapper with a cement coating on one side of the rubber.

3.7 Tread End Cementing: the application of solvent based cement to the tire tread ends.

3.8 Undertread Cementing: the application of solvent based cement to the underside of tire tread.

4.0 Requirements

Rubber tire and recapping tread stock manufacturing facilities shall comply with the following requirements:

4.1 Undertread Cementing Operations

4.1.1 The cement applicator, cement tank, and tread drying conveyor shall be enclosed during normal operations so that VOC which evaporate from these devices are captured.

4.1.2 All openings to the enclosure shall have a minimum indraft of 60 meters per minute except when the enclosure must be opened to allow work inside. Such opening shall be for the minimum time necessary.

4.1.3 All VOC captured shall be transported to an emission control device. The control device shall be designed and operated such that there is at least a 95 percent removal of VOC from the gas stream processed.

4.1.4 In addition to the foregoing, for new sources the tread drying conveyor shall be designed and operated to capture the emissions of VOC from the operation for at least 30 seconds after the undertread cement has been applied.

4.1.5 As an alternative to sections 4.1.1 through 4.1.4, any other equivalent emission reduction technique will be allowed, provided that undertread cement emissions are reduced to 15 grams of VOC or less per tire based on a daily average. That reduction technique will be approved by the APCO.

4.2 Green Tire Coating

Any person operating equipment which is subject to this section shall comply with the following requirements:

4.2.1 Green tire coating shall be waterborne. The VOC content of inside and outside coatings shall be no more than one (1) percent by weight if based on formulation data or ten (10) grams per liter of coating, including water but less exempt compounds, if determined by testing.

4.3 Bead Cementing

Any person operating equipment which is subject to this section shall comply with at least one of the following requirements:

4.3.1 Install and operate on the bead cementing line, an approved emission control system as defined in section 5.0 of this rule, or

4.3.2 Demonstrate to the satisfaction of the APCO that emissions, in grams per tire, from the bead cementing operation have been reduced by at least 75 percent from the daily average for the three (3) years prior to adoption of this rule. A demonstration of compliance shall be based upon appropriate records, which may include finished tire production, tire bead production, cement composition and usage.

4.4 Tread End Cementing

Any person operating equipment which is subject to this section shall comply with at least one (1) of the following requirements:

4.4.1 Install and operate on the tread end cementing line, an approved emission control system as defined in section 5.0 of this rule, or

4.4.2 Demonstrate to the satisfaction of the APCO that emissions, in grams per tire, from the tread end cementing operation have been reduced by at least 62 percent from the daily average for the three (3) years prior to adoption of this rule. A demonstration of compliance shall be based upon appropriate records, including finished tire production, tire tread production, cement composition and usage.

4.5 Containers

Containers for organic solvents and cements containing organic solvents shall be free from leaks at all times and shall be covered except when solvents or cements are being added or removed, when the containers are being cleaned, or during gauging.

5.0 Approved Emission Control System

An approved emission control system is equipment used to reduce emissions of VOCs. It consists of collection and control devices approved by APCO which satisfy the following conditions:

5.1 A carbon adsorption system designed and operated so that there is at least a 95 percent removal of VOC by weight from the gases ducted to the control device. All carbon adsorption units shall be equipped with continuous VOC monitoring equipment to detect carbon bed breakthrough; or

5.2 An incineration system that oxidizes at least 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the

incinerator to form carbon dioxide and water. All incinerators shall be equipped with temperature indicators in the combustion chamber;

5.3 It includes a collection system which is designed to achieve at least 85 percent collection of VOC emissions.

6.0 Administrative Requirements

6.1 Recordkeeping

Facilities subject to this rule shall maintain specified records on a daily basis. At a minimum, such records shall include finished tire production, tire component production, cement composition and usage and green tire coating test and certification records. The APCO may require specified additional records to be kept when needed to assess compliance with this rule. All required records shall be maintained for at least two (2) years and shall be available for inspection by the APCO on each production day.

6.2 Test Methods

6.2.1 The indraft flow rate at undertread cementing enclosures shall be determined with a calibrated anemometer.

6.2.2 Determination of Emissions: Emissions of VOC shall be analyzed by EPA Method 25a and exempt halogenated compounds shall be analyzed by ARB Method 422 .

6.2.3 Analysis of Samples: Samples of VOC as specified in this rule shall be analyzed by EPA Method 24 and exempt halogenated compounds shall be analyzed by ARB Method 432.

6.2.4 Capture efficiency shall be determined by methods described in 40 CFR 52.741.

7.0. Compliance Schedule

7.1 Facilities were to have been in compliance with this rule as originally written on November 1, 1984. Compliance with sections 4.1.5 and 4.2.1 is required on the date of adoption of amendments to those sections.

7.2 New sources shall comply with the provisions of section 4.0 at the time of construction.

RULE 4682 POLYSTYRENE, POLYETHYLENE, AND POLYPROPYLENE PRODUCTS MANUFACTURING (Adopted May 21, 1992; Amended December 17, 1992; Amended June 16, 1994; Amended September 20, 2007; Amended December 15, 2011)

1.0 Purpose

The purpose of this rule is to limit emissions of VOC and trichlorofluoromethane (CFC-11) and dichlorofluoromethane (CFC-12) from manufacturing and processing of products composed of polystyrene, polyethylene, or polypropylene and from the storage of VOC blowing agents.

2.0 Applicability

The provisions of this rule shall apply to any manufacturing, processing, and storage of products composed of polystyrene, polyethylene, or polypropylene.

3.0 Definitions

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

3.1 APCO: as defined in Rule 1020 (Definitions).

3.2 Approved Emission Control System: any system used to reduce emissions and consists of a capture and a control device, which are approved, in writing, by the APCO. The control system must be maintained and operated in such a manner that meets the following requirements:

3.2.1 The emission capture system shall collect at least 90 percent by weight of the emissions; and

3.2.2 The control device shall reduce emissions from the emission capture system by at least 95 percent, by weight.

3.3 ARB: California Air Resource Board.

3.4 Blowing Agent: any liquid or gaseous material, including VOCs, that facilitates the formation of a cellular product from raw polymeric material.

3.5 Chlorofluorocarbon (CFC): any chlorinated fluorinated compound of carbon, excluding chlorodifluoromethane (HCFC-22), dichlorotrifluoromethane (HCFC-123), tetrafluoroethane (HFC-134a), dichlorofluoroethane (HCFC-141b), and chlorodifluoroethane (HCFC-142b).

3.6 Controllable VOC Emission Sources: fluff silos or bins, reclaim extruders, condenser devolatizer vents, styrene recovery unit vents, and reclaim die hood exhausts in which materials manufactured with a VOC blowing agent are processed, or are stored, and from which emissions are vented to the atmosphere.

3.7 EPA: United States Environmental Protection Agency.

3.8 Expandable Polystyrene Molding: a series of processes where expandable polystyrene beads, which are polystyrene resin particles impregnated with blowing agent, undergo expansion, aging and then cup, shape or block molding to form a low-density foam product. During expansion, the beads are expanded to the appropriate desired density by exposure to steam or hot air in a pre-expander. During aging, the expanded beads (or pre-puff) are transferred to storage silos or mesh bags to stabilize and dry. During molding, the aged pre-puff is exposed to heat in a closed mold that causes the beads to soften, re-expand, and fuse together to form the shaped product.

3.9 Extrusion: the process in which a plastic resin is melted in an extruder and continuously forced through a die opening shaped like the finished product. As it leaves the die opening, the extruded plastic melt partially expands and is then drawn by a puller through forming equipment that sizes, cools, and cuts the product to length or winds it into a roll. With extruded foam products, blowing agent is injected under pressure directly into the extruder where it mixes with the plastic melt.

3.10 Fluff Silo or Bin: a container utilized for the storage of ground polystyrene foam for recycling.

3.11 Manufacturing Emissions: all emissions of VOC, CFC, or methylene chloride that occur during the manufacturing operation, quantified before any capture or control.

3.12 Manufacturing Operation: a production line or lines consisting of all steps in the processing of a polymer or resin, from the receipt of raw polymeric material by the manufacturing facility through the final step prior to shipment of the finished product from the manufacturing facility, and that results in VOC emissions to the atmosphere. Individual steps include, but are not limited to: expandable bead storage, finished product storage/aging, extrusion, expansion, softening or annealing, intermediate (pre-puff) storage/aging, decomposition, molding, grinding, and forming.

3.13 Operator: includes but is not limited to any person who owns, leases, supervises, or operates a facility and/or equipment.

3.14 Polyethylene (High and Low Density): linear thermoplastic polymers of ethylene with densities from 0.94 gram per cubic centimeter or higher.

3.15 Polymeric Material: a multi-molecular compound or mixture of compounds formed by polymerization and consisting essentially of repeating structural units.

3.16 Polypropylene: a high molecular weight thermoplastic crystalline polymer of propylene.

3.17 Polystyrene: a thermoplastic material which is a polymer of styrene.

3.18 Raw Material: all polystyrene, polyethylene and polypropylene, and blowing agent used in the manufacturing operation, including virgin and recycled polymeric materials.

3.19 Reclaim Die Hood Exhaust: an exhaust hood above reclaim extruder die intended to remove VOCs which escape from the extruder die.

3.20 Reclaim Extruder: equipment used to reprocess ground polystyrene foam into polystyrene pellets.

3.21 Reclaim Extruder Vent: the vent or opening through which emissions are expelled from the reclaim extruder.

3.22 Total Product Emissions: includes emissions from the manufacturing operation, after controls, plus the residual blowing agent in the finished product.

3.23 Volatile Organic Compound (VOC): defined in Rule 1020 (Definitions).

4.0 Exemptions

The provisions of Sections 5.1 and 5.2 shall not apply to manufacturing and processing operations using polymeric materials containing less than 1 percent volatile organic compounds by weight, and not using a blowing agent in their process.

5.0 Requirements

5.1 No operator shall place, hold, or store any VOC blowing agent in any stationary tank, reservoir or container having a capacity greater than 200 gallons unless one (1) of the following emission control systems is provided:

5.1.1 The container is a pressure vessel maintaining a working pressure at all times sufficient to prevent release of VOC emissions to the atmosphere under normal operating conditions; or

5.1.2 The container is equipped with an emission control device or system which collects and disposes of VOC emissions, and which achieves and maintains a vapor recovery/control efficiency of at least 95 percent by weight.

5.2 The operator shall not conduct any manufacturing operations, as defined in Section 3.0, unless one of the following emission reduction methods is met:

5.2.1 Effective until December 31, 2012, the operator demonstrates, to the satisfaction of the APCO, that the total product emissions do not exceed 2.4 pounds of VOC per 100 pounds of total material processed, calculated over a monthly period.

5.2.2 Effective on and after January 1, 2013, the operator of an extrusion facility shall demonstrate, to the satisfaction of the APCO, that the total product emissions do not exceed 2.4 pounds of VOC per 100 pounds of total material processed, calculated over a monthly period.

5.2.3 Effective on and after January 1, 2013, the operator of an expandable polystyrene molding facility shall demonstrate, to the satisfaction of the APCO, that the total product emissions do not exceed the following:

5.2.3.1 3.4 pounds of VOC per 100 pounds of total material processed, calculated daily, and

5.2.3.2 2.4 pounds of VOC per 100 pounds of total material processed, calculated over a monthly period.

5.2.4 A blowing agent other than a VOC or trichlorofluoromethane (CFC-11) or dichlorofluoromethane (CFC-12) is exclusively used.

5.2.5 An approved emission control system is installed and operating with manufacturing emissions vented only to the approved emission control system; and emissions from the final manufactured product are to be vented only to the approved emission control system for at least:

5.2.5.1 48 hours, in the case of expandable polystyrene molding operations that process more than 800,000 pounds per calendar year of raw material; or

5.2.5.2 24 hours, in the case of all other manufacturing operations.

5.2.5.3 The provision of Section 5.2.5.1 or 5.2.5.2 are not required for any facility that only manufactures polystyrene products and the highest concentration of the blowing agent in the product is 1.8 percent or less by weight, within 15 minutes after the completion of the final processing step, prior to any finished product storage. Verification of the concentration shall be demonstrated annually, pursuant to a protocol submitted to the District and subject to approval by the APCO.

5.2.6 The operator demonstrates to the satisfaction of the APCO that the manufacturing emissions are no greater than the facility emissions which would occur under Section 5.2.5, as calculated according to Section 5.4, and which does not include the use of trichlorofluoromethane (CFC-11) or dichlorodifluoromethane (CFC-12).

5.2.7 A control system that meets all of the following requirements shall be deemed as meeting the requirements of Section 5.2.6, unless the APCO determines that additional controls are required.

5.2.7.1 The beads used in manufacturing have an annual-average VOC content of less than 4.2% per weight; and

5.2.7.2 The manufacturing emissions (not including finished product storage emissions) are controlled with an overall capture and control efficiency of at least 93% by weight.

5.3 Operators subject to the provisions of Section 5.2.1, 5.2.2, or 5.2.3 who exceed the limit based on the monthly calculation, shall be considered to have been in violation for each day of that monthly period.

5.4 Facility emissions that would occur under 5.2.5 shall be calculated using the following formula, or other formula approved by the APCO and EPA:

$$FE = [1- (0.90 \times 0.95)] \times [(P1 + AS - P2) + (P2 - P3)]$$

where
FE = Facility Emissions for Section 5.2.5
P1 = Amount of VOC in the received material
AS = Amount of VOC added to the material
P2 = Amount of VOC in the finished product, measured within 15 minutes after the final processing step, prior to finished product storage.

P3 = Amount of VOC in the finished product after warehousing for 48 hours (for facilities subject to Section 5.2.5.1) or 24 hours (for all others). (P2 - P3) = 0 for products with residual VOC amounts of 1.8 percent or less by weight.

5.5 Compliance Plan

No later than March 20, 2009, operators complying with Section 5.2.1, 5.2.6, or 5.2.7 shall submit to the APCO a Compliance Plan which includes all necessary information to show the proposed method of compliance with the applicable section. No later than January 1, 2013, operators complying with Section 5.2.3 shall submit to the APCO a Compliance Plan which includes all necessary information to show the proposed method of compliance with the applicable section. Such information shall include, but not be limited to:

5.5.1 Potential VOC emissions,

5.5.2 Overall VOC capture and control efficiency of VOC emission control system,

5.5.3 Material VOC content at relevant manufacturing points. The amount of VOC in the material shall be determined using the test method in Section 6.2.4, or other method approved by the APCO and EPA.

5.5.4 VOC emission calculation formula which will be used to show compliance, and

5.5.5 Operational characteristics of the VOC emission control systems which will be monitored to show continued compliance with the applicable limits.

5.5.6 Any operational or equipment limitations that are necessary to make the demonstration enforceable and which will be included as a condition on the appropriate Permit to Operate.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 Any person subject to the provisions of this rule, including exempt facilities, shall maintain records of operation, including but not limited to the amount of material processed, the equipment used, and the type of the blowing agent used. Records shall be maintained with a minimum monthly totals with the ability to calculate daily averages in any given month.

6.1.2 Any person using an emissions control system as a means of complying with this rule, shall maintain daily records of key system operating and maintenance procedures which will demonstrate continuous operation and compliance of the emission control device. Key system operating parameters are those necessary to ensure compliance with VOC emission requirements such as temperature, pressures, and flow rates.

6.1.3 Operators complying with Section 5.2.1, 5.2.2, or 5.2.3 shall maintain records necessary to show compliance with that section and shall, once every month, calculate the daily average VOC emissions, based on the records for the preceding monthly period, according to the approved VOC emission calculation formula.

6.1.4 Operators complying with Section 5.2.3 shall maintain records necessary to show compliance with that section and shall, once every day, calculate the daily VOC emissions, according to the approved VOC emission calculation formula.

6.1.5 The operator shall keep in the facility all records required to demonstrate compliance with the requirements of this rule for a minimum of five years. The records shall be made available at the facility during normal business hours to the APCO, ARB, or EPA. The records shall be submitted to the APCO, ARB, or EPA upon request.

6.2 Test Methods

Alternative test methods, that are equivalent to those specified in Sections 6.2.1 through 6.2.4, may be used, provided that those test methods have been approved in writing by the APCO and EPA.

6.2.1 The control efficiency of the emission control system shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates, and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device.

6.2.2 The capture efficiency of an emission capture control system shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable.

6.2.3 EPA Method 18 or ARB Test Method 422 for determination of exempt compounds and halogenated blowing agents.

6.2.4 The VOC blowing agent contained in polymeric materials shall be determined using South Coast Air Quality Management District (SCAQMD) Method 306 (Analysis of Pentanes in Expandable Styrene Polymers) or Bay Area Air Quality Management District (BAAQMD) Method 45 (Determination of Butanes and Pentanes in Polymeric Materials).

6.2.5 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.

8/26/11

RULE 4684 POLYESTER RESIN OPERATIONS (Adopted May 19, 1994; Amended December 20, 2001; Amended September 20, 2007; Amended September 17, 2009; Amended August 18, 2011)

1.0 Purpose

The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) from polyester resin operations, fiberglass boat manufacturing operations and the organic solvent cleaning, and the storage and disposal of solvents and waste solvent materials associated with such operations.

2.0 Applicability

The provisions of this rule apply to commercial and industrial polyester resin operations, fiberglass boat manufacturing operations, and to the organic solvent cleaning, and the storage and disposal of all solvents and waste solvent materials associated with such operations.

3.0 Definitions

The following definitions apply for the purpose of this rule.

3.1 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.2 Application Equipment: a device, including, but not limited to, a spray gun, brush, and roller, used to apply adhesives, coatings, or inks.

3.3 ARB: California Air Resources Board.

3.4 Assembly Adhesive: a chemical material used in joining fiberglass, metal, foam, or wood parts to another to form a temporary or permanently bonded assembly. Assembly adhesives include, but are not limited to, methacrylate adhesives and putties made from polyester or vinylester resin mixed with inert filler or fibers.

3.5 ASTM: American Society of Testing and Materials International.

3.6 Atomized Resin Application: a resin application technology in which the resin leaves the application equipment and breaks into droplets or an aerosol as it travels from the application equipment to the surface of the part. Atomized resin application includes, but is not limited to, resin spray guns and resin chopper spray guns.

3.7 Bench Scale Project: a project (other than at a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top.

3.8 Catalyst: a substance that is added to resin to initiate or promote polymerization.

3.9 CFR: Code of Federal Regulations.

3.10 Cleaning Materials: materials including, but not limited to, materials used for cleaning hands, tools, molds, application equipment, and work areas.

3.11 Clear Gel Coat: a gel coat that is clear or translucent so that underlying colors are visible. Clear gel coat is used to manufacture parts for sale. Clear gel coat does not include tooling gel coat used to build or repair molds.

3.12 Closed Molding Process: a molding process in which pressure is used to distribute the resin through the reinforcing fabric placed between two mold surfaces to either saturate the fabric or fill the mold cavity. The pressure may be clamping pressure, fluid pressure, atmospheric pressure, or vacuum pressure used either alone or in combination. The mold surfaces may be rigid or flexible. Closed molding includes, but is not limited to, compression molding with sheet molding compound, infusion molding, resin injection molding (RIM), vacuum-assisted resin transfer molding (VARTM), resin transfer molding (RTM), and vacuum-assisted compression molding. Processes in which a closed mold is used only to compact saturated fabric or remove air or excess resin from the fabric (such as in vacuum bagging) are not considered closed molding. Open molding steps, such as application of gel coat or skin coat layer by conventional open molding prior to a closed molding process are not closed molding.

3.13 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.14 Corrosion–Resistant Material: a polyester resin material used to make products for corrosion resistant applications such as tooling, fuel or chemical tanks, boat hulls, pools and outdoor spas.

3.15 Cure: to polymerize, i.e., to transform from a liquid to a solid state or semi-solid state to achieve desired physical properties for the product, including hardness.

3.16 Cured Coating: a coating that is dry to the touch.

3.17 Degreaser: a tank, tray, drum or other container in which objects to be cleaned are exposed to a solvent or solvent vapor in order to remove contaminants. The objects to be cleaned include, but are not limited to, parts, products, tools, machinery, and equipment. An enclosed spray application equipment cleaning system is not a degreaser.

3.18 Dissolver: an organic solvent that is added to an adhesive, coating, or ink in order to melt or to liquefy solid particles.

3.19 EPA: United States Environmental Protection Agency.

3.20 Fiberglass Boat: a vessel in which either the hull or deck is built from a composite material consisting of thermosetting resin matrix reinforced with fibers of glass, carbon, or other material.

3.21 Fiberglass Boat Manufacturing: facilities that manufacture hulls or decks of boats from fiberglass, or build molds to make fiberglass boat hulls or decks. Facilities that manufacture solely parts of boats (such as hatches, seats, or lockers), or boat trailers, but do not manufacture boat hulls or decks from fiberglass or build molds to make fiberglass boats or hulls are not considered fiberglass boat manufacturing. A facility that manufactures hulls or decks, or molds for hulls or decks, and other fiberglass boat parts, including small parts such as hatches, seats, and lockers, is considered fiberglass boat manufacturing. Fiberglass boat manufacturing operations include open molding resin and gel coat operations (these include pigmented gel coat, clear gel coat, production resin, tooling gel coat, and tooling resin), resin and gel coat mixing operations, and resin and gel coat application equipment cleaning operations.

3.22 Filament Application: a method of applying resin to an open mold that involves feeding reinforcement fibers through a resin bath and winding the resin-impregnated fibers on a rotating mandrel.

3.23 Filled Polyester Resin Material: a material formulated by adding compatible filler(s) to polyester resin material(s).

3.24 Filler: 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.

3.25 Fire Retardant Material: a polyester resin material used to make products that are resistant to flame or fire.

3.26 Fluid Impingement Technology: a spray gun that produces an expanding non-misting curtain of liquid by the impingement of low-pressure uninterrupted liquid streams.

3.27 Gel Coat: a polyester resin topcoat that provides a cosmetic enhancement and improves resistance to degradation from environmental exposure.

3.28 Grams of VOC per liter of material: grams VOC per liter of material is determined as follows:

Grams VOC per liter of material = $(W_s - W_w - W_{es}) / V_m$

Where:

W_s = weight of all volatile compounds, in grams
W_w = weight of water, in grams
W_{es} = weight of exempt solvents, in grams
V_m = volume of the material, in liters

3.29 High-Strength Material: polyester resins which have a casting tensile strength of 10,000 psi or more and which are used primarily for manufacturing high performance boats and skis.

3.30 High-Volume, Low-Pressure (HVLP) Spray Equipment: equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure, measured dynamically at the center of the air cap and the air horns.

3.31 Lamination Resin: an orthophthalate, isophthalate and dicyclopentadiene (DCPD) resin which is used in composite system made of layers of reinforcement fibers and resins, such as in boat fabrication.

3.32 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.33 Maintenance Cleaning: the cleaning of tools, forms, molds, jigs, machinery, and equipment (except coating application equipment, ink application equipment, or adhesive application equipment), and the cleaning of work areas where maintenance or manufacturing occurs.

3.34 Manual Application: the application of resin to an open mold using a hand lay-up technique. Components of successive plies of resin-impregnated reinforcement fibers are applied using hand tools such as brushes and rollers.

3.35 Manufacturing Process: the process of making goods or articles by hand or by machine.

3.36 Marble Resin: an orthophthalate and modified acrylic isophthalate resin, which is designed for the fabrication of cast products, such as vanities.

3.37 Mold: the cavity or surface into or on which gel coat, resin, and fibers are placed and from which finished fiberglass parts take their form.

3.38 Monomer: an organic compound, such as styrene, that reacts with unsaturated polyester resins to form a cured polyester resin.

3.39 Month: a calendar month.

3.40 Neat Resin: a resin to which no filler has been added.

3.41 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.42 Non-Atomized Resin Application: an 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 the part. Non-atomized resin application technology includes, but is not limited to, non-atomizing spray guns, flowcoaters, chopper flowcoaters, pressure fed resin rollers, resin impregnators, or fluid impingement technology.

3.43 Non-Atomized Solvent Flow: solvents in the form of a liquid stream without the introduction of any propellant.

3.44 Non-Atomizing Spray Gun: a spray gun from which the resin flows in a steady and observable coherent flow, with no droplets formed in the area that is within the first three (3) inches of the applicator orifice. Droplets may form in the area greater than three (3) inches from the applicator orifice.

3.45 Non-Leaking Container: a container without a liquid leak.

3.46 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.

3.47 Open Molding Resin and Gel Coat Process: a process in which the reinforcing fibers and resin are placed in the mold and are open to the surrounding air while the reinforcing fibers are saturated with resin. For the purpose of this rule, open molding includes operations in which a vacuum bag or similar cover is used to compress the uncured laminate to remove bubbles or excess resin, or to achieve a bond between core material and a laminate.

3.48 Organic Solvent: the same as "Solvent."

3.49 Organic Solvent Cleaning: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.50 Pigmented Gel Coat: opaque gel coat used to manufacture parts for sale. Pigmented gel coat does not include tooling gel coat used to build or repair molds.

3.51 Polyester Resin Materials: materials including, but not limited to: unsaturated 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 materials used in polyester resin operations.

3.52 Polyester Resin Operations: methods used for the production or rework of products by mixing, pouring, hand layup, impregnating, injecting, forming, winding, spraying, and/or curing with fiberglass, fillers, or any other reinforcement materials and associated cleanup.

3.53 Polymer: a chemical compound comprised of a large number of chemical units and which is formed by chemical linking of monomers.

3.54 Production Resin: a general purpose resin material that is not especially corrosion resistant, fire retardant, high strength, or gel coats.

3.55 Propellant: any gas, including air, in a pressure container for expelling the contents when the pressure is released.

3.56 Repair: the process of returning a damaged object or an object not operating properly to good condition.

3.57 Repair Cleaning: a solvent cleaning operation or activity carried out during a repair.

3.58 Research and Development: a facility or portion thereof used to further the development of useful materials, devices, systems, or methods, including, but not limited to, design, development, and improvement of prototypes and processes. Research and development does not include the manufacturing process itself.

3.59 Resin: a class of organic polymers of natural or synthetic origin used in reinforced products to surround and hold fibers or filler particles, and is solid or semisolid in the cured state.

3.60 Resin and Gel Coat Operation: an operation in which resin or gel coat, including the mixing of putties or polyputties, is combined with additives that include, but are not limited to, fillers, promoters, or catalysts.

3.61 SCAQMD: South Coast Air Quality Management District.

3.62 Skin Coat: a layer of resin and fibers applied over gel coat to protect the gel coat from being deformed by the next laminate layers.

3.63 Small Job: minor resin or gel coat application project which requires only a very limited amount of materials. Total material use for all small jobs at a facility shall not exceed two (2) gallons a day.

3.64 Solid Surface Resin: a resin, which is used, without gel coats, to fabricate homogenous solid surface products.

3.65 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.66 Specialty Gel Coat: a gel coat which is used in conjunction with fire retardant, corrosion resistant or high-strength materials.

3.67 Specialty Resin: a halogenated, furan, bisphenol A, vinyl-ester, or isophthalic resin used to make products for exposure to one or more of the following extreme environmental conditions: acute or chronic exposure to corrosive agents, caustic agents, acidic agents, or flame.

3.68 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.69 Tooling Gel Coat: the gel coat used to build or repair molds (also known as tools) or prototypes (also known as plugs) from which the molds will be made.

3.70 Tooling Resin: the resins used to build or repair molds (also known as tools) or prototypes (also know as plugs) from which the molds will be made.

3.71 Touch-up: The application of resin or gel coat to correct minor cosmetic imperfections that occur during fabrication or field installations.

3.72 Tub/Shower Resin: a dicyclopentadiene (DCPD) resin, along with orthophthalate and isophthalate resins, which are used to fabricate bathware products.

3.73 Vapor Suppressant: a substance added to resin to minimize the transfer of monomer vapor into the atmosphere.

3.74 Vinylester Resin: a thermosetting resin containing esters of acrylic or methacrylic acids having a double-bond and ester linkage sites at the end of the resin molecules.

3.75 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.76 Waste Materials: materials including but not limited to paper or cloth used for cleaning operations, waste resins, or spent cleaning materials.

4.0 Exemptions

4.1 Except for fiberglass boat manufacturing operations, the provisions of this rule, other than the recordkeeping requirements of Section 6.1, shall not apply to any polyester resin operation provided the volume of polyester resin materials used is less than 20 gallons per month.

4.2 For fiberglass boat manufacturing, production resins (including skin coats) that must meet the specifications for use in military vessels or must be approved by the U.S. Coast Guard for use in construction of lifeboats, rescue boats, and other life-saving appliances approved under 40 CFR subchapter Q, or to the construction of small passenger vessels regulated by 46 CFR subchapter T are exempt from the requirements of Section 5.2.2. Production resins that meet these criteria shall be applied with nonatomizing resin application equipment.

4.3 The solvent cleaning provisions of Section 5.3 Table 4 shall not apply to the following applications:

4.3.1 Cleaning of solar cells, laser hardware, scientific instruments, or high precision optics.

4.3.2 Cleaning in laboratory tests and analyses, or bench scale or research and development projects.

5.0 Requirements

5.1 Polyester Resin Operation, except for Fiberglass Boat Manufacturing subject to Section 5.2.2.

5.1.1 An operator of a polyester resin operation shall comply with one of the following process or control requirements:

5.1.1.1 Prior to January 1, 2013, use low-VOC polyester resins with the following monomer content: Low VOC resins, except for specialty resins and gel coats, containing no more than 35% monomer by weight. Low VOC pigmented gel coats containing

no more than 45% monomer by weight. Low VOC specialty resins and clear gel coats containing no more than 50% monomer by weight; or comply with Section 5.1.1.3, 5.1.1.4, or 5.1.1.5.

5.1.1.2 On and after January 1, 2013, use materials in an open molding process that comply with the weighted average monomer VOC content limits in Table 1. In addition to complying with Table 1 limits, the non-monomer VOC content of each resin and gel coat shall not contain more than 5 percent by weight of the resin or gel coat; or comply with Section 5.1.1.3, 5.1.1.4, or 5.1.1.5.

Table 1 Compliant Materials Weighted Average Monomer VOC Content for Open Molding Resin and Gel Coat

Material	Weight Percent Limit on and after January 1, 2013
a. General Purpose Resin	
- Marble Resin	10% or 32%, as supplied, with no fillers
- Solid Surface Resin	17%
- Tub/Shower Resin	24% or 35%, as supplied, with no fillers
- Lamination Resin	31% or 35%, as supplied, with no fillers
b. Tooling Resin	
- Atomized (spray)	30%
- Non-atomized	39%
c. Specialty Resin	
- Fire Retardant Resin	38%
- High Strength Materials	40%
- Corrosion Resistant Resin	48%
d. All Other Resin	35%
e. Tooling Gel Coat	40%
f. Pigmented Gel Coat	
- White and Off White	30%
- Non-White	37%
- Primer	28%
g. Clear Gel Coat	
- Marble Resin	40%
- Other Resin	44%
h. Specialty Gel Coat	48%

5.1.1.3 Use resin containing a vapor suppressant, such that the weight loss from the VOC emissions does not exceed 50 grams per square meter of exposed surface during resin polymerization; or

5.1.1.4 Use a closed-mold system; or

5.1.1.5 Install and operate a VOC emission control system which meets all of the requirements of Sections 5.1.1.5.1 through 5.1.1.5.3 during periods of emission producing activities.

5.1.1.5.1 The VOC emission control system shall be approved, in writing, by the APCO.

5.1.1.5.2 The VOC emission control system shall have an overall capture and control efficiency of at least 90 percent by weight, demonstrated using the applicable test method(s) in Section 6.2.

5.1.1.5.3 The VOC emission control system shall reduce VOC emissions, at all times, to a level that is not greater than the emission which would have been achieved through the use of compliant materials, compliant equipment, or compliant work practices, as applicable. The following equation shall be used to determine if the minimum required overall capture and control efficiency of an emission control system is at an equivalent or greater level of VOC reduction as would be achieved using compliant materials, equipment, or work practices:

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

Where:

CE = Minimum Required Control Efficiency specified in Section 5.1.1.5.2 in percent.

VOC_{LWc} = VOC content of applicable resin, gel coat, or solvent of Rule 4684, less water and less exempt compounds.

$VOC_{LWn,Max}$ = Maximum VOC content of resin, gel coat, or solvent, used in conjunction with a control device, less water and less exempt compounds.

$D_{n,Max}$ = Density of the noncompliant resin, gel coat, or solvent, containing the maximum VOC content of the multi-component material.

D_c = Density of corresponding resin, gel coat or solvent, used in the compliant resin, gel coat, or solvent.

5.1.1.6 Resins and gel coats used for touch up, repair, or small jobs, may have a monomer content limit up to 10% more than the applicable limit set forth in Table 1. Such resins or gel coats shall only be applied by a hand-held atomized spray gun which has a container for the resin or gel coat as part of the gun. Resins or gels applied by another method shall comply with the applicable limit in Table 1. Total material use for all small jobs at a facility shall not exceed two (2) gallons a day.

5.1.2 Spray application of polyester resin shall only be performed using airless, air assisted airless, high-volume, low-pressure (HVLP) spray equipment, or electrostatic spray equipment.

5.1.2.1 High-Volume, Low-Pressure (HVLP) spray equipment shall be operated in accordance with the manufacturer's recommendations.

5.1.2.2 For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.1.2.3 A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Section 3.0.

5.1.3 In lieu of complying with the applicable requirements of 5.1.2, an operator may install and maintain a VOC emission control system that meets the requirements of Section 5.1.1.5 around the coating application operation.

5.2 Fiberglass Boat Manufacturing Operation

5.2.1 Requirements for Closed Molding Process

An operator of a fiberglass boat manufacturing facility who uses a closed molding process, as defined in Section 3.0, shall comply with the applicable requirements of Sections 5.1, 5.3, 5.4, and 6.0.

5.2.2 Requirements for Open Molding Process

5.2.2.1 An operator of a fiberglass boat manufacturing facility who uses an open molding process, as defined in Section 3.0, and whose total actual VOC emissions from all fiberglass boat manufacturing operations, including related solvent cleaning activities, at a stationary source are equal to or greater than 2.7 tons of VOC per 12-month rolling period, before consideration of controls, shall comply with at least one of the Compliance Options in Section 5.2.2.4 through 5.2.2.6, and the applicable requirements of Sections 5.3, 5.4, and 6.0.

5.2.2.2 An operator subject to Section 5.2.2.1 shall comply with the applicable recordkeeping requirements of Section 6.1 and calculate the fiberglass boat manufacturing facility emissions to demonstrate if the VOC emissions from all fiberglass boat manufacturing operations, including related solvent cleaning activities, at a stationary source are equal to or greater than 2.7 tons of VOC per 12-month rolling period, before consideration of controls.

5.2.2.3 An operator of an open molding process whose total actual VOC emissions from all fiberglass boat manufacturing operations, including related solvent cleaning activities, at a stationary source are less than 2.7 tons of VOC per 12-month rolling period, before consideration of controls, shall comply with the applicable requirements of Sections 5.1, 5.3, 5.4, and 6.0. The operator shall comply with the applicable recordkeeping requirements of Section 6.1 and calculate the fiberglass boat manufacturing facility emissions to demonstrate if the VOC emissions from all open molding fiberglass boat manufacturing operations, including related cleaning activities are less than 2.7 tons of VOC per 12-month rolling period.

5.2.2.4 Requirements for Compliant Materials

5.2.2.4.1 An operator subject to Section 5.2.2.1 shall not use materials in any open molding process that exceed the weighted average monomer VOC content limits in Table 2. In addition to complying with Table 2 limits, the non-monomer VOC content of each resin and gel coat shall not contain more than 5 percent by weight of the resin or gel coat.

Table 2 Compliant Materials Monomer VOC Content for Open Molding Resin and Gel Coat for Fiberglass Boat Manufacturing Operation		
Material	Application Method	Weighted Average Monomer VOC content (weight percent) limit
Production Resin	Atomized (spray)	28%
Production Resin	Non-atomized	35%
Pigmented Gel Coat	Any method	33%
Clear Gel Coat	Any method	48%
Tooling Resin	Atomized	30%
Tooling Resin	Non-atomized	39%
Tooling Gel Coat	Any method	40%

5.2.2.4.2 The weighted average monomer VOC content shall be determined based on a 12-month rolling average. The operator shall use Equation 1 to determine weighted average monomer content for a particular open molding resin or gel coat material.

Equation 1:

$$\text{Weighted Average Monomer VOC Content} = \frac{\sum_{i=1}^{n}(M_{(i)}\,VOC_{(i)})}{\sum_{i=1}^{n}(M_{(i)})}$$

Where:

$M_{(i)}$ = Mass of open molding resin or gel coat i used in the past 12 months in an operation, megagrams.

$VOC_{(i)}$ = Monomer VOC content, by weight percent, of open molding resin or gel coat i used in the past 12 months in an operation.

n = Number of different open molding resins or gel coats used in the past 12 months in an operation.

5.2.2.5 Requirements for Emissions Averaging Option

5.2.2.5.1 In lieu of complying with the requirements of Section 5.2.2.4, an operator that is subject to Section 5.2.2.1 may comply by meeting a facility-specific monomer VOC mass emission limit (12-month rolling average) that is determined using Equation 2, provided all resins and gel coats included in this option do not exceed 5 percent by weight non-monomer VOC content.

5.2.2.5.2 At the end of the first 12-month averaging period and at the end of every subsequent month, the operator shall use Equation 3 to show that the monomer VOC emissions from the operations included in the average do not exceed the emission limit calculated using Equation 2 for the same 12-month period. The operator shall include in Equation 2 and Equation 3 the terms for only those operations and materials included in the average.

5.2.2.5.3 For those materials that are not included in the emissions average, the facility would resort to one of the other two options for limiting monomer and non-monomer VOC emissions from resin and gel coats.

Equation 2:

$$\text{Monomer VOC Limit} = 46(M_R) + 159\,(M_{PG}) + 291(M_{CG}) + 54(M_{TR}) + 214(M_{TG})$$

Where:

Monomer VOC Limit = Total allowable monomer VOC that can be emitted from open molding operations included in the average, kilograms per 12-month period.

M_R = Mass of production resin used in the past 12 months, excluding any materials that are exempt pursuant to Section 4.2, in megagrams.

M_{PG} = Mass of pigmented gel coat used in the past 12 months, excluding any materials that are exempt pursuant to Section 4.2, in megagrams.

M_{CG} = Mass of clear gel coat used in the past 12 months, excluding any materials that are exempt, in megagrams.

M_{TR} = Mass of tooling resin used in the past 12 months, excluding any materials that are exempt pursuant to Section 4.2, in megagrams.

M_{TG} = Mass of tooling gel coat used in the past 12 months, excluding any materials that are exempt pursuant to Section 4.2, in megagrams.

Equation 3:

Monomer VOC Emissions = $(PV_R)(M_R)+(PV_{PG})(M_{PG})+(PV_{CG})(M_{CG})+(PV_{TR})(M_{TR})+(PV_{TG})(M_{TG})$

Where:

Monomer VOC Emissions = Monomer VOC emissions calculated using the monomer VOC emission equations for each operation included in the average, in kilograms.

PV_R = Weighted-average monomer VOC emission rate for production resin used in the past 12 months, in kilograms per megagrams.

M_R = Mass of production resin used in the past 12 months, in megagrams.

PV_{PG} = Weighted-average monomer VOC emission rate for pigmented gel coat used in the past 12 months, in kilograms per megagrams.

M_{PG} = Mass of pigmented gel coat used in the past 12 months, in megagrams.

PV_{CG} = Weighted-average monomer VOC emission rate for clear gel coat used in the past 12 months, in kilograms per megagrams.

M_{CG} = Mass of clear gel coat used in the past 12 months, in megagrams

PV_{TR} = Weighted-average monomer VOC emission rate for tooling resin used in the past 12 months, in kilograms per megagrams.

M_{TR} = Mass of tooling resin used in the past 12 months, in megagrams.

PV_{TG} = Weighted-average monomer VOC emission rate for tooling gel coat used in the past 12 months, in kilograms per megagrams.

M_{TG} = Mass of tooling gel coat used in the past 12 months, in megagrams.

5.2.2.5.4 For purposes of Equation 3, the operator shall use Equation 4 to compute the weighted-average monomer VOC emission rate for the previous 12 months for each open molding resin and gel coat operation included in the average.

Equation 4:

$$PV_{OP} = \frac{\sum_{i=1}^{n}(Mi\ PVi)}{\sum_{i=1}^{n}(Mi)}$$

Where:

PV_{OP} = Weighted-average monomer VOC emission rate for each open molding operation (PV_R, PV_{PG}, PV_{CG}, PV_{TR}, and PV_{TG}) included in the average, kilograms of monomer VOC per megagram of material applied.

Mi = Mass of resin or gel coat i used within an operation in the past 12 months, in megagrams.

n = Number of different open molding resins and gel coats used with the operation in the past 12 months.

PVi = The monomer VOC emission rate for resin and gel coat i used within an operation in the past 12 months, in kilograms of monomer VOC per megagram of material applied. Use Table 3 to compute PVi.

Table 3 Monomer VOC Emission Rate Formulas for Open Molding for Fiberglass Boat Manufacturing Operation

Material	Application Method	Formula to calculate monomer VOC emission rate*
Production resin, Tooling resin	Atomized	$0.014 \times (\text{Resin VOC\%})^{2.425}$
	Atomized, plus vacuum bagging with roll-out	$0.01185 \times (\text{Resin VOC\%})^{2.425}$
	Atomized, plus vacuum bagging without roll-out	$0.009454 \times (\text{Resin VOC\%})^{2.425}$
	Non-atomized	$0.014 \times (\text{Resin VOC\%})^{2.275}$
	Non-atomized, plus vacuum bagging with roll-out	$0.0110 \times (\text{Resin VOC\%})^{2.275}$
	Non-atomized, plus vacuum bagging without roll-out	$0.0076 \times (\text{Resin VOC\%})^{2.275}$
Pigmented gel coat, clear gel coat, tooling gel coat	All methods	$0.445 \times (\text{Gel coat VOC\%})^{1.675}$

* The formulas in Table 3 calculate monomer VOC emissions in kilograms of monomer per megagram of resin or gel coat applied. The formulas for vacuum bagging with roll-out are applicable when a facility rolls out the applied resin and fabric prior to applying the vacuum bagging materials. The formulas for vacuum bagging without roll-out are applicable when a facility applies the vacuum bagging materials immediately after resin application without rolling the resin and fabric. VOC% = monomer VOC content as supplied, expressed as a weight-percent value between 0 and 100%.

5.2.2.6 Requirements for Add-on VOC Control System Option

5.2.2.6.1 In lieu of complying with the requirements of Compliant Materials Option in Section 5.2.2.4 or the requirements of Emissions Averaging Option in Section 5.2.2.5, an operator may choose to use an APCO-approved add-on control equipment to meet the emission limit determined by Equation 2 above. However, instead of using the mass of each material used over the past 12 months in Equation 2, the operator shall use the mass of each material used during control device performance source testing in Equation 2 to determine the emission limit (in kilograms of monomer VOC) that is applicable during the source testing. If the

measured emissions at the outlet of the control device (in kilogram of monomer VOC) are less than the emission limit, then the control device shall be considered to have achieved the emission limit, and provided the control device also meets the requirements of Sections 5.1.1.5.1 through 5.1.1.5.3.

5.2.2.6.2 All resins and gel coats used during add-on VOC controlled operations shall not exceed 5 percent by weight non-monomer VOC content limit.

5.2.2.6.3 The operator shall monitor and record relevant control device and capture system operating parameters such as temperature, pressure, and flow rate, and use the recorded values to establish operating limits for the emission control device and capture system, and maintain such parameters within the established operating limits.

5.2.2.7 Requirements for Filled Resins

5.2.2.7.1 An operator who uses resins to which fillers are added shall use Equation 5 to adjust the emission rate for filled resins under all three options specified in Section 5.2.2.4 through Section 5.2.2.6. If an operator uses a filled production resin or filled tooling resin, the operator shall calculate the emission rate for filled material on an as-applied basis using Equation 5.

5.2.2.7.2 All filled resins used shall not exceed 5 percent by weight non-monomer VOC content limit.

5.2.2.7.3 If the filled resin is used as a production resin, the value of PVF calculated by Equation 5 shall not exceed 46 kilograms of monomer VOC per megagram of filled resin applied.

5.2.2.7.4 If the filled resin is used as a tooling resin, the value of PVF calculated by Equation 5 shall not exceed 54 kilograms of monomer VOC per megagram of filled resin applied.

5.2.2.7.5 If the operator is including a filled resin in the emissions averaging option procedure, the operator shall use the value of PV_F calculated using Equation 5 for the value of PVi in Equation 4 of this rule.

Equation 5:

$$PV_F = PV_U \times [\frac{(100 - \%\,Filler)}{100}]$$

Where:

PV_F = The as-applied monomer VOC emission rate for the filled production resin or tooling resin, in kilograms monomer VOC per megagram of filled material.

PV_U = The monomer VOC emission rate for the neat (unfilled) resin, before filler is added, as calculated using the formulas in Table 3 of this rule.

% Filler = The weight percent of filler in the as-applied filled resin system.

5.2.2.8 Work Practice Standards for Resins and Gel Coat

An operator shall ensure that all containers with a capacity equal to or greater than 208 liters (55 gallons), including those used for on-site mixing of putties and polyputties, have a cover with no visible gaps in place at all times, except when material is being manually added or removed from a container, or when mixing or pumping equipment is being placed in or removed from a container.

5.3 Organic Solvent Cleaning Requirements

5.3.1 An operator shall not use organic solvents for cleaning operations that exceed the VOC content limits specified in Table 4, in accordance with the corresponding effective date.

Table 4 VOC Content Limits for Organic Solvents Used in Cleaning Operations	
Type of Solvent Cleaning Operation	VOC Content Limit Grams of VOC/liter of material (lb/gal)
A. Product Cleaning During Manufacturing Process or Surface Preparation for Coating Application	25 (0.21)
B. Repair and Maintenance Cleaning	25 (0.21)
C. Cleaning of Polyester Resin Application Equipment	25 (0.21)

5.3.2 In lieu of complying with the VOC content limits in Table 4, an operator may control VOC emissions from cleaning operations with an APCO-approved VOC emission control system that meets the requirements of Section 5.1.1.5 for the solvent cleaning operations.

5.4 Solvent Storage and Disposal

An owner or operator shall store or dispose of all uncured polyester resin materials, fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc., coatings, adhesives, catalysts, and thinners in self-closing, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

6.0 Administrative Requirements

6.1 Recordkeeping

An operator subject to this rule shall maintain the following records:

6.1.1 Daily records of the type and quantity of all resins, gel coats, fillers, catalysts, and cleaning materials (including cleaning solvents) used in each operation. Records shall also indicate the amount used and VOC content, in weight percent, of all polyester resin and gel coat materials used for touch up, repair, and small jobs.

6.1.2 Records of the VOC content, in weight percent, of all polyester resin and gel coat, filler materials, including the weight percent of non-monomer VOC content of the resin and gel coat, used or stored at the stationary source.

6.1.3 Records of the VOC content of all cleaning materials used and stored at the stationary source as specified in Section 5.3.

6.1.4 Records showing the weight loss per square meter during resin polymerization for each vapor-suppressed resin.

6.1.5 VOC Emission Control System Records

An operator using a VOC emission control system pursuant to Section 5.1.1.5 to comply with this rule shall maintain daily records of key system operating parameters to demonstrate continuous operation and compliance of the VOC emission control system during periods of emission-producing activities. Key system operating parameters are those parameters necessary to ensure compliance, including, but not limited to, temperature, pressure drop, and air flow rate.

6.1.6 An operator claiming exemption under Section 4.1 shall maintain records of polyester materials usage to support the claim of exemption.

6.1.7 The operator shall retain the records specified in Sections 6.1.1 through 6.1.6, as applicable, on site for a period of five years, make the records available on site during normal business hours to the APCO, ARB, or EPA, and submit the records to the APCO, ARB, or EPA upon request.

6.2 Test Methods

The analysis of cleaning materials, polyester resin materials and control efficiency shall be determined by the following methods:

6.2.1 The emission rate per square meter of exposed surface during polymerization of Polyester Resins is to be determined using: SCAQMD Method 309 (Static Method for Determination of Volatile Emissions from Polyester and Vinyl Resins Operations), Attachment A, 1/8/91.

6.2.2 Determination of Overall Capture and Control Efficiency of VOC Emission Control Systems

6.2.2.1 The capture efficiency of a VOC emission control system's collection device(s) shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Test Methods 204-204F, as applicable, or any other method approved by EPA, ARB, and the APCO.

6.2.2.2 The control efficiency of a VOC emission control system's VOC control device(s) shall be determined using EPA Test Methods 2, 2A, or 2D for measuring flow rates and EPA Test

Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device(s). EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.2.2.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{Capture\ and\ Control} = [\ CE_{Capture} \times CE_{Control}\ ] / 100$$

Where:

$CE_{Capture\ and\ Control}$ = Overall Capture and Control Efficiency, in percent

$CE_{Capture}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.2.2.1.

$CE_{Control}$ = Control Efficiency of the control device, in percent, as determined in Section 6.2.2.2.

6.2.3 The monomer content of uncatalyzed resin materials is to be determined using ASTM D2369-87 (Standard Test Method for Volatile Content of Coatings) or SCAQMD Test Method 312.

6.2.4 The VOC content of cleaning materials shall be determined using EPA Method 24 (40 CFR Part 60, Appendix A).

6.2.5 Determination of emissions of VOC from spray gun cleaning systems shall be made using SCAQMD "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," October 3, 1989.

6.2.6 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.

6.3 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.

RULE 4692 COMMERCIAL CHARBROILING (Adopted March 21, 2002; Amended September 17, 2009; Amended June 21, 2018)

1.0 Purpose

The purpose of this rule is to limit VOC and PM-10 emissions from commercial charbroiling.

2.0 Applicability

This rule applies to charbroilers used to cook meat at commercial cooking operations.

3.0 Definitions

3.1 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions)

3.2 Catalytic Oxidizer: 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.

3.3 Chain-driven Charbroiler: a semi-enclosed cooking device with a mechanical chain, which automatically moves food through the device.

3.4 Charbroiler: A cooking device composed of a grated grill and a heat source, where food resting on the grated grill cooks as the food receives direct heat from the heat source or a radiant surface.

3.5 Commercial Cooking Operations: any stationary facility that cooks food for human consumption and that engages in the retail sale, or offer for sale, of the cooked food. This includes, but is not limited to, restaurants, dinner houses, cafeterias, catering operations, and hotel or motel food service operations.

3.6 Meat: for the purposes of this rule, includes beef, lamb, pork, poultry, fish, and seafood.

3.7 Outdoor Operations: commercial cooking operations with under-fired charbroilers that are operated outdoors and which are not connected to an exhaust hood or other form of ventilation system.

3.8 PM-10: as defined in Rule 1020 (Definitions). For purposes of determining control efficiency, all particulate collected using the test method specified in Section 6.6 shall be considered PM-10.

3.9 Underfired charbroiler: a charbroiler, other than a chain-driven charbroiler, where the heat source and radiant surface, if any, are positioned at or below the level of the grated grill.

3.10 VOC: as defined in Rule 1020 (Definitions).

3.11 Weekly: a consecutive seven-day period.

4.0 Exemptions

4.1 Limited Use Exemption

4.1.1 A chain-driven charbroiler is exempt from the requirements of Section 5.0, provided:

4.1.1.1 It is not used to cook 400 pounds of meat or more in any calendar week, or

4.1.1.2 It is not used to cook more than 10,800 pounds in the most recent rolling 12-month period, and the amount of meat cooked every calendar week is less than 875 pounds, and the facility has not previously been required to comply with Section 5.0.

4.1.1.3 The claim of exemption is based on total quantity of meat cooked on each individual chain-driven charbroiler at the facility. To claim an exemption, operators must keep records in accordance with Section 6.1.

4.1.2 An underfired charbroiler shall not be subject to the requirements of Rule 4692, provided a one-time report, as specified in Section 5.2.1, is submitted to the District, and:

4.1.2.1 It is not used to cook 400 pounds of meat or more in any calendar week, or

4.1.2.2 It is not used to cook more than 10,800 pounds in any 12-month period and the amount of meat cooked every calendar week is less than 875 pounds.

4.2 Low-Emitting Units

4.2.1 The control requirements in Section 5.0 of this rule shall not apply to units that are shown, using the test method specified in Section 6.6, to emit less

than one pound per day of any criteria air pollutant. Applicable recordkeeping requirements of Section 6.1 shall apply.

4.2.2 The test results shall be used to determine the maximum amount of meat which can be cooked and still be exempt from control requirements.

4.2.3 Operators claiming this exemption shall provide adequate demonstration of emissions using the test method in Section 6.6 and keep records in accordance with applicable provisions of Section 6.1.

4.3 Outdoor operations shall not be subject to the requirements of this rule.

5.0 Requirements

5.1 Chain-Driven Charbroilers

5.1.1 No person shall operate a chain-driven charbroiler unless the chain-driven charbroiler is equipped and operated with a catalytic oxidizer. The catalytic oxidizer shall have a control efficiency of at least 83% for PM-10 emissions and a control efficiency of at least 86% for VOC emissions. Chain-driven charbroiler/catalytic oxidizers combinations certified by SCAQMD shall be deemed compliant for the purposes of this section.

5.1.2 Alternative control devices or methods may be used, if it is demonstrated that the alternative control device or alternative control method has a control efficiency of at least 83% for PM-10 emissions and a control efficiency of at least 86% for VOC emissions.

5.1.3 Control Device Maintenance

Control devices, including catalytic oxidizers, 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 control device or charbroiler.

5.2 Underfired Charbroilers

5.2.1 No later than January 1, 2019, the owner or operator of an underfired charbroiling operation shall submit a one-time report that includes the following information:

5.2.1.1 Name and location of the commercial cooking operation;
5.2.1.2 Number and size, in cooking surface square feet, of all

underfired charbroilers at the commercial cooking operation;

5.2.1.3 Type of fuel used to heat the underfired charbroiler(s);

5.2.1.4 Type and quantity, in pounds, of meat cooked on the underfired charbroiler(s) on a weekly basis for the previous 12-month period;

5.2.1.5 Daily operating hours of the commercial cooking operation;

5.2.1.6 Flowrate (cubic feet per minute) of hood or exhaust system(s) serving each underfired charbroiler; and

5.2.1.7 The manufacturer and model of any installed pollution control devices designed for the reduction of particulates, kitchen smoke and/or odor.

5.2.2 Underfired Charbroiler Registration Requirements

The owner of an underfired charbroiler subject to this rule shall register such underfired charbroiler pursuant to Rule 2250 (Permit-Exempt Equipment Registration), in lieu of permitting under the requirements of Rule 2010 (Permits Required).

6.0 Administrative Requirements

6.1 Records for Exempt Units

6.1.1 A chain-driven charbroiler owner or operator, claiming an exemption under Section 4.1, shall keep weekly records the total quantity, in pounds, of meat cooked on each chain-driven charbroiler on the premises.

6.1.2 A chain-driven charbroiler owner or operator claiming an exemption under Section 4.2 shall keep the following records:

6.1.2.1 The test results used to determine the maximum amount of meat which can be cooked on each charbroiler and still be exempt from control requirements; and

6.1.2.2 On a weekly basis, the total quantity, in pounds, of meat cooked on each charbroiler on the premises.

6.1.3 The applicable records required in Section 6.1.1 and Section 6.1.2 shall be retained on the premises for a period of not less than five years and made available to the District upon request.

6.2 Records for Chain-Driven Charbroilers Subject to Control Requirements

6.2.1 The owner or operator of a chain-driven charbroiler subject to the control requirements of Section 5.0 shall keep weekly records of the total quantity, in pounds, of meat cooked on each chain-driven charbroiler on the premises.

6.2.2 The records required in Section 6.2.1 shall be retained on the premises for a period of not less than five years and made available to the District upon request.

6.3 Records for Underfired Charbroilers Subject to Rule 4692 Requirements

6.3.1 The owner or operator shall keep weekly records of the total quantity, in pounds, for each type of meat cooked on each charbroiler on the premises.

6.3.2 The records required in Section 6.3.1 shall be retained on the premises for a period of not less than five years and made available to the District upon request.

6.4 Alternative Recordkeeping

Owners and operators may request an alternative record keeping method, provided the APCO and EPA have determined, in writing, that the alternative recordkeeping method provides equivalent compliance assurance as the records specified in applicable provisions of Sections 6.1 or 6.2.

6.5 Certification of Control Devices for Chain-Driven Charbroilers

6.5.1 A chain-driven charbroiler/catalytic oxidizer combination certified by SCAQMD shall be deemed certified for the purpose of this section.

6.5.2 For District certification, the operator shall submit sufficient information to assure that the chain-driven charbroiler and control device combination is adequately designed to meet the minimum emission control efficiency of Section 6.7.

6.5.3 In order for a control device manufacturer to obtain District certification, the manufacturer shall:

6.5.3.1 Obtain confirmation from an independent testing laboratory that the chain-driven charbroiler and control device combination has been tested in accordance with the applicable procedure in Section 6.6; and

6.5.3.2 Demonstrate that the emission control efficiency of the chain-driven charbroiler and control device combination meets the applicable emission control efficiency of Section 6.7; and

6.5.3.3 Obtain a written certification, for the chain-driven charbroiler and control device combination from the APCO, in accordance with Section 6.8.

6.6 Test Methods

6.6.1 Determination of Emissions from Chain-Driven Charbroilers with Catalytic Oxidizers (SCAQMD Method)

The South Coast Air Quality Management District's Protocol – "Determination of Particulate and Volatile Organic Compound Emissions from Restaurant Operations," shall be used to determine the control efficiency of the control device.

6.6.2 Criteria Pollutant

ARB Test Method 100 shall be used to determine criteria pollutant emissions.

6.6.3 Alternative Test Methods

An owner or operator may use an alternative test method for which written approval of the EPA and the APCO has been obtained.

6.6.4 Calculation for Control Efficiency

The control system efficiency shall be calculated using the following equation:

$$\% \text{ Control Efficiency} = [(W_{PM\text{-}10,\ inlet} - W_{PM\text{-}10,\ outlet}) / W_{PM\text{-}10,\ inlet}] \times 100$$

Where:

$W_{PM\text{-}10,\ inlet}$ = weight of PM-10 at the inlet side of the emission control system, in mg

$W_{PM\text{-}10,\ outlet}$ = weight of PM-10 at the outlet side of the emission control system, in mg

6.7 Chain-Driven Charbroiler Control Technology Emission Control Efficiency Limits for Certification

When tested in accordance with Section 6.6, a control device shall have a control efficiency of at least 83% with respect to PM-10 emissions; and at least 86% with respect to VOC emissions.

6.8 Certification Procedure

6.8.1 Each manufacturer who requests certification of their compliant control equipment, shall submit an application to the APCO. The application shall:

6.8.1.1 Provide the following general information:

6.8.1.1.1 Name and address of manufacturer;

6.8.1.1.2 Brand name, trade name, model number;

6.8.1.1.3 Any accoutrements installed to enhance or support the operation of the control equipment; and

6.8.1.1.4 Operation conditions, including the maximum air flow rate;

6.8.1.2 Provide a description of the model being certified;

6.8.1.3 Include a complete certification source test report demonstrating that the control equipment was tested in accordance with procedure in Section 6.6;

6.8.1.4 Include a written statement that the model complies with the emission rate limit and citing the applicable emission rate limit; and

6.8.1.5 Be submitted to the District no more than 90 days after the date of the emissions compliance test conducted in accordance with Section 6.6.

6.8.2 The manufacturer may submit, to the APCO, an approved SCAQMD certification in lieu of conducting duplicative certification tests.

6.8.3 The APCO will approve or deny the request for certification after completing review of the application for certification and source test report.

RULE 4693 BAKERY OVENS (Adopted May 16, 2002)

1.0 Purpose

The purpose of this rule is to limit volatile organic compound (VOC) emissions from bakery ovens.

2.0 Applicability

The requirements of this rule shall apply to bakery ovens operated at major source facilities, which emit VOCs during the baking of yeast-leavened products.

3.0 Definitions

3.1 Bakery Oven: an enclosed compartment supplied with heat, typically from the combustion of natural gas, used to bake bread, buns and rolls. This does not include proofing boxes.

3.2 Existing Oven: an oven that was constructed and commenced operation prior to July 1, 2002.

3.3 Fermentation Time: an elapsed time between adding yeast to the dough or sponge and placing it into the oven, excluding retardation time, expressed in hours.

3.4 Leaven: a rise in the dough caused by the permeation of gas through the use of a chemical agent such as baking powder or a fermentation-producing agent such as yeast.

3.5 Major Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.6 Proofing Box: A warm, typically 100^{o}F, humid chamber where yeast-leavened dough is allowed to rise to the volume desired for baking.

3.7 Retardation Time: any portion of the elapsed time between adding yeast to dough or sponge and placing the dough or sponge into a bakery oven, where the dough or sponge is refrigerated at temperatures of less then 10 degrees Celsius, for the specific purpose of retarding the fermentation process.

3.8 Uncontrolled VOC Emissions: any VOC emissions released from a bakery oven, before application of add-on air pollution control equipment or process modification.

3.9 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.10 Yeast Percentage: a ratio of the pounds of yeast per hundred pounds of total recipe flour.

4.0 Exemptions

The provisions of this rule shall not apply to equipment used exclusively for the baking of bakery products leavened chemically in the absence of yeast.

5.0 Requirements

No person shall operate a new or existing bakery oven unless the following standards are met:

5.1 Emissions from all oven stacks are vented to an emission collection system.

5.2 The collected emissions are vented to an approved emission control device, which has a control efficiency of at least 95 percent as determined by the test method in Section 6.2.

6.0 Administrative Requirements

6.1 Recordkeeping:

6.1.1 Any person operating a bakery oven subject to this rule shall maintain a daily record of operations, including, but not limited to:

6.1.1.1 the amount of raw material processed for total recipe,

6.1.1.2 yeast percentage,

6.1.1.3 fermentation time, and

6.1.1.4 the type of product baked.

6.1.2 For those ovens subject to the control requirements in Section 5.0, daily records shall also be maintained of the following key operating parameters of control device:

6.1.2.1 temperature,

6.1.2.2 operating pressure of the oven,

6.1.2.3 the product flow rate, and

6.1.2.4 inspection schedules and anticipated ongoing maintenance regarding the key operating parameters.

6.1.3 Effective and beginning on or after May 16, 2002, records shall be

maintained for a minimum of five years and made available for inspection to the APCO upon request.

6.2 Test Methods

6.2.1 Testing the control efficiency of the control device shall be done using USEPA Test Methods 18 or an equivalent test method may be used provided it has been approved by the USEPA, CARB, and the APCO.

6.2.2 All test methods referenced in this Section shall constitute the most recent approved version.

7.0 Compliance Schedule

No person shall operate a bakery oven subject to this rule unless the following increments of progress are met:

7.1 For existing bakery ovens:

7.1.1 By December 2, 2002, submit required applications for permits to operate the control device.

7.1.2 By June 2, 2003, demonstrate compliance with the requirements in Section 5.0.

7.2 For new facilities installing new bakery ovens commencing operations on and after July 1, 2002, be in compliance by December 2, 2002 or by the date of installation, whichever is later.

7.3 Alternate Compliance Schedule

For existing facilities with existing oven, sections 7.1.1 and 7.1.2 compliance dates may be postponed by one year if the owner of a bakery oven elects to replace the existing oven with a new oven. Such an election must be made by December 2, 2002 and be in full compliance by December 2, 2003. In approving such an election, the APCO 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.

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RULE 4694 WINE FERMENTATION AND STORAGE TANKS (Adopted December 15, 2005)

1.0 Purpose

The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) from the ~~fermentation and~~ bulk storage of wine~~, or achieve equivalent reductions from alternative emission sources~~.

2.0 Applicability

This rule applies to any winery ~~fermenting wine and/or~~ storing wine in bulk containers.

3.0 Definitions

3.1 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.2 Air Resources Board (ARB or CARB) as defined in Rule 1020 (Definitions).

~~3.3 Baseline Fermentation Emissions (BFE): the average Uncontrolled Fermentation Emissions from wine fermentation, occurring at the winery during a given Baseline Period pursuant to Section 3.4, or as established by the Operator pursuant to section 3.3.3. For wineries with less than three consecutive years of fermentation activities, the baseline shall be established pursuant to Section 3.3.2 or Section 3.3.3.~~

~~3.3.1 The BFE shall be calculated as follows:~~

$$\text{BFE} = \frac{\sum \text{UFE}}{\text{CY}}$$

~~Where,~~

~~*BFE* = Baseline Fermentation Emissions~~

~~$\sum$*UFE* = The sum of annual Uncontrolled Fermentation Emissions for a given Baseline Period~~

~~*CY* = The number of consecutive years used to establish the BFE for a given Baseline Period~~

~~3.3.2 If the winery does not have three consecutive years of fermentation data, CY shall equal the number of consecutive years of available fermentation data.~~

3.3.3 Operators may voluntarily establish their BFE provided that the BFE shall not be less than the BFE calculated pursuant to Section 3.3.1, and that the BFE shall not be greater than the operator's Potential to Emit for fermentation VOC emissions

3.4 Baseline Period: the three consecutive calendar years, immediately before the year of calculation of the Baseline Fermentation Emissions.

3.5 Batch: a quantity of must fermented at the same time in a fermenter.

3.6 Brix: the sugar content of grapes, juice, or wine. Each degree Brix is equivalent to 1 gram of sugar per 100 grams of grape juice.

3.7 Capture System: equipment, including but not limited to, hoods, ducts, fans, booths, and vents which are used to contain, capture, or transport an air pollutant to an emissions control device.

3.8 Certified Emissions Reductions (CER): the reduction of VOC or NOx emissions, from mobile, stationary, or area sources, which are actual, quantifiable, enforceable, and surplus at the time of use, as determined by the APCO.

3.9 Combined Capture and Control Efficiency (CCCE): the percent reduction in emissions achieved by an emissions control system. CCCE shall be calculated as follows:

$$CCCE = \%CSE \times \%CDE$$

Where,

CCCE = Combined Capture and Control Efficiency

%CSE = Capture System Efficiency, as established in the Permit To Operate

%CDE = Control Device Efficiency as established in the Permit To Operate

3.10 Compliance Period: the three consecutive calendar years immediately following the year of calculation of the Baseline Fermentation Emissions.

3.11 Continuous or Adjacent Property: a property consisting of two or more parcels of land with a common point or boundary, or separated solely by a public roadway or other public right-of-way.

~~3.12 Control Device: equipment that is used to reduce the amount of air pollutants in an exhaust stream before discharge to the ambient air.~~

~~3.13 Emission Control System: a system consisting of a capture system and control device.~~

~~3.14 Emission Reduction Duration: the period of time during which the action generating an emission reduction results in Certified Emission Reductions.~~

~~3.15 Fermentation: the action of yeast upon sugar to produce ethyl alcohol. Fermentation begins within a given fermenter when an operator inoculates the must with yeast or when the operator allows fermentation to begin naturally. Fermentation ends when the operator stops fermentation, when fermentation stops naturally, or when the fermenting juice reaches a sugar content of 4 degrees Brix, or less.~~

~~3.16 Fermentation Emission Reduction (FER): the reduction in VOC emissions from the total volume of must fermented in tanks equipped and operated with an emissions control system. FER shall be calculated as follows:~~

$$FER = \frac{(Q \times EF)}{1{,}000\ gal} \times \frac{1\ ton}{2{,}000\ lb} \times CCCE$$

~~Where,~~

~~*FER* = Fermentation Emission Reduction~~

~~*Q* = Volume of must, in gallons, fermented into red wine or white wine in the controlled tank~~

~~*EF* = Emissions Factor for the type of wine being fermented in the controlled tank. EF equals 6.2 lb for red wine, and 2.5 lb for white wine~~

~~*CCCE* = Combined Capture and Control Efficiency of the VOC emissions control system~~

~~3.17 Fermenter: any tank used to ferment must into wine.~~

3.18 Gas Leak: a reading in excess of 1,000 ppmv, above background, measured on a portable hydrocarbon detection instrument that is calibrated with methane.

3.19 Gas-Tight: a condition without a gas leak.

~~3.20 Higher Heating Value (hhv): the total heat liberated per mass of fuel burned (Btu per pound), when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to the standard states at standard conditions.~~

3.21 Must: any unfermented juice or mixture of juice, pulp, skins, and seeds prepared from grapes or other fruit. Must fermented to produce white wines is considered to be juice. Must fermented to produce red wines is considered to be a mixture of juice and solids, such as pulp, skins, and seeds.

3.22 Operator: includes but is not limited to any person who leases, supervises, or operates equipment, in addition to the normal meaning of ownership.

~~3.23 Potential To Emit: as defined in District Rule 2201 (New and Modified Stationary Source Review Rule).~~

~~3.24 Red Wine: any wine produced by a process that separates the wine from the must solids (skins, pulp, seeds) after fermentation begins.~~

~~3.25 Required Annual Emissions Reductions (RAER): the sum of all emission reductions rounded to the nearest 0.1 ton, achieved by the operator during the calendar year. Required Annual Emissions Reductions shall be calculated as follows:~~

$$RAER = \sum FER + \sum CER + \sum DOER$$

~~Where,~~

~~*RAER* = Required Annual Emissions Reductions~~

~~$\sum FER$ = Sum of all Fermentation Emission Reductions from controlled wine fermenters in operation at the winery during the calendar year~~

~~$\sum CER$ = Sum of all Certified Emission Reductions obtained by the operator during the calendar year~~

~~$\sum DOER$ = Sum of all District Obtained Emission Reductions achieved through payment of Air Quality Impact Mitigation Fees for the calendar year~~

~~3.26 Stationary Source: as defined in District Rule 2201 (New and Modified Stationary Source Review Rule).~~

3.27 Storage Tank: any container having an internal volume greater than 250 gallons, used to hold wine.

~~3.28 Surplus: emission reductions which have not been relied upon or required by any local, state, or federal permit, rule, regulation, law, ordinance, or approved air quality plan.~~

3.29 Tank: any vessel, with a volume greater than 250 gallons, used ~~as a fermenter or~~ as a storage tank.

~~3.30 Time Of Use: the date on which an emission reduction is received by the District in a winery's Three year Compliance Plan pursuant to Section 6.1, or Annual Compliance Demonstration pursuant to Section 6.3.~~

~~3.31 Uncontrolled Fermentation Emissions (UFE): the VOC emissions that occur in a calendar year from the fermentation of must before emission mitigation or use of an emissions control system. Uncontrolled Fermentation Emissions shall be calculated as follows:~~

$$\text{UFE} = \frac{(Q_{red}\ \text{gal/yr} \times 6.2\ \text{lb}) + (Q_{white}\ \text{gal/yr} \times 2.5\ \text{lb})}{1{,}000\ \text{gal}} \times \frac{1\ \text{ton}}{2{,}000\ \text{lb}}$$

~~Where,~~

~~*UFE* = Uncontrolled Fermentation Emissions~~

~~Q_{red} = Total gallons of must fermented to produce red wine during the calendar year~~

~~Q_{white} = Total gallons of must fermented to produce white wine during the calendar year~~

~~3.32 US EPA: the United States Environmental Protection Agency.~~

3.33 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

~~3.34 White Wine: any wine produced by a process that separates the juice from the must solids (skins, pulp, seeds) before fermentation begins.~~

3.35 Wine: the liquid product obtained from fermented must.

3.36 Winery: a facility used to produce and/or store wine.

~~3.37 Winery Premises: a property that is contiguous to or adjacent to the winery, and that is under the ownership and control of the winery operator.~~

4.0 Exemptions

~~4.1 Except for recordkeeping requirements specified in Section 6.4.4, this rule shall not apply to any winery which has a BFE of less than 10 tons per year, or is limited by a District permit condition to a Potential To Emit of less than 10 tons VOC emissions from fermentation.~~

4.2 Section 5.2 shall not apply to storage tanks constructed primarily of concrete or wood.

5.0 Requirements

~~5.1 Fermentation Tanks~~

~~Operators of any winery shall achieve Required Annual Emissions Reductions (RAER) equal to at least 35% of the winery's Baseline Fermentation Emissions (BFE).~~

5.2 Storage Tanks

Operators of any wine storage tank having an internal volume equal to or greater than 5,000 gallons shall comply with all of the following requirements when storing wine:

5.2.1 The tank shall be equipped and operated with a pressure-vacuum relief valve meeting all of the following requirements:

5.2.1.1 The pressure-vacuum relief valve shall operate within 10% of the maximum allowable working pressure of the tank,

5.2.1.2 The pressure-vacuum relief valve shall operate in accordance with the manufacturer's instructions, and

5.2.1.3 The pressure-vacuum relief valve shall be permanently labeled with the operating pressure settings.

5.2.1.4 The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21.

5.2.2 The temperature of the stored wine shall be maintained at or below 75° Fahrenheit.

5.2.2.1 Temperature of the stored wine shall be determined and recorded at least once per week.

5.2.2.2 For each batch of wine, operators shall achieve the storage temperature of 75°F or less within 60 days after completing fermentation.

6.0 Administrative Requirements

~~6.1 Three-year Compliance Plan~~

~~By no later than December 1, 2006, and every three years thereafter, each winery operator subject to the requirements of Section 5.1 shall submit to the District, a Three-Year Compliance Plan that demonstrates compliance with the applicable requirements of this rule for each year of the applicable compliance period. The Three-year Compliance Plan shall include the following information:~~

~~6.1.1 Name and address of the winery.~~

~~6.1.2 Name, title, and contact information for the operator and the operator's signature certifying the accuracy of all information presented in the Three-Year Compliance Plan.~~

~~6.1.3 Calculation of the BFE, and the volumes of red wine and white wine fermented at the winery for each year of the Baseline Period. For the Three-Year Compliance Plan due December 1, 2006, the Baseline Period shall be the years 2003, 2004, and 2005.~~

~~6.1.4 Calculation of the RAER to be achieved for each year covered by the Three-year Compliance Plan. For the Three-Year Compliance Plan due pursuant to section 6.1, the compliance period shall be for the three-year period following the Plan submittal due date.~~

~~6.1.5 Demonstration of how the operator will achieve the RAER necessary to satisfy Section 5.1, using any combination of the following compliance options:~~

~~6.1.5.1 Fermentation Emission Reduction (FER): Reductions of VOC emissions from wine fermentation. For each FER~~

source the Three-Year Compliance Plan shall include the following information:

6.1.5.1.1 Calculation of FER for each controlled fermentation tank, identified by a Permit To Operate number. FER shall be calculated for the annual throughput of each controlled fermenter using the following:

$$FER = \frac{(Q \times EF)}{1{,}000\ gal} \times \frac{1\ ton}{2{,}000\ lb} \times CCCE$$

Where,

FER = Fermentation Emission Reduction

Q = Volume of must, in gallons, fermented into red wine or white wine in the controlled tank

EF = Emissions Factor for the type of wine being fermented in the controlled tank. EF equals 6.2 lb for red wine, and 2.5 lb for white wine

CCCE = Combined Capture and Control Efficiency of the VOC emissions control system

6.1.5.1.2 Reductions in annual emissions from wine fermentation resulting from changes in production volumes shall not be considered FER or result in CER.

6.1.5.2 Certified Emission Reductions (CER): Reductions in surplus emissions from mobile, area, or stationary sources.

6.1.5.2.1 CER shall have an emissions reduction duration equal to the approved life of the emission reduction activity, provided that the CER is continuously committed to the District within any operator's Three-year Compliance Plan and the CER is achieved consistent with the plan.

~~6.1.5.2.2 An emission reduction activity that loses CER status, for any reason, may be resubmitted to the District for re-approval. The emission reduction will be evaluated at the time of use, without consideration of previous CER status.~~

~~6.1.5.2.3 For each CER source the Three-Year Compliance Plan shall include the following information:~~

~~6.1.5.2.3.1 Details of the CER to be controlled, including: starting date and duration of the CER; emissions reductions to be achieved per unit of activity; technical information demonstrating that the emissions reduction meets the definition of CER; and a plan for monitoring all emissions reductions.~~

~~6.1.5.2.3.2 The Permit To Operate number for permitted sources of CER. The CER shall be made enforceable as one or more permit conditions that establish the emission unit's daily emissions limitation.~~

~~6.1.5.2.3.3 A legally binding contract for non-permitted sources of CER. This rule is part of the San Joaquin Valley portion of the California State Implementation Plan. Each contract entered into pursuant to this rule shall be federally enforceable under Section 304 of the Federal Clean Air Act, 42 U.S.C. 7604. The CER shall be made enforceable by a legally binding contract between the operator of the winery, the operator of the emissions source, and the District. All contracts~~

executed to comply with the provisions of this rule shall contain adequate monitoring, recordkeeping, and reporting requirements to demonstrate that the required emissions reduction and the applicable performance standards are achieved during the Emission Reduction Duration.

6.1.5.2.3.4 If the emission source operates exclusively on the Winery Premises during the compliance period, the CER shall be offset at a ratio of 1.0 ton CER per 1.0 ton of fermentation VOC emissions.

6.1.5.2.3.5 If the emission source is not operated exclusively on the Winery Premises during the compliance period, the CER shall be offset at a ratio of 1.2 ton CER per 1.0 ton of fermentation VOC emissions.

6.1.5.3 District Obtained Emissions Reductions (DOER) obtained by payments to the District Air Quality Impact Mitigation Fund (AQIMF) for a Three-Year Compliance Plan shall include the following information:

6.1.5.3.1 The amount of requested DOER. DOER shall be calculated as follows:

$$DOER = RAER - \sum CER - \sum FER$$

Where,

DOER = The amount of District Obtained Emission Reductions.

RAER = 35% of the operator's Baseline Fermentation Emissions.

~~ΣCER = Sum of all CER to be obtained by the operator.~~

~~ΣFER = Sum of all FER to be achieved by the operator.~~

~~6.1.5.3.2 The payment amount for DOER shall be an amount sufficient to cover the District's costs of obtaining emission reductions having an Emission Reduction Duration (ERD) of three years in aggregate, plus an administrative fee.~~

~~6.1.5.3.3 Payment shall calculated as follows:~~

~~$AQIMF = DOER \times FR \times AF$~~

~~Where,~~

~~*AQIMF* = Air Quality Impact Mitigation Fund payment.~~

~~*DOER* = District Obtained Emissions Reductions.~~

~~*FR* = Fund Rate. As of January 1, 2006, the Fund Rate is established at $11,778 per ton.~~

~~*AF* = District's administrative fee. As of January 1, 2006, the administrated fee is established at 1.04.~~

~~6.1.5.3.4 Beginning January 1, 2007, the Fund Rate and the administrative fee shall be established by the APCO in accordance with Section 6.5.~~

~~6.1.5.3.5 Payment of DOER and administrative fees shall be made to the District no later than March 1, of the first year in the applicable compliance period. For the Three-Year Compliance Plan due December 1, 2006, the payment of DOER and administrative fees shall be made no later than March 1, 2007.~~

6.1.6 Emission reductions achieved in excess to RAER may not be banked or credited for use to satisfy RAER requirements in any year other than the year of their generation.

6.1.7 New Source Review Emission Reduction Credits are not eligible for use to satisfy RAER requirements.

6.1.8 For fermentation tanks subject to emission controls from New Source Review requirements, the maximum allowable FER shall be the lesser of either the actual emission reduction generated by the NSR review control, or 35% of the uncontrolled emissions.

6.2 Three-Year Compliance Plan Verification

By no later than July 1, 2007, and every three years thereafter, winery operators shall submit to the District a Three-Year Compliance Plan Verification that demonstrates that the Three-Year Compliance Plan elements are in effect. The Compliance Plan Verification shall include the following information:

6.2.1 Name and address of the winery.

6.2.2 Name, title, and contact information for the operator, and the operator's signature certifying the accuracy of all submitted information.

6.2.3 Certification that the required control equipment to generate FER are installed and operating consistent with their Permit To Operate conditions.

6.2.4 Certification stating that the required emissions reduction commitments to generate CER have been implemented.

6.2.5 Certification that AQIMF payments to obtain DOER have been made.

6.3 Annual Compliance Plan Demonstration

By no later than February 1, 2008, and every year thereafter, each winery operator shall submit to the District an Annual Compliance Plan Demonstration that shows compliance with the applicable requirements of this rule. The Compliance Plan Demonstration shall include the following information:

6.3.1 Name and address of the winery.

~~6.3.2 Name, title, and contact information for the operator, and the operator's signature certifying the accuracy of all information presented in the Three-Year Compliance Plan.~~

~~6.3.3 Calculation of the Uncontrolled Fermentation Emissions (UFE) for the prior calendar year.~~

~~6.3.4 Certification that all CER commitments were met and calculations of the resulting emission reductions.~~

~~6.3.5 Certification that all FER controls were installed and operated, and calculations of the resulting emission reductions.~~

~~6.3.6 If the UFE is less than or equal to the BFE, the operator shall demonstrate that the RAER is greater than or equal to 35% of the BFE indicated in the Three-Year Compliance Plan, for the year covered by the demonstration.~~

~~6.3.7 If the UFE is greater than the BFE, the operator shall demonstrate that the RAER is greater than or equal to 35% of the UFE for the year covered by the demonstration. If the RAER are less than 35% of the UFE the operator shall identify how they will obtain additional RAER sufficient to satisfy this section.~~

~~6.3.7.1 Additional RAER may be obtained from any source of FER, CER or DOER.~~

~~6.3.7.2 All additional RAER shall be obtained by April 1 of the year of the Annual Compliance Demonstration.~~

6.4 Monitoring and Recordkeeping

Commencing January 1, 2007, the following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO upon request:

~~6.4.1 For each fermentation batch, operators shall record the following information by Permit To Operate number and by wine type, stated as either red wine or white wine:~~

~~6.4.1.1 Total gallons of must fermented,~~

~~6.4.1.2 Uncontrolled Fermentation Emissions, and~~

~~6.4.1.3 Fermentation Emission Reductions.~~

6.4.2 For each storage tank, operators shall record the following information on a weekly basis:

6.4.2.1 Total gallons of wine contained in the tank, and

6.4.2.2 Maximum temperature of the stored wine.

~~6.4.3 Operators using CER to mitigate fermentation emissions shall perform all monitoring and recordkeeping, as established in their approved Three-Year Compliance Plan, and shall maintain all records necessary to demonstrate compliance.~~

~~6.4.4 Operators claiming exemption pursuant to Section 4.0 shall maintain annual records of the total gallons of red wine and the total gallons of white wine fermented at the winery, and total gallons of wine in storage tanks. Records submitted to the United States Department of Treasury – Alcohol and Tobacco Tax and Trade Bureau for the purpose of tax determination shall be adequate, provided the operator indicates the volumes of red and white wines fermented.~~

~~6.5 Air Quality Impact Mitigation Fund Fees Review~~

~~The District shall review the AQIMF and administrative fees on an annual basis to determine their appropriateness and to establish fee levels that are not less than the District's cost to obtain emission reductions and administer the program. The APCO may adjust the cost of reductions according to the following process:~~

~~6.5.1 An analysis shall be performed that details:~~

~~6.5.1.1 The cost effectiveness of projects funded to date;~~

~~6.5.1.2 The rule effectiveness of achieving the required emission reductions to date; and~~

~~6.5.1.3 The availability of off-site emission reduction projects.~~

~~6.5.2 The APCO shall provide a draft revised cost effectiveness based on the analysis.~~

~~6.5.3 The process shall included at least one public workshop.~~

~~6.6 Test Methods~~

~~6.6.1 Operators of an emission unit identified in a District prohibitory rule shall comply with the test methods specified in the applicable District prohibitory rule.~~

~~6.6.2 Operators of an emission unit not identified in a District prohibitory rule shall use the following test methods to quantify emission reductions. Alternative test methods may be used provided they are approved by the APCO, ARB, and US EPA.~~

~~6.6.2.1 VOC Control~~

~~6.6.2.1.1 The control efficiency of any VOC destruction device, measured and calculated as carbon, shall be determined by US EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case US EPA Method 25a may be used.~~

~~6.6.2.1.2 US EPA Method 18 may be used in lieu of US EPA Method 25 or US EPA Method 25A provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of the known analytes/compounds to ensure that the VOC concentrations are neither under- or over-reported.~~

~~6.6.2.2 NOx Control~~

~~6.6.2.2.1 Fuel hhv shall be certified by a third party fuel supplier or determined by:~~

~~6.6.2.2.1.1 ASTM D 240-87 or D 2382-88 for liquid hydrocarbon fuels;~~

~~6.6.2.2.1.2 ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels.~~

~~6.6.2.3 Oxides of nitrogen (ppmv) US EPA Method 7E, or ARB Method 100.~~

~~6.6.2.4 Carbon monoxide (ppmv) – US EPA Method 10, or ARB Method 100.~~

~~6.6.2.5 Stack gas oxygen – US EPA Method 3 or 3A, or ARB Method 100.~~

~~6.6.2.6 NOx Emission Rate (Heat Input Basis) – US EPA Method 19.~~

~~6.6.2.7 Stack gas velocities – US EPA Method 2.~~

~~6.6.2.8 Stack gas moisture content – US EPA Method 4.~~

~~6.7 Compliance Testing~~

~~Operators of an emission unit identified in a District prohibitory rule shall comply with the compliance test methods specified in the applicable District prohibitory rule. Operators of an emission unit not identified in a District prohibitory rule shall comply with compliance test requirements approved by the APCO, ARB, and US EPA.~~

7.0 Compliance Schedule

Operators shall comply with the applicable requirements of this rule by the dates indicated in Table 1 Rule Compliance Schedule.

Table1 Rule Compliance Schedule

Initial Compliance Date	**Subsequent Compliance Dates**	**Requirement**	**Reference**
December 1, 2006	Every three years	Submit Three-year Compliance Plan to District	Section 6.1
January 1, 2007	Continuously, as appropriate	Commencing monitoring and recordkeeping	Section 6.4
March 1, 2007	Every three years	Submit AQIMF & Administrative fees for DOER pursuant to the Three-Year Compliance Plan	Section 6.1.5.3.4
July 1, 2007	Every three years	Submit Three-year Compliance Plan Verification	Section 6.2
March 1, 2008	Annually	Submit Annual Compliance Plan Demonstration	Section 6.3
May 1, 2008	Annually, as appropriate	Provide additional RAER, as required	Section 6.3.5.2

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RULE 4695 BRANDY AGING AND WINE AGING OPERATIONS (Adopted September 17, 2009)

1.0 Purpose

The purpose of this rule is to limit volatile organic compound (VOC) emissions from brandy aging and wine aging operations.

2.0 Applicability

This rule shall apply to brandy aging and wine aging operations.

3.0 Definitions

3.1 Aging: for the purpose of this rule, to keep, in a non-temporary or transient manner, brandy or wine in containers with the objective of acquiring desirable characteristics from contact with wood.

3.2 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.3 Air Resources Board (ARB or CARB): as defined in Rule 1020 (Definitions).

3.4 Best Available Retrofit Control Technology (BARCT): as defined in the California Health and Safety Code "an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source." BARCT requirements are generally more stringent than RACT requirements.

3.5 Brandy: an alcoholic beverage made from distilled wine or fermented fruit juice, usually 40-60% ethyl alcohol by volume.

3.6 Capture System: equipment, including but not limited to, hoods, ducts, fans, booths, and vents which are used to contain, capture, or transport an air pollutant to an emissions control device.

3.7 Combined Capture and Control Efficiency (CCCE): the total percent reduction in emissions, achieved by an emissions control system.

3.8 Control Device: equipment that is used to reduce the amount of air pollutants in an exhaust stream before discharge to the ambient air.

3.9 Emission Control System: a system consisting of a capture system and control device.

3.10 Environmental Protection Agency (EPA): the United States Environmental Protection Agency.

3.11 Fan Inlet Pressure Control Point: the pressure monitor point for controlling the induced draft fan for purposes of maintaining negative pressure on the warehouse adequate to ensure the warehouse meets the criteria of a Permanent Total Enclosure (PTE) pursuant to EPA Method 204: Criteria for and Verification of a Permanent or Temporary Total Enclosure.

3.12 Gas Leak: a reading in excess of 1,000 ppmv, above background, measured on a portable hydrocarbon detection instrument that is calibrated with methane.

3.13 Gas-Tight: a condition without a gas leak as determined by EPA Method 21 in accordance with EPA Method 21.

3.14 Inventory: the stock of an item on hand at a particular location or business.

3.15 Maximum Allowable Negative Gauge Pressure: the maximum value of negative gauge pressure as measured at the Fan Inlet Pressure Control Point which ensures that the warehouse operates with sufficient negative gauge pressure to meet the criteria for a PTE pursuant to EPA Method 204: Criteria for and Verification of a Permanent or Temporary Total Enclosure.

3.16 Must: as defined in Rule 4694. any unfermented juice or mixture of juice, pulp, skins, and seeds prepared from grapes or other fruit. Must fermented to produce white wines is considered to be juice. Must fermented to produce red wines is considered to be a mixture of juice and solids, such as pulp, skins, and seeds. The solid portion of the must is called pomace.

3.17 Natural Draft Opening (NDO): as defined in EPA Method 204. Any permanent opening in the enclosure that remains open during operation of the facility and is not connected to a duct in which a fan is installed.

3.18 Non-Personnel Access Door: openings which are required to allow routine movement of brandy or wine into and out of the warehouse for access with wheeled and motorized maintenance equipment.

3.19 Normal Operation: the period during which a warehouse is operating while meeting the minimum requirements for a permanent total enclosure pursuant to EPA Method 204 and while the VOC emission control system is fully operational.

3.20 Operational and Maintenance Functions: operational and maintenance functions include the transport of barrels into and out of the warehouse, repair of warehouse internal equipment or any other operational or maintenance reason for opening the non-personnel access doors (primarily for forklift or other equipment access) during which time the enclosure would not qualify as a PTE.

3.21 Permanent Total Enclosure (PTE): an enclosure, as defined in EPA Method 204, which is a permanently installed and completely surrounds a source of emissions such that all VOC emissions are captured and contained for discharge to a control device.

3.22 Personnel Access Door: a door, with a maximum opening of 21 square feet, intended solely for occasional personnel access to the warehouse for maintenance or monitoring activities.

3.23 Potential To Emit: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.24 Proof Gallons: one liquid gallon of proof spirits, which contains 1/2 of its volume as ethanol, measured at 60 degrees Fahrenheit.

3.25 Reasonable Available Control Technology (RACT): for existing sources, those emission limits that would result from the application of demonstrated technology to reduce emissions.

3.26 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.27 Shutdown: termination of operations.

3.28 Total Annual Aging Inventory (TAAI): average of calendar year inventory. Brandy aging and aging wine inventories are calculated separately, based on TTB Form 5110.11 for brandy and Form 5120.17 for wine. The calculation is as follows:

$$TAAI = \sum MI \qquad 12 \text{ months/year.}$$

where:

TAAI = Total Annual Aging Inventory in gallons per year.
MI = Monthly Inventory in gallons.

3.29 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

3.30 Warehouse: for the purposes of this rule, the building, enclosure, or other area in which containers holding brandy and/or wine are kept for aging.

3.31 Wine: as defined in Rule 4694, the liquid product obtained from fermented must.

4.0 Exemptions

4.1 Except for recordkeeping requirements of Section 6.1.3, this rule shall not apply to any Stationary Source with a Potential To Emit of less than 10 tons of VOC per year.

4.2 This rule shall not apply to wine storage tanks subject to Rule 4694 (Wine Fermentation and Storage Tanks), Section 5.2.

5.0 Requirements

5.1 For a Stationary Source with a brandy or wine aging operation, operators shall implement record keeping according to Section 6.1, and shall implement each of the following RACT work practices:

5.1.1 Prevent and minimize the unnecessary occurrence of brandy or wine exposure to the atmosphere.

5.1.2 Prevent and minimize the occurrence of leaks and spills of brandy or wine.

5.1.3 Implement immediate clean up of leaks and spills of brandy or wine by rinsing the leaks or spills with water and washing the rinse into a proper drain.

5.1.4 Implement corrective actions to prevent a reoccurrence of a similar brandy or wine leak or spill.

5.2 For a Stationary Source with a wine aging operation that equals or exceeds both the applicable inventory and the emission thresholds listed in Table 1, operators shall also comply with the RACT work practices in either Section 5.2.1 or 5.2.2, or the requirements of Section 5.8.

5.2.1 Maintain the wine aging warehouse such that the daily average temperature, averaged over a calendar year, does not exceed 70 degrees Fahrenheit, or

5.2.2 Implement a control technology to reduce the Uncontrolled Aging Emissions (UAE), as calculated using the equation in Section 5.4 and the

Aging Emission Factor (AEF) of 0.02783 pounds ethanol per gallon, by at least 50%.

5.3 For a Stationary Source with a brandy aging operation that equals or exceeds both the applicable inventory and emission thresholds listed in Table 1, the operator shall implement BARCT by complying with Section 5.1 and either Section 5.3.1 or 5.3.2.

5.3.1 Comply with all of the requirements of Section 5.5 through 5.7, inclusive, or

5.3.2 Implement an alternate control measure that is demonstrated, using production data or the Test Methods of Section 6.2, to produce a brandy UAE of less than or equal to 0.3 proof gallons per 50 gallons, as calculated using the equation in Section 5.4, and as approved by the APCO.

Table 1. Brandy aging and wine aging thresholds

Product Type	Total Annual Aging Inventory (gallons per year)	Uncontrolled Aging Emissions (lbs/yr)
Brandy	40,000	8,000
Wine	590,000	16,000

5.4 Uncontrolled Aging Emission (UAE) threshold determinations shall be calculated using the following formula:

$$UAE = TAAI * AEF$$

Where:

UAE = Uncontrolled Aging Emissions (ethanol), in pounds per year.

TAAI = Total Annual Aging Inventory, in gallons per year.

AEF = Aging Emission Factor, in pounds ethanol per gallon.

Brandy default AEF = 0.1986 pounds ethanol per gallon, calculated from the default value of 3 proof gallons per 50 gallons barrel loss by volume, unless the actual loss by volume is demonstrated to be less.

Wine default AEF = 0.02783 pounds ethanol per gallon, calculated from the default value of 3%, unless the actual loss by volume is demonstrated to be less.

5.5 Operators complying with Section 5.3.1 shall conduct all brandy aging operations in a warehouse that is certified and maintained as a Permanent Total Enclosure (PTE) pursuant to EPA Method 204: Criteria for and Verification of a Permanent or Temporary Total Enclosure. The warehouse shall be certified as a PTE within 90 days of initial startup by a District-approved independent certifying entity (Air Resources Board Independent Contractors Approved under the California Code of Regulations, Title 17, Section 91207.)

5.5.1 Warehouses shall continuously meet the criteria for Normal Operation except for periods when the Non-Personnel Access Doors are opened for personnel and equipment access as required for Operational and Maintenance Functions and/or when the VOC control device is shutdown for scheduled routine maintenance. The total annual cumulative duration for all operational or maintenance functions and/or shutdowns shall not exceed eight (8) percent of the time during which the operations occur or a maximum of 701 hours/year which ever is less. This period shall include periods of downtime required to perform scheduled routine maintenance. Scheduled maintenance shall not exceed three (3) percent of the total operating hours per year or 240 hours per year, whichever is less.

5.5.2 A Maximum Allowable Negative Gauge Pressure at the Fan Inlet Pressure Control Point, adequate to ensure maintenance of a continuous negative gauge pressure in the warehouse as required to qualify the warehouse as a Permanent Total Enclosure pursuant to EPA Method 204, shall be demonstrated, established, and recorded at startup. The Fan Inlet Pressure Control Point shall continuously operate with a negative gauge pressure equal to or exceeding this value (more negative) except for periods when the non-personnel access doors are opened for equipment access for operational or maintenance functions.

5.5.3 Each Personnel Access Door shall be equipped with an automatic closure device to minimize the time that the door is open. Personnel access doors shall be opened only as required for access to or exit from the enclosure, minimizing the duration of the opening, and shall not be propped open.

5.5.4 Each Non-Personnel Access Door shall be equipped with a motor-actuated door and controls which will minimize the time the door remains open during access and exit and shall be integrated with the continuous monitoring system to record the time periods that the door is open.

5.6 Except for the periods of downtime required to perform scheduled routine maintenance, the warehouse's VOC emissions shall be continuously vented through a VOC emission control device that has been approved, in writing, by the APCO and which achieves a control efficiency of at least 98 percent, by weight, as determined pursuant to Section 6.2.3. Routine scheduled maintenance which requires shutdown of the VOC emission control device shall not be performed during the months of July, August, or September.

5.7 Monitoring

5.7.1 The operator of any brandy aging operation shall have the operation equipped with a continuous, automatic, monitoring system which monitors the pressure at the Fan Inlet Pressure Control Point, monitors critical operation parameters of the control device, such as the combustion chamber temperature, and records the time of opening for all non-personnel access doors.

5.7.2 Each month the operator shall demonstrate that operation of the warehouse with the Maximum Allowable Negative Gauge Pressure at the Fan Inlet Pressure Control Point is adequate to maintain the qualification of the warehouse as a PTE pursuant to EPA Method 204 by manually measuring and recording facial velocity at the largest Natural Draft Opening (NDO) on the warehouse and confirming a minimum facial velocity of 200 feet per minute. After 12 consecutive months of demonstrating the adequacy of the established Maximum Allowable Negative Gauge Pressure, the monitoring frequency can be reduced to once per calendar quarter.

5.8. Operators, who conduct wine aging in a non-porous tank as allowed under Section 5.2, shall comply with all of the following requirements:

5.8.1 The tank shall be equipped and operated with a pressure-vacuum relief valve meeting all of the following requirements:

5.8.1.1 The pressure-vacuum relief valve shall operate within 10% of the maximum allowable working pressure of the tank,

5.8.1.2 The pressure-vacuum relief valve shall operate in accordance with the manufacturer's instructions,

5.8.1.3 The pressure-vacuum relief valve shall be permanently labeled with the operating pressure settings, and

5.8.1.4 The pressure-vacuum relief valve and tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21.

5.8.2 The temperature of the aging wine shall be maintained at or below 75° Fahrenheit during wine aging operations.

5.8.2.1 Temperature of the aging wine shall be determined and recorded at least once per week.

5.8.2.2 For each batch of aging wine, operators shall achieve the temperature of 75°F or less within 60 days after the start of the aging process.

6.0 Administrative Requirements

6.1 Recordkeeping:

Operators of a brandy or wine aging operation shall maintain records, including, but not limited to:

6.1.1 Daily and annual records of the hours of operation indicating time, duration, and reason of all periods of outage for a VOC control system, including maintenance. Records of annual cumulative hours of Normal Operation shall be maintained.

6.1.2 All maintenance activities requiring a shutdown of a VOC control device, including the maintenance activity, time and date of shutdown of a VOC control device, and the duration of the shutdown.

6.1.3 Records of throughput and the gallons lost while aging. Annual summaries of all filling and dumping operations shall be maintained to allow annual determination of total proof gallons and gallons lost from each aging operation. All gauging shall be in accordance with the methods and procedures of the Gauging Manual of the Alcohol and Tobacco Tax and Trade Bureau, Department of the Treasury (27 CFR 30).

6.1.4 All required monitoring of Section 5.7.

6.1.5 All records shall be retained for a minimum of five years, and shall be made available for District, ARB, or EPA inspection, upon request.

6.2 Test Methods

The following test methods shall be used to determine compliance with the provisions of this rule. Alternate test methods may be used provided they are approved by the APCO, ARB, and EPA.

6.2.1 Determination of PTE: EPA Method 204: Criteria for and Verification of a Permanent Total Enclosure as specified in 40 CFR 51, Appendix M.

6.2.2 VOC emissions for source test purposes shall be determined using EPA Method 25 or Method 18 or BAAQMD ST-32, except when the outlet concentration must be below 50 ppmv in order to meet the standard, in which case EPA Method 25A may be used.

6.2.3 Determination of Control Efficiency of VOC Emission Control Systems shall be made using the following methods:

6.2.3.1 The control efficiency of a VOC emission control system's VOC control device shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B, EPA Method 18, or BAAQMD ST-32, as applicable, for measuring total gaseous organic concentrations at the inlet and outlet of the control device.

6.2.3.2 Control Device Efficiency, in percent, is the ratio of the weight of 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, shall be calculated by the following equation:

$$\text{Control Device Efficiency (\%)} = [(Wc-Wa)\ Wc] \times 100$$

Where:

Wc = weight of VOC entering the control device
Wa = weight of VOC discharged from the control device

6.3 Compliance Testing

6.3.1 Source testing shall be conducted using the methods and procedures specified in Section 6.2. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing.

6.3.2 The results of each source test shall be submitted to the District within 60 days after the date the source testing is completed.

6.3.3 Emission control systems shall be initially source tested for compliance with the applicable requirements of this rule no later than January 1, 2012, and not less than once every five (5) years, thereafter.

6.3.4 VOC emissions during the source test shall be calculated as the arithmetic average of three 30-consecutive-minute test runs.

7.0 Compliance Schedule

On and after January 1, 2012, no person shall conduct a brandy or wine aging operation unless compliance with the applicable requirements of this rule is demonstrated.

RULE 4701 INTERNAL COMBUSTION ENGINES – PHASE 1 (Adopted May 21, 1992; Amended December 17, 1992; Amended October 20, 1994; Amended March 16, 1995; Amended December 19, 1996; Amended November 12, 1998; Amended December 19, 2002; Amended August 21, 2003)

1.0 Purpose

The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines.

2.0 Applicability

Except as provided in Section 4.0, the provisions of this rule apply to any internal combustion engine, rated greater than 50 bhp, that requires a Permit to Operate (PTO).

3.0 Definitions

3.1 Beam-balanced pumping engine: A cyclic loaded engine powering an oil well pump, with the pump counterweight on the back end of the walking beam. The counterweight is moved mechanically without a cylinder supplying air pressure.

3.2 California Reformulated Gasoline: Gasoline meeting California Air Resources Board requirements for motor vehicle fuel in accordance with California Code of Regulations, Chapter 5, Article 1, Subarticle 2 - Standards for gasoline sold beginning March 1, 1996.

3.3 CO: Carbon monoxide.

3.4 Crank-balanced pumping engine: A cyclic loaded engine powering an oil well pump, with the pump counterweight attached to a gearbox which is attached to the walking beam with a pitman arm. The counterweight is moved mechanically, in a circular motion, without a cylinder supplying air pressure.

3.5 Cyclic Loaded Engine: An internal combustion engine that, under normal operating conditions, varies in shaft load by 40% or more of rated brake horsepower during recurrent periods of 30 seconds or less or is used to power an oil well reciprocating pump unit.

3.6 De-rated Engine: An internal combustion engine which has been physically limited and restricted by permit condition to an operational level of 50 horsepower or less.

3.7 Diesel Engine: Any compression-ignited internal combustion engine.

3.8 Dual-Fuel Engine: Any internal combustion engine which is designed to burn a liquid and gaseous fuel mixture during a single operating cycle.

3.9 Flood: A sudden and reasonably unforeseen rising and overflowing of a body of water especially onto normally dry land.

3.10 Gaseous Fuel: Any fuel which is a gas at standard conditions including but not limited to natural gas, methane, ethane, propane, butane and liquefied petroleum gas (LPG).

3.11 Internal Combustion Engine: Any spark- or compression-ignited reciprocating engine.

3.12 Lean-Burn Engine: Any spark ignited internal combustion engine that is operated with an exhaust stream oxygen concentration of four (4) percent by volume, or greater prior to any exhaust stream control device.

3.13 Location: Any single site at a building, structure, facility, or installation.

3.14 Low-use Engine: Any internal combustion engine that is limited by District permit to operate no more than 1,000 hours in any one calendar year, and is equipped with a non-resettable, totalizing hour-meter. Total time shall include all operational use and operation for maintenance and testing purposes.

3.15 Major NOx Source: Any major source as defined in Rule 2201 (New and Modified Stationary Source Review Rule) and with a potential to emit 50 tons or more per year of NOx.

3.16 Military Tactical Equipment: Any transportable engine operated by the United States armed forces or National Guard which is designed specifically for military use in an off-road, dense terrain; hostile environment; or aboard military combat vessels.

3.17 NOx: Oxides of nitrogen, calculated as equivalent nitrogen dioxide (NO_2).

3.18 Public Water District: Any government agency whose primary function is the supply and/or distribution of water; the collection and disposal of storm water runoff; or the collection, treatment, and disposal of wastewater.

3.19 Rated Brake Horsepower: The continuous brake horsepower rating specified for the engine by the manufacturer or listed on the nameplate of the unit, unless otherwise physically limited and specified by a condition on the engine's Permit to Operate (PTO).

3.20 Rich-Burn Engine: Any spark ignited internal combustion engine that is operated with an exhaust stream oxygen concentration of less than four (4) percent by volume prior to any exhaust stream control device.

3.21 Spark-ignited Internal Combustion Engine: A liquid or gaseous fueled engine designed to ignite its air/fuel mixture by a spark across a spark plug.

3.22 Standby Engine: Any internal combustion engine used exclusively for non-utility electric power generation or any other emergency engine, approved by the APCO, and limited by permit condition to operate no more than 200 hours per calendar year for non-emergency purposes and not used in conjunction with any voluntary utility demand reduction program.

3.23 Stationary Source: As defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.24 Transportable engine: Any engine designed to be and capable of being carried or moved from one location to another, and that is operated at one location for no more than 12 consecutive months. Indications of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

3.24.1 Any transportable engine that replaces a transportable engine at a location will be included in calculating the consecutive time if it performs the same function as the engine being replaced. In that case, the cumulative time of both engines, including the time between the removal of the original unit and installation of the replacement unit, would be counted towards the consecutive time period.

3.24.2 A replacement engine is not transportable if it performs the same function as the replaced engine and remains at the location for more than 12 consecutive months.

3.24.3 An engine is not transportable if it remains or will remain at a location for less than 12 consecutive months where such a period represents the length of normal annual source operations of the stationary source.

3.24.4 An engine is not transportable if it is removed from one location for a period and then returned to the same location in an attempt to circumvent the residence time requirement.

3.24.5 The period during which an engine is maintained at a storage facility shall be excluded from the time used to determine the resident time requirement.

3.25 VOC: Volatile organic compounds, as defined in Rule 1020 (Definitions).

3.26 Waste Derived Gaseous Fuel: Any gaseous fuel that was generated from the biodegradation of solid or liquid waste including, but not limited to, sewage sludge digester gas, and landfill gas.

3.27 Westside: For the purposes of this rule, this phrase refers to any facility which is physically located west of Interstate Highway 5 in Fresno, Kern, or Kings County

and any facility designated as west of Interstate Highway 5 in the photochemical modeling submitted for the State Implementation Plan.

4.0 Exemptions

4.1 The provisions of this rule do not apply to engines in agricultural operations in the growing of crops or raising of fowl or animals.

4.2 Except for the administrative requirements of Sections 6.1, 6.2.2, and 6.2.3, the provisions of this rule shall not apply to:

4.2.1 Standby engines.

4.2.2 Engines used exclusively for fire fighting services and flood control.

4.2.3 Laboratory engines used in research and testing or for the advancement of engine performance.

4.2.4 Any engine registered as a portable emissions unit under Rule 2280 (Portable Equipment Registration) or the Statewide Portable Equipment Registration Program pursuant to Sections 2450-2465, Article 5, Title 13, California Code of Regulations.

4.2.5 Engines using other fuels during natural gas curtailment that are normally fired with natural gas fuel. This exemption is limited to periods of natural gas curtailment or maintenance testing on the ancillary fuel and is limited to 336 cumulative hours of operation on the ancillary fuel per calendar year. These engines are not exempt from compliance when fired on natural gas.

4.2.6 Military Tactical Equipment.

4.2.7 Transportable engines.

4.3 Except for the administrative requirements of Sections 6.1, 6.2.2, and 6.2.3, the provisions of this rule shall not apply to a low-use engine not subject to the Reasonably Available Control Technology (RACT) requirements of Section 5.2.

4.4 The requirements of this rule shall not apply to any de-rated engine, provided the de-rating occurred before December 31, 1995.

4.5 The requirements of Section 5.1.3 shall not apply to any engine which is or will be de-rated before the applicable compliance date.

5.0 Requirements

5.1 The owner of an internal combustion engine shall not operate it under load in such a manner that results in emissions exceeding the applicable emission limit table, according to the compliance schedules listed in Section 7.0:

5.1.1 Table 1 Engine Emission Levels (corrected to 15% oxygen on a dry basis)

Engine Type	NOx	CO
1. Rich-Burn	9.5 g/bhp-hr or 640 ppmv	2000 ppmv
2. Lean-Burn	10.1 g/bhp-hr or 740 ppmv	2000 ppmv
3. Diesel	9.6 g/bhp-hr or 700 ppmv	2000 ppmv

5.1.2 Table 2 Engine Emission Levels (corrected to 15% oxygen on a dry basis)

Engine Type	NOx	CO
1. Rich Burn		
a. Beam-balanced or crank-balanced pumping engine	300 ppmv	2000 ppmv
b. Other rich burn	90 ppmv or 80% reduction	2000 ppmv
2. Lean-Burn	150 ppmv or 70% reduction	2000 ppmv
3. Diesel	600 ppmv or 20% reduction	2000 ppmv

5.1.3 Table 3 Engine Emission Levels (corrected to 15% oxygen on a dry basis)

Engine Type	NOx	CO	VOC
1. Waste Derived Gaseous Fuel.	125 ppmv or 80% reduction	2000 ppmv	750 ppmv
2. Engines owned by public water districts			
a. Rich-Burn	90 ppmv or 80% reduction	2000 ppmv	
b. Lean-Burn	150 ppmv or 70% reduction	2000 ppmv	
c. Diesel or dual-fuel	600 ppmv or 20% reduction	2000 ppmv	
3. Engines not listed in categories 1 and 2, above			
a. Rich Burn			
i. Beam-balanced or crank-balanced pumping engine	300 ppmv	2000 ppmv	
ii. Other rich burn	50 ppmv or 90% reduction	2000 ppmv	250 ppmv
b. Lean Burn	75 ppmv or 85% reduction	2000 ppmv	750 ppmv
c. Diesel or dual-fuel	80 ppmv or 90% reduction	2000 ppmv	750 ppmv

5.1.4 All continuous emission monitoring systems (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes. Any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits of this rule shall constitute a violation of this rule.

5.1.5 Percent emission reductions, if used to comply with the emission limits of Section 5.1, shall be calculated as follows:

5.1.5.1 For engines with external control devices that are not operated in combination with a second emission control device or technique, percent reduction shall be calculated using emission samples taken at the inlet and outlet of the control device.

5.1.5.2 For engines without external control devices and for engines with an external control device in combination with a second emission control device or technique, percent reduction shall be based on source test results for the uncontrolled engine and the engine after the control device or technique has been employed. In this situation, the engine's typical operating parameters, loading, and duty cycle shall be documented and repeated at each successive

post-control source test to ensure that the engine is meeting the percent reduction limit. When representative source sampling prior to the application of an emissions control technology or technique is not available, the APCO may approve the use of manufacturer's uncontrolled emissions information or source sampling from a similar, uncontrolled engine.

5.1.6 The owner of an internal combustion engine with an external emission control device that uses percent emission reduction to comply with the emission limits of Section 5.1 shall provide an accessible inlet and outlet on the external control device for taking emission samples and as approved by the APCO.

5.1.7 Owners choosing to comply with a grams/bhp-hr emission limit shall also demonstrate the rated horsepower at the source tested power level using the test method specified in Section 6.4.

5.1.8 California Reformulated Gasoline shall be used as the fuel for all gasoline-fired, spark-ignited engines.

5.2 Low-use engines:

5.2.1 The owner of the following low-use engines shall not operate such engines under load in a manner that results in emissions exceeding the applicable limits of Section 5.1.1 and 5.1.2, according to the compliance schedules listed in Section 7.3.1 and 7.3.2:

5.2.1.1 Natural gas fired, low-use engines in the Central and Western Kern County Fields.

5.2.1.2 Low-use engines operated at a major NOx source outside the Westside area.

5.2.2 Compliance with Section 5.1.3 is not required for low-use engines.

5.3 In lieu of compliance with the emission limits of Sections 5.1 and 5.2, an owner of any internal combustion engine may elect to permanently remove it from service. NOx emission reductions achieved by removal of an engine in lieu of compliance with the emission requirements of Sections 5.1.1 or 5.1.2 shall not be available for emission reduction credit (ERC).

5.4 Monitoring Equipment

The owner of any engine subject to the provisions of this rule shall:

5.4.1 For engines with external control devices, either install and maintain continuous emissions monitoring equipment for NOx, CO, and oxygen, as identified in Rule 1080 (Stack Monitoring), or install and maintain APCO-approved alternate monitoring consisting of one or more of the following:

5.4.1.1 periodic NOx and CO emission concentrations,
5.4.1.2 engine exhaust oxygen concentration,
5.4.1.3 air-to-fuel ratio,
5.4.1.4 flow rate of reducing agents added to engine exhaust,
5.4.1.5 catalyst inlet and exhaust temperature,
5.4.1.6 catalyst inlet and exhaust oxygen concentration,
5.4.1.7 other operational characteristics.

5.4.2 For engines without external control devices, monitor operational characteristics recommended by the engine manufacturer or emission control system supplier, and approved by the APCO.

5.4.3 Effective on and after November 21, 2003, use a portable NOx analyzer to take NOx emission readings to verify compliance with the emission limits or percent control specified in Section 5.1 during each calendar quarter in which a source test is not performed. All emission readings shall be taken with the engine operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. NOx emission readings taken pursuant to this section shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period.

5.4.4 An APCO approved CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13 (except subsection h), 40 CFR Appendix B (Performance Specifications), 40 CFR Appendix F (Quality Assurance Procedures), and applicable provisions of Rule 1080 (Stack Monitoring).

6.0 Administrative Requirements

6.1 Emission Control Plan

The owner of any engine subject to the provisions of this rule shall submit to the APCO an emissions control plan of all actions to be taken to satisfy the emission requirements of Section 5.1 and the compliance schedule of Section 7.0.

6.1.1 Such plan shall contain a list with the following for each permitted engine:

6.1.1.1 Permit to Operate number
6.1.1.2 engine manufacturer
6.1.1.3 model designation
6.1.1.4 rated brake horsepower
6.1.1.5 type of fuel and type of ignition
6.1.1.6 combustion type: rich-burn or lean-burn

6.1.2 Such plan shall identify the type of emission control device or technique to be applied to each engine and a construction/removal schedule, or shall provide support documentation sufficient to demonstrate that the engine is in compliance with the emission requirements of this rule.

6.1.3 The plan shall include support documentation for any exempt engine, pursuant to Section 6.2.2, and a letter of intent for any engine being permanently removed from service, pursuant to Section 7.5.

6.2 Recordkeeping

6.2.1 The owner of any engine subject to the provisions of this rule shall maintain an engine operating log with information necessary to demonstrate compliance with this rule. The engine operating log shall include, on a monthly basis, the following information:

6.2.1.1 Total hours of operation,
6.2.1.2 The type and quantity (cubic feet of gas or gallons of liquid) of fuel used,
6.2.1.3 Maintenance or modifications performed,
6.2.1.4 Monitoring data,
6.2.1.5 Compliance source test results, and
6.2.1.6 Any other information necessary to demonstrate compliance with this rule.

6.2.2 An owner claiming an exemption under Sections 4.2 or 4.3 shall maintain annual operating records. This information shall be submitted to the APCO upon request and at the end of each calendar year in a manner and form

approved by the APCO. The records shall include, but are not limited to, the following:

6.2.2.1 Total hours of operation,
6.2.2.2 The type and quantity (cubic feet of gas or gallons of liquid) of fuel used,
6.2.2.3 The purpose for operating the engine,
6.2.2.4 For standby engines, all hours of non-emergency and emergency operation shall be reported, and
6.2.2.5 Other support documentation necessary to demonstrate a claim to the exemption.

6.2.3 Information kept pursuant to Section 6.2.1 or Section 6.2.2 shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request.

6.3 Compliance Testing

The owner of any engine subject to the emission limits in Section 5.0, shall:

6.3.1 Demonstrate compliance with applicable limits by the date specified in Section 7.3 and at least once every 24 months thereafter, in accordance with the test methods in Section 6.4.

6.3.2 Conduct emissions source testing with the engine operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. For emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15 percent oxygen. For engines that comply with a percent reduction in Table 2 or Table 3, the percent reduction of NOx emissions shall also be reported.

6.3.3 In addition to other information, the source test protocol shall describe which critical parameters will be measured and how the appropriate range for these parameters shall be established.

6.3.4 The owner of an engine which has been part of a representative test group for the 24 months prior to August 21, 2003, and has not demonstrated compliance with applicable limits in accordance with the test methods in Section 6.4 within 24 months prior to August 21, 2003, shall, effective on and after August 21, 2003, demonstrate compliance with applicable limits in accordance with the test methods in Section 6.4. Such compliance shall be

demonstrated within 6 months after August 21, 2003. Thereafter, such engine shall demonstrate compliance pursuant to the requirements of Section 6.3.1.

6.4 Test Methods

Compliance with the requirements of Section 5.0 shall be determined in accordance with the following test procedures or any other method approved by EPA and the APCO:

6.4.1 Oxides of nitrogen- EPA Method 7E, or ARB Method 100.
6.4.2 Carbon monoxide - EPA Method 10, or ARB Method 100.
6.4.3 Stack gas oxygen - EPA Method 3 or 3A, or ARB Method 100.
6.4.4 Volatile organic compounds – EPA Method 25A or 25B, or ARB Method 100.
6.4.5 Operating horsepower determination - any method approved by the APCO and EPA.

7.0 Compliance Schedules

7.1 By December 19, 1997 owners of engines subject to Section 5.1.3 shall submit to the APCO an emission control plan pursuant to Section 6.1.

7.2 Owners of engines subject to Section 5.1.3 shall submit a complete application for an ATC for each engine to be modified by December 19, 1997 or at least 24 months before compliance with Section 5.1.3 is required as indicated in Section 7.3, whichever is later.

7.3 Owners shall not operate any engine unless the owner demonstrates and maintains the engine in compliance with the applicable emissions limit by the indicated dates:

7.3.1 Emission Limit Compliance Schedule for non-cyclic loaded natural gas fired engines in the Central and Western Kern County Fields:

Engine Location	Section 5.1.1 (Table 1) Compliance	Section 5.1.2 (Table 2) Compliance	Section 5.1.3 (Table 3) Compliance
1. Central Kern County Fields	Not Required	12/31/95	5/31/99
2. Western Kern County Fields	Not Required	12/31/95	5/31/01

7.3.2 Emission Limit Compliance Schedule for the following engines, but excluding engines identified in Section 7.3.1:

7.3.2.1 liquid-fueled and LPG engines operating on those fuels on October 20, 1994 in Central and Western Kern County Fields at a major NOx source;

7.3.2.2 cyclic loaded, natural gas fired engines in the Central and Western Kern County Fields;

7.3.2.3 other engines operated at a major NOx source not located in the Westside area.

Engine Location or Type	Section 5.1.1 (Table 1) Compliance	Section 5.1.2 (Table 2) Compliance	Section 5.1.3 (Table 3) Compliance
1. Public Water District Engines	Not Required	Not Required	5/31/99
2. Rich-burn, beam-balanced or crank-balanced, pumping engines shall comply with either:			
a. Early RACT Compliance	5/31/95	Not Required	12/31/97
b. Delayed RACT Compliance	Not Required	5/31/97	Not Required
3. Engines in Western Kern County Fields, not identified in category 2, shall comply with either:			
a. Early RACT Compliance	5/31/95	Not Required	5/31/01
b. Delayed RACT Compliance	Not Required	5/31/97	5/31/01
4. Engines not identified in categories 1, 2, or 3 shall comply with either:			
a. Early RACT Compliance	5/31/95	Not Required	5/31/99
b. Delayed RACT Compliance	Not Required	5/31/97	5/31/99

7.3.3 Emission Limit Compliance Schedule for all other engines not specified in Sections 7.3.1 or 7.3.2:

Engine Location or Type	Section 5.1.1 (Table 1) Compliance	Section 5.1.2 (Table 2) Compliance	Section 5.1.3 (Table 3) Compliance
1. Rich-burn, beam-balanced or crank-balanced pumping engines shall comply with either:			
a. Early Compliance	Not Required	Not Required	12/31/97
b. Delayed Non-Westside Compliance	Not Required	5/31/99	Not Required
c. Delayed Westside Compliance	Not Required	5/31/01	Not Required
2. Engines not identified in category 1 shall comply with either:			
a. Non-Westside Compliance	Not Required	Not Required	5/31/99
b. Westside Compliance	Not Required	Not Required	5/31/01

7.4 Any owner of an engine which becomes subject to the emission limits of this rule after August 21, 2003, through loss of exemption, shall not operate the subject engine, except as required for obtaining a new or modified District permit-to-operate for the engine, until the owner demonstrates full compliance with the requirements of this rule.

7.5 Any owner who elects to permanently remove an engine from service as allowed in Section 5.3, shall comply with the following:

7.5.1 Operators removing an engine from service in lieu of compliance with the emission requirements of Sections 5.1.1 or 5.1.2 shall

7.5.1.1 Submit a letter stating the intent to permanently remove the engine from service no later than May 31, 1997; and

7.5.1.2 Permanently remove the engine from service and officially surrender the permit to operate by May 31, 1999.

7.5.2 Operators removing an engine from service in lieu of compliance with the emission requirements of Section 5.1.3 shall

7.5.2.1 Submit a letter with the emission control plan stating the intent to permanently remove the engine from service; and

7.5.2.2 Permanently remove the engine from service and officially surrender the permit to operate by the applicable compliance date in Section 7.3.

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RULE 4702 INTERNAL COMBUSTION ENGINES (Adopted August 21, 2003; Amended June 16, 2005; Amended April 20, 2006; Amended January 18, 2007; Amended August 18, 2011; Amended November 14, 2013)

1.0 Purpose

The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), and sulfur oxides (SOx) from internal combustion engines.

2.0 Applicability

This rule applies to any internal combustion engine rated at 25 brake horsepower or greater.

3.0 Definitions

3.1 Agriculture Operations (AO): the growing and harvesting of crops or the raising of fowl or animals, for the primary purpose of earning a living, or of conducting agricultural research or instruction by an educational institution.

3.2 Air Pollution Control Officer (APCO): the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District, or any person authorized to act on behalf of the APCO.

3.3 ARB: California Air Resources Board.

3.4 California Reformulated Diesel: diesel fuel meeting 15 ppmv sulfur content limit as required by the California Diesel Fuel Regulations as specified in the California Code of Regulations, Title 13, Division 3, Chapter 5 (Standards for Motor Vehicle Fuels), Article 2 (Standards for Diesel Fuel), Section 2281- Sulfur content of Diesel Fuel.

3.5 California Reformulated Gasoline: gasoline meeting ARB requirements for motor vehicle fuel as specified in California Code of Regulations, Title 13, Division 3, Chapter 5, Article 1, Subarticle 2 - Standards for gasoline sold beginning March 1, 1996.

3.6 Certified Compression-Ignited Engine: a Tier 1, Tier 2, Tier 3, or Tier 4 compression-ignited engine that is EPA certified as specified in Title 40 Code of Federal Regulations Part 89 or in Title 40 Code of Federal Regulations Part 1039.

3.7 Certified Spark-Ignited Engine: a spark-ignited engine that is used exclusively in agricultural operations and that is ARB certified as specified in Title 13, Division 3, Chapter 9, Article 4.5, Section 2433 of the California Code of Regulations and that has been certified to meet a Certification Level for hydrocarbon plus NOx emissions of 0.6 grams/bhp-hr (40.2 ppmv) or less.

3.8 CO: carbon monoxide.

3.9 Compression-Ignited Internal Combustion Engine: an engine that uses the heat of compression to initiate combustion.

3.10 Cyclic Loaded Engine: an internal combustion engine that, under normal operating conditions, varies in shaft load by 40% or more of rated brake horsepower during recurrent periods of 30 seconds or less or is used to power an oil well reciprocating pump unit.

3.11 De-rated Engine: an internal combustion engine which has been physically limited and restricted by permit condition to an operational level of less than 50 horsepower.

3.12 Diesel Engine: a compression-ignited internal combustion engine.

3.13 Disaster or State of Emergency: a fire, flood, earthquake, or other similar natural catastrophe.

3.14 Distributed Generation (DG): relatively small power plants, such as internal combustion engine generator sets, which are used to generate electrical power that is either fed into the power grid or used on-site. DG units are located throughout the grid and are usually sited in or close to load centers or utility customers' sites. Distributed Generation also refers to a mechanical drive system consisting of one or more internal combustion engines and electric motors, where use of the internal combustion engines or electric motors is interchangeable.

3.15 Emergency Standby Engine: an internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator. An engine shall be considered to be an emergency standby engine if it is used only for the following purposes: (1) periodic maintenance, periodic readiness testing, or readiness testing during and after repair work; (2) unscheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and (3) if it is limited to operate 100 hours or less per calendar year for non-emergency purposes. An engine shall not be considered to be an emergency standby engine if it is used: (1) to reduce the demand for electrical

power when normal electrical power line service has not failed, or (2) to produce power for the utility electrical distribution system, or (3) in conjunction with a voluntary utility demand reduction program or interruptible power contract.

3.16 EPA: U.S. Environmental Protection Agency.

3.17 Exhaust Control: device or technique used to treat an engine's exhaust to reduce NOx, VOC, or CO emissions, and includes, but is not limited to, catalysts, afterburners, reaction chambers, and chemical injectors.

3.18 Flood: a sudden and reasonably unforeseen rising and overflowing of a body of water especially onto normally dry land.

3.19 Gaseous Fuel: a fuel which is a gas at standard conditions including but not limited to natural gas, methane, ethane, propane, butane and liquefied petroleum gas (LPG).

3.20 Higher Heating Value (hhv): the total heat liberated per mass or volume of fuel burned (expressed as Btu per pound, Btu per cubic foot, or Btu per gallon), when fuel and dry air at Standard Conditions undergo complete combustion and all resulting products are brought to their standard states at Standard Conditions. If certification of hhv is not provided by the fuel supplier, it shall be determined by the applicable test methods specified in Section 6.4.

3.21 Installation Date: the date that an internal combustion engine is initially placed at a location in order to be operated for the first time in its lifetime.

3.22 Internal Combustion Engine: a spark- or compression-ignited reciprocating engine.

3.23 Lean-Burn Engine: a spark-ignited internal combustion engine that is operated with an exhaust stream oxygen concentration of four (4) percent by volume, or greater, prior to any exhaust stream control device.

3.24 Limited Use Engine: an internal combustion engine that is limited by a permit condition to be operated no more than 4,000 hours per calendar year and provided the following requirements are met:

3.24.1 The engine is operated with an operating nonresettable elapsed time meter;

3.24.2 In lieu of an operating nonresettable elapsed time meter, the operator may use an alternative device, method, or technique, in determining operating time, provided that the alternative is approved by the APCO and EPA and is allowed by the Permit-to-Operate. The operator must demonstrate

that the alternative device, method, or technique is equivalent to using a nonresettable elapsed time meter;

3.24.3 The operator shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions; and

3.24.4 The engine operator maintains records of the annual operating hours and makes the records available to the APCO upon request.

3.25 Location: a single site at a building, structure, facility, or installation.

3.26 Low-use Engine: an internal combustion engine that is limited by a permit condition to be operated no more than 200 hours per calendar year and the engine is not used to perform any of the functions specified in Section 3.26.1 through Section 3.26.3.

3.26.1 Generate electrical power that is either fed into the electrical utility power grid or used to reduce electrical power purchased by a stationary source;

3.26.2 Generate mechanical power that is used to reduce electrical power purchased by a stationary source; or

3.26.3 Is used in a distributed generation application.

3.27 Military Tactical Equipment: a transportable engine operated by the United States armed forces or National Guard which is designed specifically for military use in an off-road, dense terrain; hostile environment; or aboard military combat vessels.

3.28 Mobile Agricultural Equipment: equipment at an agricultural operation which is towed or mounted on a vehicle and is continuously moved during the operation of the equipment. Mobile Agricultural Equipment includes, but is not limited to sprayers, balers, and harvest equipment.

3.29 NOx: oxides of nitrogen, calculated as equivalent nitrogen dioxide (NO_2).

3.30 Operator: includes but is not limited to any person who owns, leases, supervises, or operates a facility and/or equipment.

3.31 Public Utilities Commission (PUC) Quality Natural Gas: high methane gas (at least 80% methane by volume) as specified in PUC General Order 58-A.

3.32 Rated Brake Horsepower: the continuous brake horsepower rating specified for the engine by the manufacturer or listed on the nameplate of the unit, unless

otherwise physically limited and specified by a condition on the engine's Permit-to-Operate or Permit-Exempt Equipment Registration.

3.33 Replacement Engine: an engine that is installed to replace an engine that was in place as of August 18, 2011, and that such replacement is performed solely for the purpose of complying with the requirements of Section 5.2 of this rule.

3.34 Rich-Burn Engine: a spark-ignited internal combustion engine that is operated with an exhaust stream oxygen concentration of less than four (4) percent by volume prior to any exhaust stream control device.

3.35 Spark-Ignited Internal Combustion Engine: a liquid or gaseous fueled engine designed to ignite its air/fuel mixture by a spark across a spark plug.

3.36 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.37 Tier 1 Engine, Tier 2 Engine, Tier 3 Engine, and Tier 4 Engine: an EPA-certified compression-ignited engine that meets the Tier 1, Tier 2, or Tier 3 emission standards of Table 1 (Emission Standards in g/kW-hr (g/hp-hr)) on page 56970 of the Final Rule (63 Fed. Reg. 205, October 23, 1998) or the Tier 4 emission standards of Table II.A2. (Tier 4 NOx and NMHC Standards and Schedule) on page 38971 of the Final Rule (69 Fed. Reg. 124, June 29, 2004) or Table II.A-4 (Tier 4 Standards for Engines Over 750 hp (g/bhp-hr)) on page 38980 of the Final Rule (69 Fed. Reg. 124, June 29, 2004), respectively.

3.38 VOC: volatile organic compounds, as defined in Rule 1020 (Definitions).

3.39 Waste Gas: an untreated, raw gas derived through a natural process, such as anaerobic digestion, from the decomposition of organic waste at municipal solid waste landfills or publicly owned wastewater treatment facility. Waste gas includes landfill gas which is generated at landfills, digester gas which is generated at sewage treatment facilities, or a combination of the two.

3.40 Wind Machine: a machine consisting of a large fan mounted on a tower powered by an internal combustion engine, used exclusively to provide protection to crops, including, but not limited to oranges, lemons, and grapes, from cold weather by effecting a heat transfer by moving warmer atmospheric air downward and mixing it with the colder air surrounding a crop.

4.0 Exemptions

4.1 The requirements of this rule shall not apply to the following engines:

4.1.1 An engine used to propel implements of husbandry, as that term is defined in Section 36000 of the California Vehicle Code, as that section existed on January 1, 2003.

4.1.2 An engine used exclusively to power a wind machine.

4.1.3 A de-rated spark-ignited engine not used in agricultural operations, provided the de-rating occurred before June 1, 2004.

4.1.4 A de-rated spark-ignited engine used in agricultural operations or a de-rated compression-ignited engine, provided the de-rating occurred before June 1, 2005.

4.1.5 An engine used exclusively to power Mobile Agricultural Equipment.

4.1.6 An internal combustion engine registered as a portable emissions unit under the Statewide Portable Equipment Registration Program pursuant to California Code of Regulations Title 13, Division 3, Chapter 9, Article 5, Sections 2450-2465.

4.1.7 An internal combustion engine registered as a portable emissions unit under Rule 2280 (Portable Equipment Registration).

4.2 Except for the requirements of Sections 5.9 and 6.2.3, the requirements of this rule shall not apply to an emergency standby engine or a low-use engine, provided that the engine is operated with an operating nonresettable elapsed time meter.

4.2.1 In lieu of operating a nonresettable elapsed time meter, the operator may use an alternative device, method, or technique, in determining operating time, provided that the alternative is approved by the APCO and EPA and is allowed by the Permit-to-Operate or Permit-Exempt Equipment Registration. The operator must demonstrate that the alternative device, method, or technique is equivalent to using a nonresettable elapsed time meter.

4.2.2 The operator shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions.

4.3 Except for the administrative requirements of Section 6.2.3, the requirements of this rule shall not apply to the following:

4.3.1 An internal combustion engine that meets the following conditions:

4.3.1.1 The engine is operated exclusively to preserve or protect property, human life, or public health during a disaster or state of emergency, such as a fire or flood; and

4.3.1.2 Except for operations associated with Section 4.3.1.1, the engine is limited to operate no more than 100 hours per calendar year as determined by an operational nonresettable elapsed time meter, for periodic maintenance, periodic readiness testing, and readiness testing during and after repair work of the engine; and

4.3.1.3 The engine is operated with an operational nonresettable elapsed time meter. In lieu of installing a nonresettable elapsed time meter, the operator of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and EPA. The operator of the engine shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions.

4.3.2 Military Tactical Equipment and engines used to retract military aircraft arresting gear cables.

4.4 For existing facilities, a replacement unit installed for the sole purpose of complying with the requirements of this rule shall be considered to be an emission control technique and shall be exempt from the Best Available Control Technology (BACT) and offsets requirements of District Rule 2201 (New and Modified Stationary Source Review Rule) provided that all other requirements of Rule 2201 are met.

4.5 Except for the requirements of Section 5.1, the requirements of this rule shall not apply to stationary engines rated at least 25 Brake Horsepower, up to, and including 50 Brake Horsepower.

5.0 Requirements

5.1 Stationary Engines Rated at Least 25 Brake Horsepower, Up To, and Including 50 Brake Horsepower and Used in Non-Agricultural Operations (Non-AO)

5.1.1 On and after July 1, 2012, no person shall sell or offer for sale any non-AO spark-ignited engine or any non-AO compression-ignited engine unless the engine meets the applicable requirements and emission limits specified in 40 Code of Federal Regulation (CFR) 60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines) for the year in which the ownership of the engine changes.

5.1.2 By January 1, 2013, the operator shall submit a one-time report that includes the number of engines at the stationary source, and the following information for each engine:

5.1.2.1 Location of each engine,
5.1.2.2 Engine manufacturer,
5.1.2.3 Model designation and engine serial number,
5.1.2.4 Rated brake horsepower,
5.1.2.5 Type of fuel and type of ignition,
5.1.2.6 Combustion type: rich-burn, lean-burn, or compression ignition,
5.1.2.7 Purpose, and intended use, of the engine,
5.1.2.8 Typical daily operating schedule, and
5.1.2.9 Fuel consumption (cubic feet for gas or gallons for liquid fuel) for the previous one-year period.

5.2 Engines Rated at Greater than 50 Brake Horsepower (> 50 bhp)

5.2.1 Spark Ignited Engines Used in non-AO - Table 1 Emission Limits/Standards

The operator of a spark-ignited internal combustion engine rated at > 50 bhp that is used exclusively in non-AO shall not operate it in such a manner that results in emissions exceeding the limits in Table 1 for the appropriate engine type until such time that the engine has demonstrated compliance with Table 2 emission limits pursuant to the compliance deadlines in Section 7.5. In lieu of complying with Table 1 emission limits, the operator of a spark-ignited engine shall comply with the applicable emission limits pursuant to Section 8.0.

Table 1 Emission Limits/Standards for a Spark-Ignited Internal Combustion Engine rated at > 50 bhp Used Exclusively in Non-AO (All ppmv limits are corrected to 15% oxygen on a dry basis.).			
Engine Type	NOx	CO	VOC
1. Rich-Burn			
a. Waste gas fueled	50 ppmv or 90% reduction	2000 ppmv	250 ppmv
b. Cyclic loaded, field gas fueled	50 ppmv	2000 ppmv	250 ppmv
c. All other engines	25 ppmv or 96% reduction	2000 ppmv	250 ppmv
2. Lean-Burn			
a. Two stroke, gaseous fueled, less than 100 horsepower	75 ppmv or 85% reduction	2000 ppmv	750 ppmv
b. All other engines	65 ppmv or 90% reduction	2000 ppmv	750 ppmv

5.2.2 Spark-Ignited Engines Used in non-AO - Table 2 Emission Limits/Standards

On and after the compliance schedule specified in Section 7.5, the operator of a spark-ignited engine > 50 bhp that is used in non-AO shall comply with all the applicable requirements of the rule and one of the following, on an engine-by-engine basis:

5.2.2.1 On and after the compliance schedule specified in Section 7.5, the operator of a spark-ignited engine that is used exclusively in non-AO shall comply with Sections 5.2.2.1.1 through 5.2.2.1.3 on an engine-by-engine basis:

5.2.2.1.1 NOx, CO, and VOC emission limits pursuant to Table 2;

5.2.2.1.2 SOx control requirements of Section 5.7, pursuant to the deadlines specified in Section 7.5; and

5.2.2.1.3 Monitoring requirements of Section 5.10, pursuant to the deadlines specified in Section 7.5.

5.2.2.2 In lieu of complying with the NOx emission limit requirement of Section 5.2.2.1.1, an operator may pay an annual fee to the District, as specified in Section 5.6, pursuant to Section 7.6.

5.2.2.2.1 Engines in the fee payment program shall have actual emissions not greater than the applicable limits in

Table 1 during the entire time the engine is part of the fee payment program.

5.2.2.2.2 Compliance with Section 5.7 and 5.10, pursuant to the deadlines specified in Section 7.5, is also required as part of the fee payment option.

5.2.2.3 In lieu of complying with the NOx, CO, and VOC limits of Table 2 on an engine-by-engine basis, an operator may elect to implement an alternative emission control plan pursuant to Section 8.0. An operator electing this option shall not be eligible to participate in the fee payment option outlined in Section 5.2.2.2 and Section 5.6.

Table 2 Emission Limits for a Spark-Ignited Internal Combustion Engine Rated at > 50 bhp Used Exclusively in Non-AO (All ppmv limits are corrected to 15% oxygen on a dry basis). Emission Limits are effective according to the compliance schedule specified in Section 7.5.

Engine Type	NOx Limit (ppmv)	CO Limit (ppmv)	VOC Limit (ppmv)
1. Rich-Burn			
a. Waste Gas Fueled	50	2000	250
b. Cyclic Loaded, Field Gas Fueled	50	2000	250
c. Limited Use	25	2000	250
d. Rich-Burn Engine, not listed above	11	2000	250
2. Lean-Burn Engines			
a. Two-Stroke, Gaseous Fueled, > 50 bhp and < 100 bhp	75	2000	750
b. Limited Use	65	2000	750
c. Lean-Burn Engine used for gas compression	65 ppmv or 93% reduction	2000	750
d. Waste Gas Fueled	65 ppmv or 90% reduction	2000	750
e. Lean-Burn Engine, not listed above	11	2000	750

5.2.3 Spark-Ignited Engines Used Exclusively in Agricultural Operations (AO)

5.2.3.1 The operator of a spark-ignited internal combustion engine rated at > 50 bhp that is used exclusively in AO shall not operate it in such a manner that results in emissions exceeding the limits in Table 3 for the appropriate engine type on an engine-by-engine basis.

5.2.3.2 In lieu of complying with the NOx, CO, and VOC limits of Table 3 on an engine-by-engine basis, an operator may elect to implement an alternative emission control plan pursuant to Section 8.0.

5.2.3.3 An operator of an AO spark-ignited engine that is subject to the applicable requirements of Table 3 shall not replace such engine with an engine that emits more emissions of NOx, VOC, and CO, on a ppmv basis, (corrected to 15% oxygen on a dry basis) than the engine being replaced.

Table 3 Emission Limits/Standards and Compliance Schedule for a Spark-Ignited Internal Combustion Engine > 50 bhp Used Exclusively in AO (All ppmv limits are corrected to 15% oxygen on a dry basis).

Engine Type	NOx Limit	CO Limit	VOC Limit
1. Rich-Burn	90 ppmv or 80% reduction	2000 ppmv	250 ppmv
2. Lean-Burn	150 ppmv or 70% reduction	2000 ppmv	750 ppmv
3. Certified and installed on or before June 16, 2005	Meet a Certified Spark-Ignited Engine Standard of HC + NOx < 0.6 g/bhp-hr		

5.2.4 Certified Compression-Ignited Engines (AO and non-AO)

The operator of a certified compression-ignited engine rated > 50 bhp shall comply with the following requirements:

5.2.4.1 Repower, replace, or control the engine's emissions to comply with the applicable limits/standards in Table 4 on an engine-by-engine basis by the compliance dates as specified in Table 4.

5.2.4.2 The annual hours of operation shall be determined on a calendar year basis.

5.2.4.3 In lieu of complying with the NOx, CO, and VOC limits of Table 4 on an engine-by-engine basis, an operator may elect to implement an alternative emission control plan pursuant to Section 8.0.

5.2.4.4 An operator of an AO compression-ignited engine that is subject to the applicable requirements of Table 4 shall not replace such engine with an engine that emits more emissions of NOx, VOC, and CO, on a ppmv basis, (corrected to 15% oxygen on a dry basis) than the engine being replaced.

5.2.4.5 Non-AO compression-ignited engines shall be operated in such a manner to comply with the SOx control requirements of Section 5.7 and the SOx monitoring requirements of Section 5.10.

Table 4 Emission Limits/Standards and Compliance Schedule for Compression-Ignited Internal Combustion Engine (corrected to 15% oxygen on a dry basis)

Engine Type	Emission Limit/ Standard	Compliance Date
1. Non-Certified Compression-Ignited Engine Installed on or before June 1, 2006		
a. Greater than 50 bhp but not more than 500 bhp	EPA Tier 3 or Tier 4	1/1/2010
b. Greater than 500 bhp but not more than 750 bhp and less than 1000 annual operating hours	EPA Tier 3	1/1/2010
c. Greater than 750 bhp and less than 1000 annual operating hours	EPA Tier 4	7/1/2011
d. Greater than 500 bhp and greater than or equal to 1000 annual operating hours	80 ppmv NOx, 2,000 ppmv CO, 750 ppmv VOC	1/1/2008 or, if owner has an agreement to electrify, comply by 1/1/2010
2. Certified Compression-Ignited Engine		
a. EPA Certified Tier 1 or Tier 2 Engine	EPA Tier 4	1/1/2015 or 12 years after installation date, but not later than 6/1/2018
b. EPA Certified Tier 3 or Tier 4 Engine	Meet Certified Compression-Ignited Engine Standard in effect at time of installation	At time of installation

5.2.5 Non-Certified Compression-Ignited Engines (AO and Non-AO)

The operator of a non-certified compression-ignited engine, in place on or before June 1, 2006, shall comply with the Emission Limit/Standard and Compliance Date in Table 4 based on the non-certified compression-ignited engine that was in place on June 1, 2006, unless the operator meets one of the following conditions:

5.2.5.1 Replace the non-certified compression-ignited engine with a non-modified Tier 3 or a non-modified Tier 4 engine after June 1, 2006;

5.2.5.2 Control the non-certified compression-ignited engine after June 1, 2006, to emit emissions less than, or equal to, 80 ppmv NOx, 2,000 ppmv CO, and 750 ppmv VOC (corrected to 15% oxygen on a dry basis); or

5.2.5.3 Replace the non-certified compression-ignited engine after June 1, 2006, with an engine or other source with emissions less than, or equal to, 80 ppmv NOx, 2,000 ppmv CO, and 750 ppmv VOC (corrected to 15% oxygen on a dry basis).

5.3 All continuous emission monitoring systems (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes. Any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits of this rule shall constitute a violation of this rule.

5.4 Percent emission reductions, if used to comply with the NOx emission limits of Section 5.2, shall be calculated as follows:

5.4.1 For engines with external control devices that are not operated in combination with a second emission control device or technique, percent reduction shall be calculated using emission samples taken at the inlet and outlet of the control device.

5.4.2 For engines without external control devices and for engines with an external control device in combination with a second emission control device or technique, percent reduction shall be based on source test results for the uncontrolled engine and the engine after the control device or technique has been employed. In this situation, the engine's typical operating parameters, loading, and duty cycle shall be documented and repeated at each successive post-control source test to ensure that the engine is meeting the percent reduction limit. When representative source sampling prior to the application of an emissions control technology or technique is not available, the APCO may approve the use of a manufacturer's uncontrolled emissions information or source sampling from a similar, uncontrolled engine.

5.5 The operator of an internal combustion engine that uses percent emission reduction to comply with the NOx emission limits of Section 5.2 shall provide an accessible inlet and outlet on the external control device or the engine as appropriate for taking emission samples and as approved by the APCO.

5.6 Payment of an Annual Fee In Lieu of Complying with a NOx Emission Limit

The operator of a non-AO spark-ignited engine who elects to comply under Section 5.2.2.2 shall comply with the requirements of Sections 5.6 by the schedule specified in Section 7.6 and all other applicable provisions of this rule.

5.6.1 An operator shall pay a total annual fee to the District based on the total NOx emissions from those engines that will be subject to Section 5.2.2.2. The annual fee shall be calculated in the following manner:

5.6.1.1 The operator shall calculate the total emissions for all engines operating at a stationary source that will comply with Section 5.2.2.2. The total NOx emissions shall be calculated in accordance with Section 5.6.1.3.

5.6.1.2 The total annual fee shall be calculated in accordance with Section 5.6.1.4. These calculations include only the units that have been identified to comply with Section 5.2.2.2.

5.6.1.3 Total Emissions (TE) Calculation

$E_{(engine)} = A \times B \times C \times D \times 2.147 \times 10^{-16}$

Where:

$E_{(engine)}$ = Annual NOx emissions for each unit, in tons/year.

A = NOx emission limit for the Permit-to-Operate, in ppmvd corrected to 15% oxygen.

B = Annual fuel use (ft3/year)

C = Fuel higher heating value (Btu/ft3) for natural gas use 1,000 Btu/ft3

D = Fuel F-Factor at 60°F (Dscf/MMBtu) for natural gas use 8,579 Dscf/MMBtu

$TE = \sum E(engine)$

Where:

$\sum E(engine)$ = Sum of all NOx emissions from all units in the annual fee program, in tons per year.

5.6.1.4 Total Annual Fee Calculation

Total Annual Fee = (TE x FR) + Administrative Fee

Where:

TE = Total Emissions, in tons per year, as calculated in Section 5.6.1.3.

FR (Fee Rate) = the cost of NOx reductions, in dollars per ton, as established by District Rule 9510. Under no circumstances shall the cost per ton of NOx reductions exceed the cost effectiveness threshold for the Carl Moyer Cost Effectiveness, as established by the applicable state law.

Administrative Fee = 4% x (TE x FR)

5.7 Sulfur Oxides (SOx) Emission Control Requirements

On and after the compliance schedule specified in Section 7.5, operators of non-AO spark-ignited engines and non-AO compression-ignited engines shall comply with one of the following requirements:

5.7.1 Operate the engine exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases; or

5.7.2 Limit gaseous fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or

5.7.3 Use California Reformulated Gasoline for gasoline-fired spark-ignited engines; or

5.7.4 Use California Reformulated Diesel for compression-ignited engines; or

5.7.5 Operate the engine on liquid fuel that contains no more than 15 ppm sulfur, as determined by the test method specified in Section 6.4.6; or

5.7.6 Install and properly operate an emission control system that reduces SO_2 emissions by at least 95% by weight as determined by the test method specified in Section 6.4.6.

5.8 Monitoring Requirements: Non-AO Spark-Ignited Engines and Engines in an AECP (Section 8.0)

The operator of a non-AO spark-ignited engine subject to the requirements of Section 5.2 or any engine subject to the requirements of Section 8.0 shall comply with the following requirements:

5.8.1 For each engine with a rated brake horsepower of 1,000 bhp or greater and which is allowed by Permit-to-Operate or Permit-Exempt Equipment Registration condition to operate more than 2,000 hours per calendar year, or with an external emission control device, either install, operate, and maintain continuous monitoring equipment for NOx, CO, and oxygen, as identified in Rule 1080 (Stack Monitoring), or install, operate, and maintain APCO-approved alternate monitoring. The monitoring system may be a continuous emissions monitoring system (CEMS), a parametric emissions monitoring system (PEMS), or an alternative monitoring system approved by the APCO. APCO-approved alternate monitoring shall consist of one or more of the following:

5.8.1.1 Periodic NOx and CO emission concentrations,
5.8.1.2 Engine exhaust oxygen concentration,
5.8.1.3 Air-to-fuel ratio,
5.8.1.4 Flow rate of reducing agents added to engine exhaust,
5.8.1.5 Catalyst inlet and exhaust temperature,
5.8.1.6 Catalyst inlet and exhaust oxygen concentration, or
5.8.1.7 Other operational characteristics.

5.8.2 For each engine not subject to Section 5.8.1, monitor operational characteristics recommended by the engine manufacturer or emission control system supplier, and approved by the APCO.

5.8.3 For each engine with an alternative monitoring system, submit to, and receive approval from the APCO, adequate verification of the alternative monitoring system's acceptability. This would include data demonstrating the system's accuracy under typical operating conditions for the specific application and any other information or data deemed necessary in assessing the acceptability of the alternative monitoring system.

5.8.4 For each engine with an APCO approved CEMS, operate the CEMS in compliance with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13 (except subsection h), 40 CFR Appendix B (Performance Specifications), 40 CFR Appendix F (Quality Assurance Procedures), and applicable provisions of Rule 1080 (Stack Monitoring).

5.8.5 For each engine, have the data gathering and retrieval capabilities of an installed monitoring system described in Section 5.8 approved by the APCO.

5.8.6 For each engine, install and operate a nonresettable elapsed time meter.

5.8.6.1 In lieu of installing a nonresettable elapsed time meter, the operator may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and EPA and is allowed by a Permit-to-Operate or Permit-Exempt Equipment Registration condition.

5.8.6.2 The operator shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions.

5.8.7 For each engine, implement the Inspection and Monitoring (I&M) plan, if any, submitted to and approved by the APCO pursuant to Section 6.5.

5.8.8 For each engine, collect data through the I&M plan in a form approved by the APCO.

5.8.9 For each engine, use a portable NOx analyzer to take NOx emission readings to verify compliance with the emission requirements of Section 5.2 or Section 8.0 during each calendar quarter in which a source test is not performed and the engine is operated.

5.8.9.1 If an engine is operated less than 120 calendar days per calendar year, take one NOx emission reading during the calendar year in which a source test is not performed and the engine is operated.

5.8.9.2 All emission readings shall be taken with the engine operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate or Permit-Exempt Equipment Registration.

5.8.9.3 The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO.

5.8.9.4 All NOx emissions readings shall be reported to the APCO in a manner approved by the APCO.

5.8.9.5 NOx emission readings taken pursuant to this section shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the 15 consecutive-minute period.

5.8.10 The APCO shall not approve an alternative monitoring system unless it is documented that continued operation within ranges of specified emissions-related performance indicators or operational characteristics provides a reasonable assurance of compliance with applicable emission limits. The operator shall source test over the proposed range of surrogate operating parameters to demonstrate compliance with the applicable emission standards.

5.8.11 For each engine subject to Section 8.0, install and operate a nonresettable fuel meter.

5.8.11.1 In lieu of installing a nonresettable fuel meter, the operator may use an alternative device, method, or technique in determining daily fuel consumption provided that the alternative is approved by the APCO and EPA.

5.8.11.2 The operator shall properly maintain, operate, and calibrate the required fuel meter in accordance with the manufacturer's instructions.

5.9 Monitoring Requirements: All Other Engines

5.9.1 The operator of any of the following engines shall comply with the requirements specified in Section 5.9.2 through Section 5.9.5 below:

5.9.1.1 An AO spark-ignited engine subject to the requirements of Section 5.2;

5.9.1.2 A compression-ignited engine subject to the requirements of Section 5.2; or

5.9.1.3 An engine subject to Section 4.2.

5.9.2 Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.

5.9.3 Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.

5.9.4 Install and operate a nonresettable elapsed time meter.

5.9.4.1 In lieu of installing a nonresettable elapsed time meter, the operator may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and EPA and is allowed by a Permit-to-Operate or Permit-Exempt Equipment Registration condition.

5.9.4.2 The operator shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions.

5.9.5 The operator of an AO spark-ignited engine that has been retro-fitted with a NOx exhaust control that has not been certified in accordance with Section 9.0 Exhaust Control System Certification Requirements, or a compression-ignited engine that has been retro-fitted with a NOx exhaust control shall comply with the following:

5.9.5.1 Use a portable NOx analyzer to take NOx emission readings to demonstrate compliance with the emission requirements of Section 5.2.

5.9.5.2 The operator of a compression-ignited engine that is subject to the limits/standards of Section 5.2 Table 4 Category 1.d shall use a portable NOx analyzer to take NOx emission readings at least once every six (6) months that the engine is operated.

5.9.5.3 The operator of any other engine that has been retro-fitted with a NOx exhaust control shall use a portable NOx analyzer to take NOx emission readings at least once every 24 months that the engine is operated.

5.9.5.4 All emission readings shall be taken with the engine operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate or Permit-Exempt Equipment Registration.

5.9.5.5 The portable NOx analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO.

5.9.5.6 All NOx emissions readings shall be reported to the APCO in a manner approved by the APCO.

5.9.5.7 NOx emission readings taken pursuant to this section shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the 15 consecutive-minute period.

5.10 SOx Emissions Monitoring Requirements

On and after the compliance schedule specified in Section 7.5, an operator of a non-AO engine shall comply with the following requirements:

5.10.1 An operator of an engine complying with Sections 5.7.2 or 5.7.5 shall perform an annual sulfur fuel analysis in accordance with the test methods in Section 6.4. The operator shall keep the records of the fuel analysis and shall provide it to the District upon request,

5.10.2 An operator of an engine complying with Section 5.7.6 by installing and operating a control device with at least 95% by weight SOx reduction efficiency shall submit for approval by the APCO the proposed key system operating parameters and frequency of the monitoring and recording not later than July 1, 2013, and

5.10.3 An operator of an engine complying with Section 5.7.6 shall perform an annual source test unless a more frequent sampling and reporting period is included in the Permit-to-Operate. Source tests shall be performed in accordance with the test methods in Section 6.4.

5.11 Permit-Exempt Equipment Registration Requirements

The operator of an engine used exclusively in agricultural operations shall register such engine pursuant to Rule 2250 (Permit-Exempt Equipment Registration), except for an engine that meets any one of the following conditions:

5.11.1 The engine is required to have a Permit-to-Operate pursuant to California Health and Safety Code Section 42301.16; or

5.11.2 The engine is not required to comply with Section 5.2 of this rule.

6.0 Administrative Requirements

6.1 Emission Control Plan

The operator of an engine subject to the requirements of Section 5.2 of this rule shall submit to the APCO an APCO-approvable emission control plan of all actions to be taken to satisfy the emission requirements of Section 5.2 and the compliance schedules of Section 7.0. If there is no change to the previously-approved emission control plan, the operator shall submit a letter to the District indicating that the previously approved plan is still valid.

6.1.1 The requirement to submit an emission control plan shall apply to the following engines:

6.1.1.1 Engines that have been retrofitted with an exhaust control device, except those certified per Section 9.0;

6.1.1.2 Engines subject to Section 8.0;

6.1.1.3 An AO spark-ignited engine that is subject to the requirements of Section 8.0;

6.1.1.4 An AO spark-ignited engine that has been retrofitted with a catalytic emission control and is not subject to the requirements of Section 8.0.

6.1.2 Such emission control plan shall contain the following information, as applicable for each engine:

6.1.2.1 Permit-to-Operate number, Authority-to-Construct number, or Permit-Exempt Equipment Registration number,
6.1.2.2 Engine manufacturer,
6.1.2.3 Model designation and engine serial number,
6.1.2.4 Rated brake horsepower,
6.1.2.5 Type of fuel and type of ignition,
6.1.2.6 Combustion type: rich-burn or lean-burn,
6.1.2.7 Total hours of operation in the previous one-year period, including typical daily operating schedule,
6.1.2.8 Fuel consumption (cubic feet for gas or gallons for liquid) for the previous one-year period,
6.1.2.9 Stack modifications to facilitate continuous in-stack monitoring and to facilitate source testing,

6.1.2.10 Type of control to be applied, including in-stack monitoring specifications,
6.1.2.11 Applicable emission limits,
6.1.2.12 Documentation showing existing emissions of NOx, VOC, and CO, and
6.1.2.13 Date that the engine will be in full compliance with this rule.

6.1.3 The emission control plan shall identify the type of emission control device or technique to be applied to each engine and a construction/removal schedule, or shall provide support documentation sufficient to demonstrate that the engine is in compliance with the emission requirements of this rule.

6.1.4 For an engine being permanently removed from service, the emission control plan shall include a letter of intent pursuant to Section 7.2.

6.2 Recordkeeping

6.2.1 The operator of an engine subject to the requirements of Section 5.2 of this rule shall maintain an engine operating log to demonstrate compliance with this rule. This information shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request. The engine operating log shall include, on a monthly basis, the following information:

6.2.1.1 Total hours of operation,
6.2.1.2 Type of fuel used,
6.2.1.3 Maintenance or modifications performed,
6.2.1.4 Monitoring data,
6.2.1.5 Compliance source test results, and
6.2.1.6 Any other information necessary to demonstrate compliance with this rule.
6.2.1.7 For an engine subject to Section 8.0, the quantity (cubic feet of gas or gallons of liquid) of fuel used on a daily basis.

6.2.2 The data collected pursuant to the requirements of Section 5.8 and Section 5.9 shall be maintained for at least five years, shall be readily available, and made available to the APCO upon request.

6.2.3 An operator claiming an exemption under Section 4.2 or Section 4.3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and provided to the APCO upon request. The records shall include, but are not limited to, the following:

6.2.3.1 Total hours of operation,
6.2.3.2 The type of fuel used,
6.2.3.3 The purpose for operating the engine,
6.2.3.4 For emergency standby engines, all hours of non-emergency and emergency operation shall be reported, and
6.2.3.5 Other support documentation necessary to demonstrate claim to the exemption.

6.3 Compliance Testing

The operator of an engine subject to the requirements of Section 5.2 or the requirements of Section 8.0 shall comply with the following requirements:

6.3.1 The requirements of Section 6.3.2 through Section 6.3.4 shall apply to the following engines:

6.3.1.1 Engines that have been retrofitted with an exhaust control device, except those certified per Section 9.0;

6.3.1.2 Engines subject to Section 8.0;

6.3.1.3 An AO spark-ignited engine that is subject to the requirements of Section 8.0;

6.3.1.4 An AO spark-ignited engine that has been retrofitted with a catalytic emission control and is not subject to the requirements of Section 8.0.

6.3.2 Demonstrate compliance with applicable limits, ppmv or percent reduction, in accordance with the test methods in Section 6.4, as specified below:

6.3.2.1 By the applicable date specified in Section 5.2, and at least once every 24 months thereafter, except for an engine subject to Section 6.3.2.2.

6.3.2.2 By the applicable date specified in Section 5.2 and at least once every 60 months thereafter, for an AO spark-ignited engine that has been retro-fitted with a catalytic emission control device.

6.3.2.3 A portable NOx analyzer may be used to show initial compliance with the applicable limits/standards in Section 5.2 for AO spark-ignited engines, provided the criteria specified in Sections 6.3.2.3.1 to 6.3.2.3.5 are met, and a source test is conducted in

accordance with Section 6.3.2 within 12 months from the required compliance date.

6.3.2.3.1 A minimum of 15 minutes of runtime must be measured with data recorded at a minimum of 15, evenly spaced time intervals. Compliance is to be determined with the arithmetic average of the oxygen-corrected data;

6.3.2.3.2 The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer calibration records shall be made available at the District's request;

6.3.2.3.3 The analyzer shall be checked with EPA protocol span gas at the beginning and end of each test day. The results of these checks shall be recorded and copies submitted to the District with each engine test. If the analyzer exhibits more than a 10% deviation from the span check, the instrument must be re-calibrated. Any analysis performed prior to an end-of-day span check failure shall be void;

6.3.2.3.4 The test results of each engine, including span check results, shall be submitted to the District within 30 days of the test date. Test results shall clearly identify the engine tested including operator, location, permit or registration number, manufacturer, model, and serial number; and

6.3.2.3.5 The analyzer utilized for each check shall be clearly identified in the material submitted with the test results. Identification shall include manufacturer and serial number of the analyzer used, and the last calibration date.

6.3.3 Conduct emissions source testing with the engine operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate or Permit-Exempt Equipment Registration. For emissions source testing performed pursuant to Section 6.3.2 for the purpose of determining compliance with an applicable standard or numerical limitation, the arithmetic average of three (3) 30-consecutive-

minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15 percent oxygen. For engines that comply with a percent reduction limit, the percent reduction of NOx emissions shall also be reported.

6.3.4 In addition to other information, the source test protocol shall describe which critical parameters will be measured and how the appropriate range for these parameters shall be established. The range for these parameters shall be incorporated into the I&M plan.

6.3.5 Engines that are limited by Permit-to-Operate or Permit-Exempt Equipment Registration condition to be fueled exclusively with PUC quality natural gas shall not be subject to the reoccurring source test requirements of Section 6.3.2 for VOC emissions.

6.3.6 Representative Testing

For spark-ignited engines, in lieu of compliance with the applicable requirements of Section 6.3.2, compliance with the applicable emission limits in Section 5.2 shall be demonstrated by submittal of annual emission test results, within 30 days of the test date, to the District, from a unit or units that represents a specified group of units, provided all of the following requirements are satisfied:

6.3.6.1 The units are located at the same stationary source;

6.3.6.2 The units were produced by the same manufacturer, have the same model number or other manufacturer's designation in common, and have the same rated capacity and operating specifications;

6.3.6.3 The units are operated and maintained in a similar manner; and

6.3.6.4 At least 20% of the total number of units are tested during each annual test cycle.

6.3.6.5 The District, based on documentation submitted by the stationary source:

6.3.6.5.1 Determines that the margin of compliance for the identical units tested is significant and can be maintained on an on-going basis; or

6.3.6.5.2 Determines based on a review of sufficient emissions data that, though the margin of compliance is not substantial, other factors allow for the determination that the variability of emissions for identical tested units is low enough for confidence that the untested unit will be in compliance. These factors may include, but are not limited to, the following:

6.3.6.5.2.1 Historical records at the tested unit showing consistent invariant load;

6.3.6.5.2.2 Fuel characteristics yielding low variability and therefore assurance that emissions will be constant and below allowable levels;

6.3.6.5.2.3 Statistical analysis of a robust emissions data set demonstrating sufficiently low variability to convey assurance that the margin of compliance, though small, is reliable.

6.3.6.6 Should any of the representative units exceed the required emission limits, or if the District notifies the operator that the criteria in Sections 6.3.6.1 through 6.3.6.5 have not been fulfilled, each of the units in the group shall individually demonstrate compliance by emissions testing. Failure to complete emissions testing within 90 days of the failed test shall result in the untested units being in violation of this rule. After compliance with the requirements of this section has been demonstrated, subsequent source testing shall be performed pursuant to Sections 6.3.2 or 6.3.6.

6.4 Test Methods

Compliance with the requirements of Section 5.2 shall be determined, as required, in accordance with the following test procedures or any other method approved by EPA and the APCO:

6.4.1 Oxides of nitrogen - EPA Method 7E, or ARB Method 100.

6.4.2 Carbon monoxide - EPA Method 10, or ARB Method 100.

6.4.3 Stack gas oxygen - EPA Method 3 or 3A, or ARB Method 100.

6.4.4 Volatile organic compounds - EPA Method 25A or 25B, or ARB Method 100. Methane and ethane, which are exempt compounds, shall be excluded from the result of the test.

6.4.5 Operating horsepower determination - any method approved by EPA and the APCO.

6.4.6 SOx Test Methods

6.4.6.1 Oxides of sulfur – EPA Method 6C, EPA Method 8, or ARB Method 100.

6.4.6.2 Determination of total sulfur as hydrogen sulfide (H_2S) content – EPA Method 11 or EPA Method 15, as appropriate.

6.4.6.3 Sulfur content of liquid fuel – American Society for Testing and Materials (ASTM) D 6920-03 or ASTM D 5453-99.

6.4.6.4 The SOx emission control system efficiency shall be determined using the following:

$$\% \text{ Control Efficiency} = [(C_{SO2,\ inlet} - C_{SO2,\ outlet}) / C_{SO2,\ inlet}] \text{ X } 100$$

Where:

$C_{SO2,\ inlet}$ = concentration of SOx (expressed as SO_2) at the inlet side of the SOx emission control system, in lb/Dscf

$C_{SO2,\ outlet}$ = concentration of SOx (expressed as SO_2) at the outlet side of the SOx emission control system, in lb/Dscf

6.4.7 The Higher Heating Value (hhv) of the fuel shall be determined by one of the following test methods:

6.4.7.1 ASTM D 240-02 or ASTM D 3282-88 for liquid hydrocarbon fuels.

6.4.7.2 ASTM D 1826-94 or ASTM 1945-96 in conjunction with ASTM D 3588-89 for gaseous fuel.

6.5 Inspection and Monitoring (I&M) Plan

The operator of an engine that is subject to the requirements of Section 5.2 or the requirements of Section 8.0 shall submit to the APCO for approval, an I&M plan that specifies all actions to be taken to satisfy the following requirements and the requirements of Section 5.8. The actions to be identified in the I&M plan shall include, but are not limited to, the information specified below. If there is no change to the previously approved I&M plan, the operator shall submit a letter to the District indicating that previously approved plan is still valid.

6.5.1 The requirements of Section 6.5.2 through Section 6.5.9 shall apply to the following engines:

6.5.1.1 Engines that have been retrofitted with an exhaust control device, except those certified per Section 9.0;

6.5.1.2 Engines subject to Section 8.0;

6.5.1.3 An AO spark-ignited engine that is subject to the requirements of Section 8.0.

6.5.1.4 An AO spark-ignited engine that has been retrofitted with a catalytic emission control and is not subject to the requirements of Section 8.0.

6.5.2 Procedures requiring the operator to establish ranges for control equipment parameters, engine operating parameters, and engine exhaust oxygen concentrations that source testing has shown result in pollutant concentrations within the rule limits.

6.5.3 Procedures for monthly inspections as approved by the APCO. The applicable control equipment parameters and engine operating parameters will be inspected and monitored monthly in conformance with a regular inspection schedule listed in the I&M plan.

6.5.4 Procedures for the corrective actions on the noncompliant parameter(s) that the operator will take when an engine is found to be operating outside the acceptable range for control equipment parameters, engine operating parameters, and engine exhaust NOx, CO, VOC, or oxygen concentrations.

6.5.5 Procedures for the operator to notify the APCO when an engine is found to be operating outside the acceptable range for control equipment

parameters, engine operating parameters, and engine exhaust NOx, CO, VOC, or oxygen concentrations.

6.5.6 Procedures for preventive and corrective maintenance performed for the purpose of maintaining an engine in proper operating condition.

6.5.7 Procedures and a schedule for using a portable NOx analyzer to take NOx emission readings pursuant to Section 5.8.9.

6.5.8 Procedures for collecting and recording required data and other information in a form approved by the APCO including, but not limited to, data collected through the I&M plan and the monitoring systems described in Sections 5.8.1 and 5.8.2. Data collected through the I&M plan shall have retrieval capabilities as approved by the APCO.

6.5.9 Procedures for revising the I&M plan. The I&M plan shall be updated to reflect any change in operation. The I&M plan shall be updated prior to any planned change in operation. An engine operator that changes significant I&M plan elements must notify the District no later than seven days after the change and must submit an updated I&M plan to the APCO no later than 14 days after the change for approval. The date and time of the change to the I&M plan shall be recorded in the engine operating log. For new engines and modifications to existing engines, the I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit-to-Operate or Permit-Exempt Equipment Registration. The operator of an engine may request a change to the I&M plan at any time.

7.0 Compliance Schedules

7.1 Loss of Exemption

The operator of an engine which becomes subject to the emission limits/standards of this rule through loss of exemption shall not operate the subject engine, except as required for obtaining a new or modified Permit-to-Operate or Permit-Exempt Equipment Registration for the engine, until the operator demonstrates that the subject engine is in full compliance with the requirements of this rule.

7.2 Permanent Removal of an Engine

The operator of an engine who elects to permanently remove the engine from service shall comply with all of the following conditions:

7.2.1 Comply with all applicable requirements of this rule until the engine is permanently removed from service;

7.2.2 Submit a letter to the APCO no later than 14 days before the engine is permanently removed from service, stating the intent to permanently remove the engine from service. The engine removal letter can be submitted with the emission control plan, if any; and

7.2.3 Permanently remove the engine from service and officially surrender the Permit-to-Operate or Permit-Exempt Equipment Registration, if any, to the APCO no later than 30 days after the engine is permanently removed from service.

7.3 AO Compression-Ignited Engine

7.3.1 The operator of an AO compression-ignited engine that is subject to Section 5.2 and that is required to submit an Authority-to-Construct application in order to comply with the requirements of this rule, shall submit the Authority-to-Construct application, and any required Emission Control Plan or I&M Plan, no later than six months before the engine is required to be in compliance with the requirements of Section 5.2.

7.3.2 The operator of an AO compression-ignited engine that is subject to Section 5.2 and that is required to submit a Permit-Exempt Equipment Registration application in order to comply with the requirements of Rule 4702, shall submit the Permit-Exempt Equipment Registration application, and any required Emission Control Plan or I&M Plan, no later than three months before the engine is required to be in compliance with the requirements of Section 5.2.

7.3.3 Unless otherwise specified, the operator of an engine that is subject to the requirements of Section 5.2 of Rule 4702 shall be in full compliance with Rule 4702 by the indicated dates in Table 4.

7.4 Non-AO Compression-Ignited Engine

7.4.1 The operator of a non-AO compression-ignited engine that is subject to Section 5.2 and that is required to submit an Emission Control Plan, an I&M Plan, or an Authority-to-Construct in order to comply with rule requirements, shall submit such document(s) no later than six months before the engine is required to be in compliance with the requirements of Section 5.2.

7.4.2 Unless otherwise specified, the operator of an engine that is subject to the requirements of Section 5.2 shall be in full compliance with Rule 4702 by the indicated dates in Table 4.

7.5 Non-AO Spark-Ignited Engine

7.5.1 An operator with non-AO spark-ignited engines at a stationary source subject to Table 2 or Section 8.0 emission limits, SOx control requirements of Section 5.7, and the SOx monitoring requirements of Section 5.10 shall comply with the schedule specified in Table 5.

Table 5 Compliance Schedule for Non-AO Spark-Ignited Engines Subject to Table 2 Emission Limits, and SOx Control and Monitoring Requirements

Engines to be in Compliance at a Stationary Source	Emission Control Plan	Authority to Construct and Inspection and Monitoring Plan	Full Compliance
Operator with a single engine at a stationary source			
Single Engine	1/1/12	1/1/13	1/1/14
Operator with at least two engines, but less than 12 engines at a stationary source			
33% or more of the engines subject to Table 2 emission limits as of August 18, 2011	7/1/12	1/1/13	1/1/14
66% or more of the engines subject to Table 2 emission limits as of August 18, 2011	7/1/12	1/1/14	1/1/15
100% of the engines subject to Table 2 emission limits	7/1/12	1/1/15	1/1/16
Operator with at least 12 engines at a stationary source			
25% or more of the engines subject to Table 2 emission limits as of August 18, 2011	7/1/12	1/1/13	1/1/14
50% or more of the engines subject to Table 2 emission limits as of August 18, 2011	7/1/12	1/1/14	1/1/15
75% or more of the engines subject to Table 2 emission limits as of August 18, 2011	7/1/12	1/1/15	1/1/16
100% of the engines subject to Table 2 emission limits	7/1/12	1/1/16	1/1/17

7.5.2 As shown in Table 5, the column labeled:

7.5.2.1 "Emission Control Plan" identifies the date by which the operator shall submit an emission control plan pursuant to the applicable provisions of Section 6.1. The emission control plan shall identify all the Non-AO spark-ignited engines subject to Table 2 emission limits, and SOx control and monitoring requirements. The emission control plan shall identify all the steps to be taken to comply with this rule. If there is no change to the previously approved emission control plan, the operator does not need to submit a new emission control plan. However, the operator shall submit a letter to the District indicating that previously approved plan is still valid.

7.5.2.2 "Authority to Construct and Inspection and Maintenance Plan" identifies the date by which the operator shall submit an Authority to Construct (if needed) and an Inspection and Monitoring Plan as specified in the applicable provisions of Section 6.5 for each engine subject to Table 2 emission limits, SOx control and monitoring requirements. If there is no change to the previously approved I&M plan, the operator does not need to submit a new I&M Plan. However, the operator shall submit a letter to the District indicating that previously approved I&M plan is still valid.

7.5.2.3 "Full Compliance" identifies the date by which the operator shall demonstrate that each unit is in compliance with Table 2 emission limits, SOx control and monitoring requirements.

7.6 Operator of Non-AO Spark-Ignited Engine Who Elects to Pay Fees

In lieu of complying with Table 2 NOx emission limits, the operator of a non-AO spark-ignited engine who elects to pay annual fees under Section 5.2.2.2 and Section 5.6 shall comply with the following requirements:

7.6.1 By the date specified in Table 5, submit an Emission Control Plan which includes the following information:

7.6.1.1 Number of engines at a stationary source that will comply under Section 5.2.2.2,

7.6.1.2 Location of each engine,

7.6.1.3 Engine manufacturer, model designation, engine serial number, and Permit-to-Operate number, and

7.6.1.4 Each engine's rated brake horsepower, fuel type, and type of ignition.

7.6.2 The total annual fees shall be paid to the District in the following manner:

7.6.2.1 Payment shall be paid no later than June 30 of each year, for the emissions of the previous calendar year,

7.6.2.2 The first payment is due to the District no later than June 30 of the year in which full compliance is required for the specified percent of engines at a stationary source as specified in Table 5 that the operator has opted to pay the annual fees,

7.6.2.3 Should June 30 fall on a day when the District is closed, the payment shall be made by the next District working day after June 30, and

7.6.2.4 Payments shall continue annually until the engine either is permanently removed from use in the San Joaquin Valley Air Basin and the Permit-to-Operate is surrendered or the operator demonstrates compliance with the applicable Table 2 emission limits.

7.6.2.5 The emissions fee for units that operate for less than the full calendar year before demonstrating compliance under Section 5.2, shall be based on the actual fuel used during the portion of the calendar year prior to demonstrating compliance or removing the unit from operation within the San Joaquin Valley Air Basin.

8.0 Alternative Emission Control Plan (AECP)

An operator may comply with the NOx emission requirements of Section 5.2 for a group of engines by meeting the requirements below. An operator that is subject to the requirements below shall also comply with all the applicable requirements of Sections 5.0, 6.0, and 7.0. Only engines subject to Section 5.2 are eligible for inclusion in an AECP.

8.1 During any seven (7) consecutive calendar day period, the operator shall operate all engines in the AECP to achieve an actual aggregate NOx emission level that is not greater than 90 percent of the NOx emissions that would be obtained by controlling the engines to comply individually with the NOx limits in Section 5.2. The operator shall operate engines in the AECP such that

$$AE_{Actual} \leq 0.90\ (AE_{Limit})$$

and shall notify the APCO within 24 hours of any violation of this section.

8.1.1 The actual aggregate NOx emissions (AE_{Actual}) is the sum of the actual NOX emissions, over a seven (7) consecutive calendar day period, from all engines in the AECP which were actually operated during that period. AE_{Actual} shall be calculated as follows:

$$AE_{Actual} = \sum_{i} (EF_i)(F_i)(k_i)$$

where:

i identifies each engine in the AECP.

EF_i is the NOx emission factor of the engine established pursuant to Section 8.2 and approved by the APCO.

F_i is the actual total fuel used by the engine during the seven (7) consecutive calendar day period.

k_i is a constant used to convert an engine's fuel use and NOx emission factor to the amount of NOx emitted. k_i is dependent on the engine and the pollutant emitted. Calculation of k_i shall be accomplished using 40 CFR Part 60, Appendix A, Method 19, or an equivalent method approved by EPA, ARB and the APCO.

8.1.2 The estimated aggregate NOx emissions limit (AE_{Limit}) is the sum of the NOx emissions, over a seven (7) consecutive calendar day period, for the same engines in the AECP which were actually operated during the same period as considered in Section 8.1.1, calculated with the NOx limits of Section 5.2 and the actual fuel usage during that seven (7) consecutive calendar day period. AE_{Limit} shall be calculated as follows:

$$AE_{Limit} = \sum_{i} (EL_i)(F_i)(k_i)$$

where:

i = identifies each engine in the AECP.

EL_i = the NOx emission limit from Section 5.2 for each engine.

F_i = the actual total fuel used by the engine during the seven (7) consecutive calendar day period.

k_i = a constant used to convert an engine's fuel use and NOx emission limit to the amount of NOx emitted. k_i is dependent on the engine and the pollutant emitted. Calculation of k_i shall be accomplished using 40 CFR Part 60, Appendix A, Method 19, or an equivalent method approved by EPA, ARB and the APCO.

8.1.3 Only engines in the AECP which were operated during the seven (7) consecutive calendar day period shall be included in the calculations of AE_{Limit} and AE_{Actual}.

8.1.4 The operator shall, at least one time each day the AECP is used, calculate and record the actual aggregate NOx emissions (AE_{Actual}) and the aggregate NOx emission limit (AE_{Limit}) for the preceding seven (7) consecutive calendar day period.

8.2 The operator shall establish a NOx emission factor limit for each engine. The established NOx emission factor of an engine shall be no less than the NOx emission factor of the engine from the most recent source test conducted pursuant to Section 6.3 and approved by the APCO. The operator shall not operate an AECP engine in such a manner that NOx emissions exceed the established NOx emission factor of the engine.

8.3 The operator shall submit the AECP to the APCO at least 18 months before compliance with the emission limits in Section 5.2 is required. The AECP shall:

8.3.1 Not be implemented prior to APCO approval.

8.3.2 Be enforceable on a daily basis by the District.

8.3.3 Contain any information necessary to determine eligibility of the engines for alternative emission control, including, but not limited to:

8.3.3.1 A list of engines subject to the AECP. All engines in an AECP shall be under the operational control of a single operator and shall be located at a single stationary source,

8.3.3.2 The NOx emission factor established by the engine operator for each engine pursuant to Section 8.2, and

8.3.3.3 The estimated aggregate NOx emissions calculated according to Section 8.1.2.

8.3.4 Present the methodology for determining equivalency of actual NOx emissions under the proposed AECP as compared to the estimated NOx emissions allowed by this rule.

8.3.5 Detail the method of recording and verifying daily compliance with the AECP.

8.3.6 Demonstrate to the satisfaction of the APCO that the difference between the NOx emission limits of this rule and any lower actual NOx emissions will not be used to increase emissions from the same or another source.

8.3.7 Demonstrate that the engines subject to the requirements of Section 5.2 are in compliance with or on an approved schedule for compliance with all applicable District rules.

8.4 The operator shall submit an updated or modified AECP for approval by the APCO prior to any of the following:

8.4.1 Modification of the engine(s) which would require an Authority-to-Construct;

8.4.2 When new or amended rules are adopted which regulate the emissions from the engines; or

8.4.3 When the NOx emission factor established by the engine operator for an engine pursuant to Section 8.2 is modified.

8.5 In addition to the records kept pursuant to Section 6.2, the operator shall maintain records, on a daily basis, of the parameters needed to demonstrate compliance with the applicable NOx emission limits when operating under the AECP. These records shall be retained for at least five years, shall be readily available, and be made available to the APCO upon request. The records shall include, but are not limited to, the following for each engine unless otherwise indicated:

8.5.1 Total hours of operation,

8.5.2 Type and quantity (cubic feet of gas or gallons of liquid) of fuel used,

8.5.3 The actual NOx emissions limits to be included in the calculation of AE_{Actual} pursuant to Section 8.1.1,

8.5.4 The actual aggregate NOx emissions (AE_{Actual}) for all the engines in the AECP calculated pursuant to Section 8.1.1,

8.5.5 The estimated NOx emissions limits to be included in the calculation of AE_{Limit} pursuant to Section 8.1.2,

8.5.6 The estimated aggregate NOx emissions (AE_{Limit}) for all the engines in the AECP calculated pursuant to Section 8.1.2,

8.5.7 The comparison of the actual aggregate NOx emissions (AE_{Actual}) for all the engines in the AECP and 90 percent of the estimated aggregate NOx emissions (AE_{Limit}) for all the engines in the AECP to demonstrate compliance with Section 8.1, and

8.5.8 Any other parameters needed to demonstrate daily compliance with the applicable NOx emission limits when operating under the AECP.

8.6 For the purpose of determining the quantity of spark-ignited engines in compliance pursuant to Section 7.5, a spark-ignited engine in an AECP shall not be considered to be in compliance until all spark-ignited engines in the AECP that have been designated to meet more stringent NOx emission factors pursuant to Section 8.2 are in compliance with the rule.

9.0 Exhaust Control System Certification Requirements

9.1 To be considered for APCO certification, the manufacturer or operator shall comply with all of the following requirements:

9.1.1 Certification shall be based upon the emission source testing results of a specific exhaust control system,

9.1.2 A source testing protocol shall be submitted in accordance with the provisions of Rule 1081 (Source Sampling) for approval by the APCO prior to conducting the source test. The source testing protocol approved by the APCO shall be strictly adhered to during certification source testing,

9.1.3 Source testing shall be conducted over the range of operating parameters for which the unit(s) will be operated,

9.1.4 The source testing results shall demonstrate compliance with the emission limits of this rule for each model of exhaust control system(s) to be certified,

9.1.5 The source testing procedure and reports shall be prepared by an ARB-approved independent testing laboratory, and shall contain all the elements identified in the APCO-approved source testing protocol,

9.1.6 Source testing shall be conducted no more than 90 days prior to the date of submission of request for certification by the APCO, and

9.1.7 Any additional supporting information required by the APCO to address other performance parameters.

9.2 The manufacturer or operator requesting certification shall submit to the APCO the following information:

9.2.1 Copies of the source testing results conducted pursuant to the requirements of Section 9.1, and other pertinent technical data to demonstrate compliance with the emission limits of this rule,

9.2.2 The applicant shall sign and date the statement attesting to the accuracy of all information in the statement, and

9.2.3 Name and address of the exhaust control system manufacturer or operator, brand name of the exhaust control unit, model number, and description of model of system(s) being certified.

9.3 The APCO will only approve an application for certification to the extent that the requirements of Sections 9.1 through 9.2 are met and the source testing results demonstrate that the emission limits of this rule are met.

9.4 The APCO-approved certification is valid only for the range of operating parameters and conditions for which certification is issued.

9.5 The APCO shall publish a list of certified exhaust control systems after the certification process is completed.

RULE 4703 STATIONARY GAS TURBINES

(Adopted August 18, 1994)(Amended March 16, 1995; February 15, 1996; October 16, 1997; April 25, 2002; August 17, 2006; September 20, 2007)

1.0 Purpose

The purpose of this rule is to limit oxides of nitrogen (NOx) emissions from stationary gas turbine systems.

2.0 Applicability

The provisions of this rule apply to all stationary gas turbine systems, which are subject to District permitting requirements, and with ratings equal to or greater than 0.3 megawatt (MW) or a maximum heat input rating of more than 3,000,000 Btu per hour, except as provided in Section 4.0.

3.0 Definitions

3.1 Auxiliary Burner: any fuel burning device that increases the heat content of exhaust gas from a gas turbine. Duct burners, fired waste heat boilers, and fired heat recovery steam generators are considered auxiliary burners.

3.2 Bypass Transition Period: the duration of time that a gas turbine's operation transitions between the heat recovery steam generator and bypass exhaust stacks, provided all of the following conditions are met:

3.2.1 The selective catalytic reduction catalyst is not within the required temperature range or the required ammonia saturation level has not yet been achieved.

3.2.2 The duration of a bypass transition period shall not exceed two hours.

3.2.3 NOx emissions shall not exceed 15 ppmvd, corrected to 15% O_2, averaged over two (2) hours.

3.2.4 The applicable CO Compliance Limits in Section 5.0 shall not be exceeded.

3.3 Combined Cycle unit: any stationary gas turbine which recovers heat from the gas turbine exhaust gases to heat water, generate steam, or preheat the inlet combustion air to the gas turbine.

3.4 Commercially Available: any control technology or equipment which is offered by at least one vendor and guaranteed by the vendor to achieve the required emission control performance for a regular or full-scale operation within the United States.

3.5 Compliance Limit: maximum allowable oxides of nitrogen (NOx) or carbon monoxide (CO) emission levels.

3.6 Control System Operating Parameters: operating parameters that the APCO deems necessary to analyze when determining compliance, such as ammonia and exhaust gas flow rates and exhaust gas temperature for selective catalytic reduction; or humidity, water injection rate, exhaust gas flow rate and temperature for water injection.

3.7 Dry Low-NOx Combustion Technology (DLN): any turbine combustor design which uses multiple staging, air/fuel premixing or other modifications to achieve lower levels of NOx emissions as compared to conventional combustors.

3.8 Emergency Standby Unit: a stationary gas turbine system that is limited by permit condition to be operated only as a mechanical or electrical power source for a facility when the primary power source for a facility has been rendered inoperable due to failure beyond the reasonable control of the operator, except due to power interruption pursuant to an interruptible power supply agreement. Electricity generated by such a unit cannot be sold.

3.9 Gas Turbine: an internal combustion engine consisting of a compressor, a combustor, and a power turbine, that is gas and/or liquid fueled, with or without power augmentation. Two or more gas turbines powering one shaft shall be treated as one gas turbine.

3.10 Gas Fuel: any of the following fuels or fuels containing any of the following fuels: natural gas, LPG, propane, digester gas, and landfill gas.

3.11 HHV: higher heating value of fuel.

3.12 LHV: lower heating value of fuel.

3.13 Liquid Fuel: any of the following fuels: kerosene, jet fuel, and distillate fuel oils. Sulfur content of the fuel oil shall be less than 0.05 percent, by weight.

3.14 Major Overhaul: taking a stationary gas turbine out of service to replace or repair major components of the turbine. Major overhaul does not include taking a stationary gas turbine out of service exclusively to install emission control equipment.

3.15 Measured CO Emissions Concentration: measured carbon monoxide emissions corrected to 15 percent oxygen on a dry basis, ppm.

3.16 Measured NOx Emissions Concentration: measured oxides of nitrogen emissions corrected to 15 percent oxygen on a dry basis, ppm.

3.17 Non-Steady State Period: for a 3 MW to 10 MW pipeline gas turbine, any 15-minute period in which the fuel rate to the turbine differs from the reference fuel rate by more than +/- 3,000 standard cubic feet per 15-minute period. For this rule, a 15-minute Non-Steady State Period shall be zero (0) to 15 minutes after the hour, 15 to 30 minutes after the hour, 30 to 45 minutes after the hour, or 45 to 60 minutes after the hour.

3.18 Pipeline Gas Turbine: a simple cycle stationary gas turbine used to transport gases or liquids in a pipeline.

3.19 Power Augmentation: an 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.

3.20 Primary Re-ignition Period: the duration of time during which a gas turbine is operated at less than rated capacity in order to reset the DLN combustion system following a primary re-ignition, provided all of the following conditions are met:

3.20.1 The duration of a primary re-ignition period shall not exceed one hour.

3.20.2 NOx emissions shall not exceed 15 ppmvd, corrected at 15% O_2, averaged over one (1) hour.

3.20.3 CO emissions shall not exceed 25 ppmvd, corrected at 15% O_2.

3.21 Public Service Unit: a stationary gas turbine system used to generate electricity for sale or for use in serving the public.

3.22 Rating: the continuous megawatt (MW) rating or mechanical equivalent by a manufacturer for a gas turbine without power augmentation.

3.23 Reduced Load Period: the time during which a gas turbine is operated at less than rated capacity in order to change the position of the exhaust gas diverter gate, not to exceed one hour.

3.24 Reference Fuel Rate: the fuel rate, to a turbine, measured during the preceding 15-minute period.

3.25 SCR: selective catalytic reduction.

3.26 Shutdown: the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off.

3.27 Simple Cycle unit: any stationary gas turbine which does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, to heat water, or to generate steam.

3.28 Standard Conditions: defined in Rule 1020 (Definitions).

3.29 Start-up: the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation.

3.30 Stationary Gas Turbine: a gas turbine that is attached to a foundation, or a portable gas turbine that is operated at a facility for more than 90 days in any 12-month period.

3.31 Stationary Gas Turbine System: a stationary gas turbine, or a stationary gas turbine and the associated auxiliary burner.

3.32 Steady State Period: for a 3 MW to 10 MW pipeline gas turbine, the period which commences after any two consecutive 15-minute periods in which the fuel rate to the turbine does not differ from the reference fuel rate by more than +/- 3,000 standard cubic feet per 15-minute period and ends when a non-steady state period begins.

3.33 Transitional Operation Period: any of the following periods: bypass transition period, primary re-ignition period, reduced load period, start-up or shutdown.

3.34 Unit: a stationary gas turbine system.

4.0 Exemptions

4.1 The provisions of this rule, with the exception of Section 6.1, shall not apply to stationary gas turbine systems operated under the following conditions:

4.1.1 Laboratory units used in research and testing for the advancement of gas turbine technology,

4.1.2 Units limited by permit condition to be operated exclusively for firefighting and/or flood control.

4.2 The provisions of this rule, with the exception of Section 6.1 and the record keeping provisions of Section 6.2, shall not apply to emergency standby units limited by permit condition to operate less than 100 hours per calendar year for maintenance and testing purposes.

5.0 Requirements

5.1 NOx Emissions

NOx emissions concentrations measured for compliance with Section 5.0 shall be averaged, using consecutive 15-minute sampling periods, over a three-hour period. NOx emissions concentrations shall be measured in accordance with the applicable test method in Section 6.4 or, if continuous emission monitors are used, all applicable requirements of 40 CFR Part 60 as detailed in Section 6.2. Any variations from these measurement requirements are subject to APCO and EPA approval prior to implementation.

5.1.1 Tier 1 NOx Compliance Limits

The owner or operator of any stationary gas turbine system shall not operate such unit under load conditions, except as allowed by Section 5.3, which results in the measured emissions concentration exceeding the applicable emission limits below, according to the Tier 1 Compliance Schedules listed in Section 7.0.

Table 5-1: Tier 1 NOx Compliance Limits

Stationary Gas Turbine Rating	Operating hours per year	NOx Compliance Limit, ppmv at 15% O_2	
		Gas	Oil
4 MW and greater	< 877	42	65
> 0.3 MW but < 10.0 MW	≥ 877	42	65
10.0 MW and greater, without SCR	≥ 877	15 x EFF/25	42 x EFF/25
10.0 MW and greater, with SCR	≥ 877	9 x EFF/25	25 x EFF/25
General Electric Frame 7 with Quiet Combustors	Not applicable	18 x EFF/25	42 x EFF/25
Solar Saturn 1100 horsepower gas turbine powering centrifugal compressor	Not applicable	50	50

Where EFF (efficiency) is the higher of EFF_1 or EFF_2 below. An EFF that is less than 25 shall be assigned a value of 25.

$$EFF_1 = \frac{3412\ Btu/kW\text{-}hr}{Actual\ Heat\ Rate\ at\ HHV\ (Btu/kW\text{-}hr)} \times 100\%$$

EFF_1 is the demonstrated percent efficiency of the gas turbine only, as calculated without consideration of any downstream energy recovery from the actual heat rate (Btu/KW-hr); corrected to HHV and standard conditions, as measured at peak load for that facility.

$$EFF_2 = EFF_{mfr} \times \frac{LHV}{HHV}$$

EFF_2 is EFF_{mfr} after correction from LHV to HHV at peak load for that facility. EFF_{mfr} is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution control equipment at LHV.

5.1.2 Tier 2 NOx Compliance Limits

The owner or operator of any stationary gas turbine system shall not operate such unit under load conditions, except as allowed by Section 5.3, which results in the measured emissions concentration exceeding the applicable emission limits below, according to the Tier 2 Compliance Schedules listed in Section 7.2.

Table 5-2: Tier 2 NOx Compliance Limits

Turbine Classification Rating	Compliance Option (see Section 7.2)	NOx Compliance Limit, ppmvd at 15% O_2	
		Gas Fuel	Liquid Fuel
a) Less than 2.0 MW Solar Saturn, driving a centrifugal compressor	Standard	50	50
b) No greater than 10 MW, if a DLN System is commercially available for the specific unit, as of April 30, 2003.	Standard	25	65
c) No greater than 10 MW, if a DLN System is not commercially available for the specific unit, as of April 30, 2003.	Standard	35	65
d) Greater than 10 MW, Combined cycle.	Standard	5	25
	Enhanced	3	25
e) Greater than 10 MW, Simple cycle, and permit condition for greater than 877 hrs/yr operation.	Standard	5	25
	Enhanced	3	25
f) Greater than 10 MW, Simple cycle, and permit condition for no greater than 877 hr/yr operation.	Standard	25	42
	Enhanced	5	25

5.1.2.1 For units with a Standard Option and an Enhanced Option shown in Table 5-2, the operator shall choose which option will apply and shall demonstrate and maintain compliance with that NOx Compliance limit according to the applicable Tier 2 Compliance Schedule shown in Section 7.2. Units failing to demonstrate compliance with the applicable Standard Option limit by the applicable Standard Option Compliance Date, shall be required to meet the Enhanced Option Limit by the applicable Enhanced Option Compliance Date.

5.1.2.2 Any stationary gas turbine system equipped with a NOx emission control device which results in emission reductions of at least 95%, shall be considered to meet the Tier 2 NOx Compliance Limit. Percent emission reductions, if used to comply with Section 5.1.2, shall be calculated as follows:

5.1.2.2.1 For units with exhaust gas NOx control devices, percent reduction shall be calculated using emission samples taken at the inlet and outlet of the control device.

5.1.2.2.2 For units without exhaust gas NOx control devices and for units with an exhaust gas NOx control device in combination with a second emission control device or technique, percent reduction shall be based on source test results for the uncontrolled unit and the unit after the control device(s) or technique(s) has been employed. When representative source sampling prior to the application of an emissions control technology or technique is not available, the APCO may approve the use of manufacturer's uncontrolled emissions information or source sampling from a similar, uncontrolled unit.

5.1.3 Tier 3 NOx Compliance Limits

5.1.3.1 The owner or operator of any stationary gas turbine system listed in Table 5-3 shall not operate such unit under load conditions, except as allowed by Section 5.3, which results in the measured emissions concentration exceeding the applicable emission limits in Table 5-3, according to the Tier 3 Compliance Schedule listed in Section 7.3.

Table 5-3: Tier 3 NOx Compliance Limits

Turbine Classification Rating	NOx Compliance Limit, ppmvd at 15% O_2	
	Gas Fuel	Liquid Fuel
a) Less than 3 MW.	9	25
b) 3 MW to 10 MW pipeline gas turbine.	8 during steady state and 12 during non-steady state	25
c) 3 MW to 10 MW and permit condition for less than 877 hrs/yr operation and not listed above.	9	25
d) 3 MW to 10 MW and permit condition for 877 hrs/yr operation or greater and not listed above.	5	25
e) Greater than 10 MW, Simple cycle, and permit condition for no greater than 200 hrs/yr operation, except as provided in Section 5.1.3.3.	25	42
f) Greater than 10 MW, Simple cycle, and permit condition for greater than 200 hrs/yr operation but no greater than 877 hrs/yr operation.	5	25

5.1.3.2 Any stationary gas turbine system equipped with a NOx emission control device which results in emission reductions of at least 95%, shall be considered to meet the Tier 3 NOx Compliance Limit. Percent emission reductions, if used to comply with Section 5.1.3, shall be calculated as follows:

5.1.3.2.1 For units with exhaust gas NOx control devices, percent reduction shall be calculated using emission samples taken at the inlet and outlet of the control device.

5.1.3.2.2 For units without exhaust gas NOx control devices and for units with an exhaust gas NOx control device in combination with a second emission control device or

technique, percent reduction shall be based on source test results for the uncontrolled unit and the unit after the control device(s) or technique(s) has been employed. When representative source sampling prior to the application of an emissions control technology or technique is not available, the APCO may approve the use of manufacturer's uncontrolled emissions information or source sampling from a similar, uncontrolled unit.

5.1.3.3 Operators of turbines subject to the provisions of Table 5-3, subsection (e), shall also comply with the following provisions:

5.1.3.3.1 Units may be operated in response to a California Independent System Operator (ISO) - declared Stage One, Two, or Three Emergency, or a Transmission Emergency, or a Turlock Irrigation District (TID) - declared Alert Level One, Two, or Three Energy Emergency, provided the unit is located in the local area transmission system of the emergency. The operations for ISO - declared or TID - declared emergencies hours shall not count against the unit's 200 hrs/year operating limit.

5.1.3.3.2 On and after January 1, 2009, no later than April 1 each year, an operator, with a unit operating during an ISO - declared or TID - declared emergency in accordance with Section 5.1.3.3.1, shall pay a fee to the District. That fee will be calculated according to the following formula:

Fee = ISO or TID hrs/yr x EF x FR

Where:

ISO or TID = Total hours operated in response to an ISO - declared or TID - declared emergency, during the preceding calendar year.

EF = The unit's emission factor, which is equal to the permitted emission rate of NOx, in lb/hr, divided by 2,000 lb/ton.

FR = The fee rate, which shall be $75,000 per ton of NOx until December 31, 2014 and shall be $100,000 per ton of NOx, thereafter.

5.1.3.3.3 Except as provided in Section 6.5.2, in no event shall total operations, for any purpose, exceed 877 hours in any calendar year. Any operation of such units in excess of 877 hrs/year shall require the operator to comply with the emission limit of Table 5-2, subsection (e) – Standard Compliance Option, according to the compliance schedule in Section 6.5.1.

5.1.3.3.4 Any fees received by the District, pursuant to Section 5.1.3.3.2 shall be deposited into the District's account to fund air quality improvement projects.

5.2 CO Emissions

The owner or operator of any stationary gas turbine system shall not operate such unit under load conditions, except as allowed by Section 5.3, which results in the measured CO emissions concentration exceeding the compliance limits listed below:

Table 5-4 : CO Compliance Limits

Stationary Gas Turbine	CO Compliance Limit, ppmv at 15% O_2
Units not identified below	200
General Electric Frame 7	25
General Electric Frame 7 with Quiet Combustors	52
Less than 2.0 MW Solar Saturn gas turbine powering centrifugal compressor	250

5.3 Transitional Operation Periods

On and after the date a unit is required, pursuant to Section 7.0, to be in compliance with the emission limits requirements of Section 5.1 or Section 5.2, the applicable emission limits of Section 5.1 and Section 5.2 shall not apply during a transitional operation period, as defined in Section 3.0, provided an operator complies with the applicable requirements specified in Sections 5.3.1 and 5.3.2.

5.3.1 Except as provided in Section 5.3.3, the operator shall meet the following conditions:

5.3.1.1 The duration of each start-up or each shutdown shall not exceed two hours.

5.3.1.2 For each bypass transition period, the requirements specified in Section 3.2 shall be met.

5.3.1.3 For each primary re-ignition period, the requirements specified in Section 3.20 shall be met.

5.3.1.4 Each reduced load period shall not exceed one hour.

5.3.2 The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during each transitional operation period.

5.3.3 Notwithstanding the requirement of Section 5.3.1, an operator may submit an application for a Permit to Operate condition to allow more than the duration of time specified in Section 5.3.1 for each transitional operation period provided the operator meets all of the conditions specified in Section 5.3.3.1 through Section 5.3.3.2.

5.3.3.1 The maximum allowable duration of a transitional operation period will be determined by the APCO, ARB, and EPA. An operator seeking approval pursuant to Section 5.3.3 shall submit a written request and supporting information to the APCO. The District shall evaluate the request and if approved by the APCO, the District shall provide EPA and ARB with a copy of the evaluation and shall request EPA and ARB approval. The District evaluation and the APCO request shall be deemed approved unless EPA or ARB objects to such approval in writing within 45 days of the receipt of the APCO request.

5.3.3.2 At a minimum, a justification for the increased duration shall include the following:

5.3.3.2.1 A clear identification of the control technologies or strategies to be utilized; and

5.3.3.2.2 A description of what physical conditions prevail during the period that prevent the controls from being effective; and

5.3.3.2.3 A reasonably precise estimate as to when the physical conditions will have reached a state that allows for the effective control of emissions; and

5.3.3.2.4 A detailed list of activities to be performed during the period and a reasonable explanation for the length of time needed to complete each activity; and

5.3.3.2.5 A description of the material process flow rates and system operating parameters, etc., the operator plans to evaluate during the process optimization; and an explanation of how the activities and process flow affect the operation of the emissions control equipment; and

5.3.3.2.6 The basis for the requested additional duration.

5.4 For existing facilities, a replacement unit installed for the sole purpose of complying with the requirements of this rule shall be considered to be an emission control technique and may be exempt from the Best Available Control Technology (BACT) and Offsets requirements of District Rule 2201 (New and Modified Stationary Source Review Rule) provided that all other requirements of Rule 2201 are met.

6.0 Administrative Requirements

6.1 Emission Control Plan

The owner or operator of any existing stationary gas turbine system, unless exempted in Section 6.1.5, shall submit, to the APCO for approval, an emissions control plan of all actions, including a schedule of increments of progress, which will be taken to comply with the requirements of the applicable NOx Compliance Limit in Section 5.0 and Compliance Schedule in Section 7.0.

6.1.1 Such plan shall contain a list that provides the following for each stationary gas turbine system:

6.1.1.1 Permit or identification number,
6.1.1.2 Name of gas turbine manufacturer,
6.1.1.3 Gas turbine model designation,
6.1.1.4 Rated shaft power output, (MW),
6.1.1.5 Name of auxiliary burner manufacturer,
6.1.1.6 Auxiliary burner model designation,
6.1.1.7 Rated heat input of the auxiliary burner, (MMBtu/hr)
6.1.1.8 Type of liquid fuel and/or type of gaseous fuel,
6.1.1.9 Fuel consumption (cubic feet of gas or gallons of liquid) of turbine and/or auxiliary burner,
6.1.1.10 Hours of operation in the previous one-year period,
6.1.1.11 Heat rate (Btu/KW-hr), corrected to HHV for each type of fueling (liquid/gas),

6.1.1.12 HHV for each fuel.

6.1.2 Such plan shall contain a list of all stationary gas turbine systems to be controlled, identifying the type of emission control to be applied to each unit, applicable emission standard from Section 5.0, and documentation showing current emissions of oxides of nitrogen.

6.1.3 Such plan shall contain support documentation for any systems exempt under the provisions of Section 4.0.

6.1.4 Such plan shall identify the applicable compliance schedule for each unit, as specified in Section 7.0. Each emission control plan for a unit subject to Section 7.2.2 or Section 7.3 shall include the owner/operator's overhaul schedule.

6.1.5 The owner or operator of any existing stationary gas turbine system shall be exempt from the requirements of Section 6.1 provided all such turbines under his ownership or control have NOx and CO emissions limits which are shown on the current Permit to Operate and which do not exceed the applicable Compliance Limits in Section 5.0.

6.2 Monitoring and Recordkeeping

The owner or operator of any stationary gas turbine system subject to the provisions of this rule shall perform the following actions:

6.2.1 Except for units subject to Section 6.2.3, for turbines with exhaust gas NOx control devices, the owner or operator shall either install, operate, and maintain continuous emissions monitoring equipment for NOx and oxygen, as identified in Rule 1080 (Stack Monitoring), or install and maintain APCO-approved alternate monitoring consisting of one or more of the following:

6.2.1.1 periodic NOx emission concentrations,
6.2.1.2 turbine exhaust oxygen concentration,
6.2.1.3 air-to-fuel ratio,
6.2.1.4 flow rate of reducing agents added to turbine exhaust,
6.2.1.5 catalyst inlet and exhaust temperature,
6.2.1.6 catalyst inlet and exhaust oxygen concentration,
6.2.1.7 other operational characteristics.

6.2.2 Except for units subject to Section 6.2.3, for turbines without exhaust-gas NOx control devices and without continuous emissions monitoring equipment, the owner or operator shall monitor operational characteristics recommended by the turbine manufacturer or emission control system supplier, and approved by the APCO.

6.2.3 For units 10 MW and greater that operated an average of more than 4,000 hours per year over the last three years before August 18, 1994, the owner or operator shall monitor the exhaust gas NOx emissions. The NOx monitoring system shall meet EPA requirements as specified in 40 CFR Part 60 App. B, Spec. 2, 40 CFR Part 60 App. F, and 40 CFR Part 60.7 (c), 60.7 (d), and 60.13, or other systems that are acceptable to the EPA. The owner or operator shall submit to the APCO information demonstrating that the emission monitoring system has data gathering and retrieval capability.

6.2.4 The owner or operator shall maintain all records for a period of five years from the date of data entry and shall make such records available to the APCO upon request.

6.2.5 The owner or operator shall submit to the APCO, before issuance of the Permit to Operate, information correlating the control system operating parameters to the associated measured NOx output. This information may be used by the APCO to determine compliance when there is no continuous emission monitoring system for NOx available or when the continuous emission monitoring system is not operating properly.

6.2.6 The owner or operator shall maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local start-up time and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used (liquid/gas).

6.2.7 The owner or operator shall maintain a stationary gas turbine system operating log for units exempt under Section 4.2 that includes, on a daily basis, the actual local start-up time and stop time, total hours of operation, and cumulative hours of operation to date for the calendar year.

6.2.8 The operator performing start-up or shutdown of a unit shall keep records of the duration of start-up or shutdown.

6.2.9 On and after January 1, 2008, an operator of a unit subject to Section 5.1.3.3 shall also keep the following records:

6.2.9.1 A stationary gas turbine system operating log, which identifies the date, start time, and end time that the unit was operated pursuant to Section 5.1.3.3,

6.2.9.2 A copy of the ISO or TID emergency declaration for that operation and

6.2.9.3 A copy of the information used to determine the applicable Annual Emission Fee.

6.2.10 The operator of a unit subject to Section 6.5.2 shall identify in the stationary gas turbine system operating log the date and start time and end time that the unit was operated pursuant to Section 6.5.2 and keep a copy of the emergency declaration.

6.2.11 The operator of a unit shall keep records of the date, time and duration of each bypass transition period and each primary re-ignition period.

6.2.12 The operator of a unit subject to subsection (b) of Table 5-3 shall keep records of the date, time and duration of each steady state period and non-steady state period and the quantity of fuel used during each period.

6.3 Compliance Testing

6.3.1 The owner or operator of any stationary gas turbine systems subject to the provisions of Section 5.0 of this rule shall provide source test information annually regarding the exhaust gas NOx and CO concentrations, and, if used as a basis for Tier 1 emission limit calculations, the demonstrated percent efficiency (EFF) of the stationary gas turbine, or, for turbines complying with Section 5.1.2.2 or Section 5.1.3.2, the control efficiency of the emission control device.

6.3.2 The owner or operator of any stationary gas turbine system operating less than 877 hours per year shall provide source test information biennially regarding the exhaust gas NOx concentrations at standard conditions and if used as a basis for Tier 1 emission limit calculations, the percent efficiency (EFF) of the stationary gas turbine.

6.3.3 The owner or operator of any unit with an intermittently operated auxiliary burner shall demonstrate compliance with the auxiliary burner both on and off.

6.4 Test Methods

The following test measures shall be used unless otherwise approved by the APCO and EPA.

6.4.1 Oxides of nitrogen emissions for compliance tests shall be determined by using EPA Method 7E or EPA Method 20.

6.4.2 Carbon monoxide emissions for compliance tests shall be determined by using EPA Test Methods 10 or 10B.

6.4.3 Oxygen content of the exhaust gas shall be determined by using EPA Methods 3, 3A, or 20.

6.4.4 HHV and LHV of distillate fuels shall be determined by using:

6.4.4.1 ASTM D240-87, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, or

6.4.4.2 ASTM D2382-88, Standard Test Method for Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-precision Method).

6.4.5 HHV and LHV of gaseous fuels shall be determined by using:

6.4.5.1 ASTM D3588-91, Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density (Specific Gravity) of Gaseous Fuels, or

6.4.5.2 ASTM 1826-88, Standard Test Method for Calorific (Heating) Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, or

6.4.5.3 ASTM 1945-81, Standard Method for Analysis of Natural Gas by Gas Chromatography.

6.4.6 Demonstrated percent efficiency of the stationary gas turbine shall be determined using the facility instrumentation for gas turbine fuel consumption and power output. Power output values used to determine gas turbine efficiency shall be either:

6.4.6.1 the electrical power output of the gas turbine, provided the gas turbine generates electricity; or

6.4.6.2 the mechanical power output of the gas turbine, provided the gas turbine does not generate electricity.

6.5 Exempt and Emergency Standby Units

6.5.1 The owner or operator of any unit with an hour-per-year operation limit pursuant to Sections 4.2 or 5.0 must notify the APCO within seven days if the hour-per-year limit is exceeded. Except as provided in Section 6.5.2, if the hour per-year-limit is exceeded, the exemption shall be permanently withdrawn. Within 30 days after the exceedance, the owner or operator must submit a permit application detailing a plan to meet the appropriate compliance limit within 24 months. Included in this permit application, the owner or operator must submit an emission control plan including a schedule of increments of progress for the installation of the required control equipment. This schedule shall be subject to the review and approval of the APCO.

6.5.2 A public service unit operating during a state of emergency, when such emergency is declared by proclamation of the Governor and when the unit is located in the specific geographic location identified in the proclamation, shall be excluded from loss of exemption due to exceeding the hour-per-year limit for the operation during the state of emergency. If the unit exceeds the hour-per-year limit based solely on operation outside of the state of emergency, then loss of exemption shall apply according to Section 6.5.1.

7.0 Compliance Schedule

7.1 Tier 1 Compliance Schedule

All owner/operators shall be in compliance with the applicable provisions of Sections 5.0 and 6.0 on and after August 18, 2000.

7.2 Tier 2 Compliance Schedule

Owners or operators of all applicable stationary gas turbine systems shall submit the emission control plan required by Section 6.1 to the District by April 30, 2003. All owner/operators shall demonstrate and maintain compliance with the applicable provisions of Sections 5.0 and 6.0 in accordance with the following Compliance Schedules:

7.2.1 Operators complying with the Standard Option of Table 5-2 shall demonstrate and maintain compliance by the applicable Compliance Date:

Table 7-1: Tier 2 Standard Option Compliance Schedule

Turbine Classification Rating	Compliance Date
a) Less than 2.0 MW Solar Saturn, driving a centrifugal compressor	April 25, 2002
b) No greater than 10 MW, if a DLN System is commercially available for the specific unit, as of April 30, 2003.	April 30, 2004
c) No greater than 10 MW, if a DLN System is not commercially available for the specific unit, as of April 30, 2003.	April 30, 2003
d) Greater than 10 MW, Combined Cycle.	April 30, 2004
e) Greater than 10 MW, Simple cycle, and permit condition for greater than 877 hrs/yr operation.	April 30, 2005
f) Greater than 10 MW, Simple cycle, and permit condition for no greater than 877 hr/yr operation.	April 30, 2003

7.2.2 Notwithstanding Table 7-1, for an operator with multiple units no greater than 10 MW which will comply with the 25 ppmv Standard DLN Option for those units,

7.2.2.1 By April 30, 2004, demonstrate full compliance on at least 62% of those units which will comply with the Standard DLN Option.

7.2.2.2 By April 30, 2005 or 30 days after the completion of the next Major Overhaul following April 30, 2004 whichever is earliest, demonstrate full compliance on all remaining units which will comply with the Standard DLN Option.

7.2.3 Notwithstanding Table 7-1, for an operator with multiple units greater than 10 MW, which will comply with the Standard Option for those units,

7.2.3.1 By April 30, 2004, demonstrate full compliance on at least 62% of those units which will comply with the Standard Option.

7.2.3.2 By April 30, 2005, or 30 days after the completion of the next Major Overhaul following April 30, 2004, whichever is earliest, demonstrate full compliance on all remaining units which will comply with the Standard Option.

7.2.4 Operators complying with the Enhanced Option of Table 5-2 shall demonstrate and maintain compliance by the earlier of either

7.2.4.1 April 30, 2008, or

7.2.4.2 within 90 days following the next Major Overhaul, if that overhaul occurs after April 30, 2004.

7.3 Tier 3 Compliance Schedule

Owners or operators of all stationary gas turbine systems subject to Section 5.1.3 (Tier 3) shall submit the emission control plan required by Section 6.1 to the District by January 1, 2009. All owner/operators shall demonstrate and maintain compliance with the applicable provisions of Section 4.0 on and after January 1, 2009. All owner/operators shall demonstrate and maintain compliance with the applicable provisions of Sections 5.0 and 6.0 in accordance with the following Compliance Schedules:

7.3.1 Operators with no more than two (2) units subject to Section 5.1.3 on September 20, 2007 shall demonstrate and maintain compliance by the earlier of either of the following dates (the compliance date for any particular unit shall be determined independently of any other unit):

7.3.1.1 October 1, 2011, or

7.3.1.2 Within 90 days following the next Major Overhaul on or after July 1, 2009.

7.3.2 Operators with more than two (2) units subject to Section 5.1.3 on September 20, 2007 shall demonstrate and maintain compliance in accordance with the following Compliance Schedule:

7.3.2.1 Within 90 days following the next Major Overhaul, any unit that is overhauled on or after July 1, 2009, and

7.3.2.2 By January 1, 2010, at least 25% of the total number of units on January 1, 2010 subject to Tier 3 Compliance Limits, and

7.3.2.3 By January 1, 2011, at least 62.5% of the total number of units on January 1, 2011 subject to Tier 3 Compliance Limits, and

7.3.2.4 By January 1, 2012, 100% of the total number of units on January 1, 2012 subject to Tier 3 Compliance Limits.

7.3.3 Operators of turbines subject to the provisions of Table 5-3, subsection (e), shall demonstrate and maintain compliance on and after January 1, 2008.

7.3.4 Permanent Removal of a Unit

In lieu of compliance with the emission limits of Section 5.1.3 (Tier 3), an owner of any unit may elect to permanently remove it from service. The owner of a unit who elects to permanently remove the unit from service shall comply with all of the following conditions:

7.3.4.1 Comply with all applicable requirements of this rule, except for the Section 5.1.3 (Tier 3) limits, until the unit is permanently removed from service.

7.3.4.2 Submit a letter to the APCO no later than July 1, 2009, stating the intent to permanently remove the unit from service.

7.3.4.3 Officially surrender the Permit-to-Operate to the APCO no later than January 1, 2012.

7.3.4.4 For the purposes of Section 7.3.4, emission reductions achieved by removal of a unit in lieu of compliance with the emission requirements of Section 5.1.3 (Tier 3) shall not be available for emission reduction credit (ERC).

8.0 Alternative Emission Control Plan (AECP)

8.1 General

The owner of two or more units may comply with Section 5.1 (or Section 5.2 for CO) by controlling units in operation at the same stationary source, or at two contiguous stationary sources, to achieve an aggregated NOx (or CO) emission factor no higher than 90 percent of the aggregated NOx (or CO) emission factor limit that would result if each unit in operation were individually in compliance with the applicable NOx (or CO) emission limits in Section 5.1 (or Section 5.2 for CO). An operator that is subject to the AECP requirements below shall also comply with the applicable requirements of Sections 5.0, 6.0, and 7.0.

8.2 Eligibility

A unit subject to Section 5.1 is eligible for inclusion in an AECP.

8.3 Exclusion

No unit subject to Section 4.0 shall be included in an AECP.

8.4 AECP Definitions

For the purposes of Section 8.0, the following definitions shall apply:

8.4.1 Aggregated NOx (or CO) emission factor limit: the sum of the NOx (or CO) emissions, over seven consecutive calendar days, that would result if all units in the AECP were in compliance with the ppmvd limits in Section 5.1 and operating at their actual firing rates, divided by the sum of the heat input of all units in the AECP over seven consecutive calendar days. Aggregated emission factor limit is calculated as:

$$L_A = \frac{\Sigma L_i F_i}{\Sigma F_i}$$

where: L_A is the aggregated NOx emission factor limit (ppmvd)

L_i is the applicable NOx (or CO) emission factor limit (ppmvd) specified in Section 5.1 (or Section 5.2 for CO) for each category of unit in the AECP,

F_i is the total heat input (hhv basis) of fuel (MMBtu) combusted in each unit during seven consecutive calendar days, and

i identifies each unit in the AECP.

8.4.2 Aggregated NOx (or CO) emission factor: the sum of the actual NOx (or CO) emissions during seven consecutive calendar days from all units in the AECP, divided by the sum of the heat input of all units in the AECP during seven consecutive calendar days. The aggregated emission factor is calculated as:

$$E_A = \frac{\Sigma E_i F_i}{\Sigma F_i}$$

where: E_A is the aggregated NOx (or CO) emission factor (ppmvd),

E_i is the NOx (or CO) emission factor (ppmvd) for each unit in the AECP, established and verified by source testing or continuous emission monitors,

F_i is the total heat input (hhv basis) of fuel (MMBtu) combusted in each unit during seven consecutive calendar days, and

i identifies each unit in the AECP.

8.5 AECP Requirements

8.5.1 The aggregated NOx (or CO) emission factor (E_A) shall not exceed 90 percent of the aggregated emission limit (L_A). The owner of any unit in an AECP shall notify the APCO within 24 hours of any violation of this section.

$$E_A <= 0.90 \times L_A$$

8.5.2 Only units in the AECP which were operated during seven consecutive calendar days shall be included in the calculations of the aggregated NOx (or CO) emission factor (L_A) and the aggregated NOx (or CO) emission limit (E_A).

8.5.3 During each seven consecutive calendar days of operation that the AECP is used, the operator shall calculate and record the aggregated NOx (or CO) emission factor (L_A) and the aggregate NOx (or CO) emission limit (E_A).

8.5.4 The operator shall submit a NOx (or CO) emission factor for each unit that is included in the AECP. The established NOx (or CO) emission factor of the unit shall be no less than the emission factor of the unit from the most recent source test conducted pursuant to Section 6.3 and approved by the APCO. The operator shall not operate any AECP unit in such a manner that the NOx (or CO) emissions exceed the established NOx (or CO) emission factor of the unit.

8.5.5 The operator shall submit the AECP, for approval by the APCO, by January 1, 2009 or at least 18 months before compliance with the applicable emission limits in Section 5.1 is required pursuant to Section 7.3, whichever is later. The AECP shall be submitted with an application for an Authority to Construct pursuant to complying with Section 7.3 as applicable. The operator shall obtain a written approval of the AECP from the APCO prior to implementation.

8.5.6 It is a violation of each and every day within the averaging period if a source does not meet the requirements of Section 8.5.1 of the AECP (have sufficient emission reductions, etc.) for that averaging period.

8.6 AECP Administrative Requirements

8.6.1 The AECP shall:

8.6.1.1 Contain all data, records, and other information necessary to determine eligibility of the units for alternative emission control, including but not limited to:

8.6.1.1.1 A list of units subject to alternative emission control,

8.6.1.1.2 Daily average and maximum hours of utilization for each unit,

8.6.1.1.3 Rated heat input of each unit, and

8.6.1.1.4 Fuel type for each unit.

8.6.1.2 Present the methodology for recordkeeping and reporting required by Sections 8.6.3 and 8.6.4.

8.6.1.3 Demonstrate that the aggregated emission factor will meet the requirements of Section 8.5.

8.6.1.4 Demonstrate that the schedule for achieving AECP NOx (or CO) emission levels is at least as expeditious as the schedule if applicable units were to comply individually with the applicable emission levels in Section 5.1 (or Section 5.2 for CO) and the increments of progress in Section 7.0.

8.6.2 Revision of AECP

Owners shall demonstrate APCO approval of the AECP prior to applying for a modification to said AECP.

8.6.3 AECP Recordkeeping

In addition to the records kept pursuant to Section 6.2, the operator shall maintain records, on a daily basis, of the parameters needed to demonstrate compliance with the applicable NOx (or CO) emission limits when operating under the AECP. The records shall be retained for at least five years and shall be made available to the APCO upon request. For each unit included in the AECP the owner shall maintain, for each day, the records that include, but are not limited to, the following:

8.6.3.1 The fuel type and amount used for each unit (F_i),

8.6.3.2 The actual emission factor for each unit (E_i),

8.6.3.3 The total emissions for all units ($\Sigma E_i F_i$),

8.6.3.4 The aggregated emission factor (E_A),

8.6.3.5 The aggregated emission factor limit (L_A), and

8.6.3.6 Any other parameters needed to demonstrate daily compliance with the applicable NOx (or CO) emissions when operating the units under the AECP.

8.6.4 Reporting and Annual Updates

Notifications of any violation pursuant to Section 8.5 shall include:

8.6.4.1 The name and location of the facility,

8.6.4.2 A list of applicable units,

8.6.4.3 The cause and expected duration of exceedance,

8.6.4.4 The amount of excess emissions, and

8.6.4.5 The proposed corrective actions and schedule.

8.7 Compliance Schedule

The AECP schedule for achieving reduced NOx (or CO) emission levels shall be at least as expeditious as the schedule if applicable units were to comply individually with the emissions limits specified in Sections 5.1 and 5.2 and the applicable compliance schedule required by Section 7.0.

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11/18/93

RULE 4802 SULFURIC ACID MIST (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Purpose

The purpose of this rule is to limit the sulfuric acid mist emissions from existing sulfuric acid production units. The rule specifies a maximum limit for the total mass of acid mist discharged per the amount of acid produced. A test procedure is specified for determining the sulfuric acid mist emissions.

2.0 Applicability

The provisions of this rule shall apply to any sulfuric acid production unit which was constructed or modified before August 17, 1971.

3.0 Definitions

3.1 Acid Mist: sulfuric acid mist which includes sulfuric acid liquid, sulfuric acid vapor, and sulfur dioxide (SO_2).

3.2 Existing Unit: any sulfuric acid production unit which was constructed or modified before August 17, 1971. (Note: Sulfuric acid production units constructed or modified on or after August 17, 1971 are subject to EPA New Source Performance Standards.)

3.3 Sulfuric Acid Production Unit: any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides, or acid sludge. (It does not include acid plants used as SO_2 control systems, chamber process plants, acid concentrators, or petroleum storage and transfer facilities.)

4.0 Requirements

4.1 No owner or operator of an existing sulfuric acid production unit shall allow the discharge into the atmosphere of effluent process gas containing more than 0.30 pounds per short ton of acid produced, the production being expressed as 100 percent sulfuric acid.

4.2 The owner or operator of an existing sulfuric acid production until which emits acid mist at a level less than the requirements of Section 4.1 shall not allow an increase in the emissions from the unit above the level currently being emitted, and all acid mist emissions control equipment shall be utilized to reduce acid mist emissions to lowest possible levels.

5.0 Test Procedure

5.1 Sulfuric acid mist emissions shall be determined according to Method 8 of 40 CFR 60 Appendix A.

RULE 4901 WOOD BURNING FIREPLACES AND WOOD BURNING HEATERS (Adopted July 15, 1993; Amended July 17, 2003; Amended October 16, 2008; Amended September 18, 2014; Amended June 20, 2019; Amended May 18, 2023)

1.0 Purpose

The purpose of this rule is to limit emissions of carbon monoxide and particulate matter from wood burning fireplaces, wood burning heaters, and outdoor wood burning devices.

2.0 Applicability

This rule applies to:

2.1 Any person who manufactures, sells, offers for sale, or operates a wood burning fireplace, wood burning heater, or outdoor wood burning device.

2.2 Any person who sells, offers for sale, or supplies wood intended for burning in a wood burning fireplace or wood burning heater.

2.3 Any person who sells or transfers a real property.

2.4 Any person who installs a wood burning fireplace or wood burning heater.

2.5 Section 5.7.3 shall not become applicable until the effective date of the federal Environmental Protection Agency's (EPA) final and full approval of the California State Implementation Plan (SIP) as meeting the contingency measure requirements of the Clean Air Act section 172(c)(9) for San Joaquin Valley for the applicable PM2.5 National Ambient Air Quality Standards (NAAQS).

3.0 Definitions

3.1 APCO: the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District.

3.2 ASTM: the American Society for Testing and Materials.

3.3 Consumer: any person other than a distributor or a retailer who buys a wood burning fireplace, wood burning heater, or outdoor wood burning device.

3.4 Distributor: any person other than a manufacturer or a retailer who sells, offers for sale, or supplies wood burning fireplaces, wood burning heaters, or outdoor wood burning devices to retailers or others for resale.

3.5 EPA: the United States Environmental Protection Agency.

3.6 EPA Certified: any wood burning heater that meets the standards set forth in Title 40 Code of Federal Regulations (CFR), Part 60, Subpart AAA and labeled pursuant to those regulations.

3.7 Garbage: any solid, semisolid, and liquid wastes generated from residential, commercial, and industrial sources, including trash, refuse, rubbish, industrial wastes, asphaltic products, manure, vegetable or animal solid or semisolid wastes, and other discarded solid or semisolid wastes.

3.8 Low Mass Fireplace: any fireplace and attached chimney, as identified in ASTM E 2558-7, "Determining Particulate Matter Emissions from Fires in Low Mass Wood-burning Fireplaces," that can be weighed (including the weight of the test fuel) on a platform scale.

3.9 Manufacturer: any person who constructs or imports a wood burning fireplace or wood burning heater.

3.10 Masonry Heater: any site-built or site-assembled, wood burning heating device constructed mainly of masonry materials in which the heat from intermittent fires burned rapidly in its firebox is stored in its structural mass for slow release to the site. Such wood burning heating devices must meet all federal requirements and be designed and constructed per specifications set forth in ASTM E 1602-3, "Guide for Construction of Solid Fuel Burning Masonry Heaters."

3.11 New Wood Burning Heater: any wood burning heater that has not been sold, supplied, or exchanged for the first time by the manufacturer, the manufacturer's distributor or agency, or a retailer.

3.12 Normal Operating Conditions: the operation of a wood burning fireplace or wood burning heater as defined in this rule, except when a fire is started. Startup of a new fire shall not exceed 15 consecutive minutes in any consecutive four-hour period.

3.13 NSPS: New Source Performance Standard. For purposes of this rule the NSPS is the Code of Federal Regulations, Part 60, Title 40, Subpart AAA.

3.14 Outdoor Wood Burning Device: any wood burning fireplace, or other device designed to burn wood, and that is located outside of a building or structure. This includes, but is not limited to, burn bowls, fire rings/pits, and chimineas. This does not include fire pits at state parks, national parks, or national forests.

3.15 Paints: any exterior and interior house and trim paints, enamels, varnishes, lacquers, stains, primers, sealers, undercoaters, roof coatings, wood preservatives, shellacs, and other paints or paint-like products.

3.16 Paint Solvents: any organic solvents sold or used to thin paints or clean up painting equipment.

3.17 Pellet-Fueled Wood Burning Heater: any wood burning heater manufactured for the purpose of heating a space and is intended to operate on pellet fuel.

3.18 Pellet Fuel: includes, but is not limited to, compressed sawdust, compressed paper products, and compressed forest residue, wood chips and other waste biomass, ground nut-hulls and fruit pits, corn, and cotton seed.

3.19 Permanently Inoperable: modified in such a way that a wood burning heater can no longer operate as a wood burning heater.

3.20 PM: particulate matter. PM2.5 has an aerodynamic diameter equal to or less than 2.5 microns. PM10 has an aerodynamic diameter equal to or less than 10 microns.

3.21 Real Property: the land itself and anything that is permanently affixed to the land, such as buildings and structures.

3.22 Remodel: a physical modification to a fireplace or chimney that impacts the physical structure of the fireplace or chimney. Aesthetic modifications that do not affect the physical structure of the fireplace are not considered a remodel, i.e. installing decorative stone/tile in front of fireplace.

3.23 Retailer: any person engaged in the sale of wood burning fireplaces, wood burning heaters, or outdoor wood burning devices directly to the consumer.

3.24 Seasoned Wood: wood of any species that has been sufficiently dried so as to contain 20 percent or less moisture by weight.

3.25 Treated Wood: wood of any species that has been chemically impregnated, painted, or similarly modified to improve resistance to insects or weathering.

3.26 Used Wood Burning Heater: any wood burning heater that has been used at least once, except wood burning heaters that have been used by retailers for the purpose of demonstration.

3.27 Waste Petroleum Product: any petroleum product other than gaseous fuels that has been refined from crude oil, and has been used, and, as a result of use, has been contaminated with physical or chemical impurities.

3.28 Wood Burning Fireplace: any permanently installed masonry or factory built wood burning device designed to be used with an air-to-fuel ratio greater than or equal to 35-to-1.

3.29 Wood Burning Heater: an enclosed, wood burning appliance capable of and intended for space heating (i.e. wood stove, pellet-fueled wood burning heater, or wood burning fireplace insert).

3.30 Wood Burning Season: for purposes of this rule, the months of November, December, January, and February.

4.0 Exemptions

The following devices are exempt from the provisions of this rule:

4.1 Devices that are exclusively gaseous-fueled.

4.2 Cookstoves, as described in Code of Federal Regulations 60.531.

4.3 Any burning occurring on the ground is open burning and is subject to requirements of District Rule 4103.

5.0 Requirements

5.1 Sale or Transfer of Wood Burning Heaters

5.1.1 New wood burning heaters

No person shall advertise, sell, offer for sale, supply, install, or transfer a new wood burning heater unless it is either:

5.1.1.1 EPA certified under the NSPS at time of purchase or installation and at least as stringent as EPA Phase II requirements,

5.1.1.2 A pellet-fueled wood burning heater that is exempt from EPA certification pursuant to requirements in the NSPS, until such time that amendments to the NSPS are finalized to remove exemptions for pellet-fueled wood burning heaters, then all new wood burning heaters must comply with Section 5.1.1.1.

5.1.2 Used wood burning heaters

No person shall advertise, sell, offer for sale, supply, install, or transfer a used wood burning heater unless it has been rendered permanently inoperable, satisfies requirements pursuant to Section 5.1.1, or is a low mass fireplace, masonry heater, or other wood-burning device of a make and model that meets all federal requirements and has been approved in writing by the APCO.

5.1.3 Public Awareness Information

Retailers selling or offering for sale new wood burning heaters shall supply public awareness information with each sale of a wood burning heater in the form of pamphlets, brochures, or fact sheets on the following topics listed in Sections 5.1.3.1 through 5.1.3.6. Public awareness information shall be subject to the review and approval of the APCO.

5.1.3.1 Proper installation, operation, and maintenance of the wood burning heater,

5.1.3.2 Proper fuel selection and use,

5.1.3.3 Health effects from wood smoke,

5.1.3.4 Weatherization methods for the home,

5.1.3.5 Proper sizing of wood burning heaters, and

5.1.3.6 Episodic Wood Burning Curtailment levels as defined in Section 5.7.

5.1.4 Sections 5.1.1 and 5.1.2 do not apply to wood burning heaters subject to Section 5.2.

5.2 Sale or Transfer of Real Property

5.2.1 Effective until December 31, 2019

5.2.1.1 No person shall sell or transfer any real property which contains a wood burning heater without first assuring that each wood burning heater included in the real property is:

5.2.1.1.1 EPA Phase II Certified or has a more stringent certification under the NSPS at time of purchase or installation, or

5.2.1.1.2 A pellet-fueled wood burning heater that was exempt from EPA Certification pursuant to requirements in the NSPS at the time of purchase or installation, or

5.2.1.1.3 Rendered permanently inoperable.

5.2.1.2 Upon the sale or transfer of real property, the seller shall provide to the recipient of the real property, and to the APCO, documentation of compliance with Section 5.2.1.1. Documentation shall be in the

form of a statement signed by the seller describing the type(s) of wood burning heater(s) included in the real property transaction, and any action taken to comply with Section 5.2.1.1. The APCO shall make blank forms available to the public for the purpose of fulfilling this requirement.

5.2.2 Effective on or after January 1, 2020

5.2.2.1 No person shall sell or transfer any real property which contains a wood burning heater without first assuring that each wood burning heater included in the real property:

5.2.2.2.1 Meets certification under the NSPS at time of purchase or installation and is at least as stringent as EPA Phase II requirements,

5.2.2.2.2 Is a pellet-fueled wood burning heater that was exempt from EPA certification pursuant to requirements in the NSPS at the time of purchase or installation, or

5.2.2.2.3 Is rendered permanently inoperable and removed from property.

5.2.2.2 Upon the sale or transfer of any residential real property in the San Joaquin Valley, the seller shall provide to the buyer of the real property and to the APCO, documentation certifying the following:

5.2.2.2.1 The type(s) and number(s) of wood burning heaters and wood burning fireplaces included in the real property transaction. If no wood burning heaters or wood burning fireplaces are included in the real property transaction, this should be documented.

5.2.2.2.2 Any action(s) taken to comply with Section 5.2.2.1.

5.2.2.2.3 Documents required by Section 5.2.2.2 shall be retained by the seller and shall again be made available to the APCO upon request.

5.3 Remodel of Wood Burning Fireplace or Chimney Where Total Cost Exceeds $15,000, Local Building Permit is Required, and Application for Building Permit is Submitted On or After January 1, 2020

5.3.1 A person may only install a gas-fueled, electric, exempt, or EPA certified

wood burning heater that meets requirements of NSPS at the time of installation.

5.4 Limitations on Wood Burning Fireplaces or Wood Burning Heaters

5.4.1 Effective until December 31, 2019

For any single or multi-family housing unit, for which construction began on or after January 1, 2004. Construction began when the foundation for the structure was constructed.

5.4.1.1 No person shall install a wood burning fireplace in a residential development with a density greater than two (2) dwelling units per acre.

5.4.1.2 No person shall install more than two (2) EPA Phase II Certified or more stringent certification as currently enforced under NSPS, wood burning heaters per acre in any residential development with a density greater than two (2) dwelling units per acre.

5.4.1.3 No person shall install more than one (1) wood burning fireplace or EPA Phase II Certified or more stringent certification, as currently enforced under the NSPS, per dwelling unit in any residential development with a density equal to or less than two (2) dwelling units per acre.

5.4.2 Effective on or after January 1, 2020

Requirements of Sections 5.4. 2.1 and 5.4. 2.2 do not apply to the retrofit or replacement of an existing wood burning fireplace, low mass fireplace, masonry heater, or wood burning heater to a cleaner device.

5.4.2.1 At elevations below 3,000 feet in areas with natural gas service, no person shall install a wood burning fireplace, low mass fireplace, masonry heater, or wood burning heater.

5.4.2.2 At elevations at or above 3,000 feet or in areas without natural gas service, no more than two (2) EPA certified wood burning heaters, that meet NSPS at time of installation, shall be installed per acre.

5.4.2.2.1 No person shall install more than one (1) EPA certified wood burning heater, that meets NSPS at time of installation, per dwelling unit.

5.4.2.2.2 No person shall install a wood burning fireplace, low mass fireplace, masonry heater, or non-certified wood burning heater.

5.5 Advertising Requirements for Sale of Wood

5.5.1 No person shall sell, offer for sale, or supply any wood which is orally or in writing, advertised, described, or in any way represented to be "seasoned wood" unless the wood has a moisture content of 20 percent or less by weight.

5.5.2 The APCO may delegate to another person or agency the authority to test wood for moisture content and determine compliance with Section 5.5.1.

5.6 Prohibited Fuel Types

No person shall cause or allow any of the following materials to be burned in a wood burning fireplace, wood burning heater, or outdoor wood burning device:

5.6.1 Garbage,

5.6.2 Treated wood,

5.6.3 Non-seasoned wood,

5.6.4 Plastic products,

5.6.5 Rubber products,

5.6.6 Waste petroleum products,

5.6.7 Paints and paint solvents,

5.6.8 Coal, or

5.6.9 Any other material not intended by a manufacturer for use as fuel in a wood burning fireplace, wood burning heater, or outdoor wood burning device.

5.7 Episodic Wood Burning Curtailment

This section shall be in effect annually during the months of November through February.

5.7.1 Level One Episodic Wood Burning Curtailment

A wood burning fireplace, low mass fireplace, masonry heater, outdoor wood burning device, or nonregistered wood burning heater shall not be operated within the geographic region for which a Level One Episodic Wood Burning Curtailment is in effect.

5.7.1.1 For the counties of San Joaquin, Stanislaus, Merced, Kings, and Tulare, the APCO shall declare a Level One Episodic Wood Burning Curtailment for a geographic region whenever the potential for a PM2.5 concentration is forecast to equal or exceed 20 µg/m³ but not exceed 65 µg/m³ for the geographic region.

5.7.1.2 For the counties of Madera, Fresno, and Kern, the APCO shall declare a Level One Episodic Wood Burning Curtailment for a geographic region whenever the potential for a PM2.5 concentration is forecast to equal or exceed 12 µg/m³ but not exceed 35 µg/m³ for the geographic region.

5.7.1.3 A wood burning heater that has an approved and current registration with the District may be operated within the geographic region for which a Level One Episodic Wood Burning Curtailment is in effect provided the wood burning heater:

5.7.1.3.1 Is not fired on a prohibited fuel type pursuant to Section 5.6,

5.7.1.3.2 Is maintained according to manufacturer instructions, and

5.7.1.3.3 Is operated according to manufacturer instructions.

5.7.2 Level Two Episodic Wood Burning Curtailment

A wood burning fireplace, low mass fireplace, masonry heater, outdoor wood burning device, or wood burning heater shall not be operated within the geographic region for which a Level Two Episodic Wood Burning Curtailment is in effect.

5.7.2.1 For the counties of San Joaquin, Stanislaus, Merced, Kings, and Tulare, the APCO shall declare a Level Two Episodic Wood Burning Curtailment for a geographic region whenever the potential for a PM2.5 concentration is forecast to exceed 65 µg/m³ or a PM10 concentration is forecast to equal or exceed 135 µg/m³ for the geographic region.

5.7.2.2 For the counties of Madera, Fresno, and Kern, the APCO shall declare a Level Two Episodic Wood Burning Curtailment for a geographic region whenever the potential for a PM2.5 concentration is forecast to exceed 35 µg/m³ or a PM10 concentration is forecast to equal or exceed 135 µg/m³ for the geographic region.

5.7.3 Contingency Provision

The effective date of this provision shall be 60 days after the issuance of a final determination by EPA, pursuant to 40 CFR § 51.1014(a), that the San Joaquin Valley has failed to meet one or more of the following Trigger Elements of the applicable PM2.5 NAAQS:

(1) Any Reasonable Further Progress requirement;
(2) Any quantitative milestone;
(3) Submission of a quantitative milestone report; or
(4) Attainment of the applicable PM2.5 NAAQS by the applicable attainment date.

The Contingency Provisions for the Level One and Level Two Episodic Wood Burning Curtailment shall be implemented in the following order: Paragraph (A) shall be implemented, upon the effective date of the first of any determination by EPA of failure to meet a Triggering Element; and paragraph (B) shall be implemented upon the effective date of any subsequent determination by EPA of failure to meet a Triggering Element as follows:

(A) Level One curtailment threshold of 12 µg/m³ and Level Two curtailment threshold of 35 µg/m³, upon failure to comply with any one of the Trigger Elements, will be in place for all Valley counties;

(B) Level One curtailment threshold of 11 µg/m³ and Level Two curtailment threshold of 35 µg/m³ will be in place for all Valley counties, upon failure to comply with any two of the Trigger Elements.

5.7.4 The following wood burning fireplaces and wood burning heaters are not subject to the provisions of Section 5.7.1 and 5.7.2:

5.7.4.1 Those in locations where natural gas service is not available. For the purposes of this rule, propane and butane are not considered natural gas, or

5.7.4.2 Those for whom a wood burning fireplace or wood burning heater is the sole available source of heat in a residence. This

includes times of temporary service outages, as determined by the gas or electrical utility service.

5.7.5 Episodic Wood Burning Curtailment Notice

The APCO shall notify the public of each Episodic Wood Burning Curtailment by any of the following methods:

5.7.5.1 Provide notice to newspapers of general circulation within the San Joaquin Valley.

5.7.5.2 Broadcast of messages presented by radio or television stations operating in the San Joaquin Valley.

5.7.5.3 A recorded telephone message for which the telephone number is published.

5.7.5.4 Messages posted on the District's website, www.valleyair.org.

5.7.5.5 Any other method as the APCO determines is appropriate.

5.8 Visible Emissions Limitations

5.8.1 Under normal operating conditions, no person shall cause or allow any visible smoke from a registered wood burning heater.

5.8.2 Under normal operating conditions, no person shall cause or allow from a wood burning fireplace or nonregistered wood burning heater a visible emission of any air contaminant, other than uncombined water vapor, that exceeds No. 1 on the Ringelmann Chart or 20 percent opacity for a period or periods aggregating more than 3 minutes in any one (1) hour.

5.9 Registration of Wood Burning Heaters

5.9.1 Eligibility for Registration

A wood burning heater is eligible to be registered with the District provided it is either:

5.9.1.1 Meeting certification under the NSPS at time of purchase or installation and is at least as stringent as EPA Phase II requirements, or

5.9.1.2 A pellet-fueled wood burning heater exempt from EPA certification requirements pursuant to requirements in the NSPS at the time of purchase or installation.

5.9.1.3 Wood burning heaters which do not meet the requirements of Section 5.9.1.1 or 5.9.1.2 are ineligible for registration.

5.9.1.4 Any registration of a wood burning heater which does not meet eligibility requirements is invalid.

5.9.2 Registration Process

Persons applying to register a wood burning heater shall:

5.9.2.1 Submit a completed application and supplemental documentation demonstrating compliance with the eligibility requirements specified in Section 5.9.1 to the District. Supplemental documentation shall include the following:

5.9.2.1.1 Receipt or invoice from the installation or purchase that includes the manufacturer and model name of the wood burning heater, or

5.9.2.1.2 A certification from a District Registered Wood Burning Heater Professional verifying that the wood burning heater meets eligibility requirements pursuant to Section 5.9.1.

5.9.2.1.3 If the wood burning heater was purchased and/or installed more than one year prior to registration with the District, the person must show proof of inspection of the wood burning heater from a District Registered Wood Burning Heater Professional.

5.9.2.2 Pay a registration fee as required by Section 3.0 of District Rule 3901 (Fees for Registration of Wood Burning Heaters).

5.9.2.3 Operate the wood burning heater in compliance with the requirements in Section 5.6 and Section 5.7.

5.10 Renewal of Registration

5.10.1 Registration shall be valid for a period of up to three wood burning seasons from the date of registration issuance, unless the holder of the certificate is disqualified pursuant to Section 5.11.

5.10.2 Registration may be renewed by complying with the following requirements:

5.10.2.1 Complete and submit to the District a Registration Renewal application with verification that the wood burning heater has been inspected by District Registered Wood Burning Heater Professional to verify that it is maintained pursuant to manufacturer specifications.

5.10.2.2 Payment of a registration renewal fee as required by Section 4.0 of District Rule 3901.

5.10.3 Failure to comply with Sections 5.10.1 or 5.10.2 may result in disqualification of registration.

5.11 Disqualification of Registration

5.11.1 If the District finds a registered wood burning heater is operated in violation of the requirements of this rule, the registration may be disqualified, provided that notice and an opportunity for an office conference was afforded pursuant to Section 5.11.4.

5.11.2 A registration disqualified pursuant to Section 5.11.1 may be reinstated if subsequent to the disqualification the operator of the wood burning heater demonstrates compliance with the requirements of Section 5.6 and Section 5.7.

5.11.3 Persons with a disqualified registration pursuant to Section 5.11.1 may appeal the determination by petitioning to the APCO.

5.11.4 Notice of Preliminary Disqualification Determination

If the District makes a preliminary determination that a registered unit is in violation of Section 5.0, the following actions shall be taken:

5.11.4.1 Notify the person who registered the wood burning heater, in writing, that the District has made a preliminary disqualification determination and pursuant to Section 5.11.1 the District may cancel the registration 30 calendar days after the date on the notice. The notice shall include all of the relevant facts relating to the preliminary determination that are known to the District at the time of the notice.

5.11.4.2 Request as part of the notification required by Section 5.11.4.1 that the person who registered the wood burning heater confer with the District, in an office conference within 30 calendar days of the date on the notice to discuss the facts relating to the preliminary disqualification determination.

5.11.4.3 Conduct the office conference required by Section 5.11.4.2 provided that the person who registered the wood burning heater accepts the request for the office conference.

5.11.5 Setting Aside a Disqualification

A disqualification determination pursuant to Section 5.11.1 shall be set aside by the APCO if the petitioner demonstrates to the satisfaction of the APCO that the violations forming the basis for the disqualification were the result of circumstances beyond the reasonable control of the petitioner and could not have been prevented by the exercise of reasonable care.

5.12 Registration of Wood Burning Heater Professionals

5.12.1 To qualify to register as a Wood Burning Heater Professional with the District the applicant must meet one of the following criteria; this must be active, valid, and current:

5.12.1.1 Fireplace Investigation Research and Education (F.I.R.E.) Certified Inspector, or

5.12.1.2 Chimney Safety Institute of America (CSIA) certification, or

5.12.1.3 National Fireplace Institute (NFI) certification, or

5.12.1.4 A person determined to be qualified to perform inspections, maintenance, and cleaning activities on wood burning heaters by the APCO.

5.12.2 Persons applying to register as a Wood Burning Heater Professional with the District shall:

5.12.2.1 Submit a completed application for registration to the District.

5.12.2.2 Submit any necessary supplemental documents as determined by the APCO as necessary to verify statements and qualifications as presented in the application for registration.

5.12.2.3 If the applicant does not have a certification pursuant to Sections 5.12.1.1 through 5.12.1.3 the applicant may submit an application to the APCO with supplemental documentation verifying that the applicant meets the certification standards as required by certifications pursuant to Sections 5.12.1.1 through 5.12.1.3.

5.12.3 Registration as a Wood Burning Heater Professional with the District is valid for up to three years from the date of issuance.

5.12.4 The District shall maintain a list of registered Wood Burning Heater Professionals on the District web page.

5.13 Inspection of Registered Wood Burning Heaters

The District has the right of entry for the purpose of inspecting any wood burning heater registered with the District in order to enforce or administer this rule.

6.0 Administrative Requirements

6.1 Upon request of the APCO, the manufacturer shall demonstrate that each wood burning heater subject to the requirements of Sections 5.1 or 5.2 is compliant with said requirements.

6.2 The person who registers the wood burning heater shall retain a copy of the District issued registration and make it available upon request.

7.0 Test Methods

7.1 Moisture content of wood shall be determined by the current version of ASTM Test Method D 4442.

7.2 Compliance with visible-smoke free operation of the wood burning heater pursuant to Section 5.8.1 shall be determined using EPA Method 22 (Visible Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares).

7.3 Compliance with the visible emission limit pursuant to Section 5.8.2 shall be determined using US EPA Method 9 for visual determination of the opacity of emissions.

RULE 4902 RESIDENTIAL WATER HEATERS (Adopted June 17, 1993; Amended March 19, 2009)

1.0 Purpose

The purpose of this rule is to limit oxides of nitrogen emissions from residential water heaters.

2.0 Applicability

This rule applies to manufacturers, distributors, retailers, and installers of PUC quality natural gas-fired residential water heaters with heat input rates less than or equal to 75,000 Btu/hr.

3.0 Definitions

3.1 Air Pollution Control Officer (APCO): As defined in Rule 1020 (Definitions).

3.2 California Public Utility Commission (PUC) Quality Natural Gas: Any gaseous fuel, gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume.

3.3 Heat Output: The product obtained by multiplying the recovery efficiency, as defined by Section 6.1.3 of the Code of Federal Regulation, Title 10, Part 430, Subpart B, Appendix E, by the input rating of the water heater.

3.4 Input Rating: The amount of energy a water heater consumes in one hour (Btu/Hour).

3.5 Instantaneous Water Heater: A water heater that heats water only when it flows through a heat exchanger.

3.6 Mobile Home Water Heater: 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 210ºF (99ºC).

3.7 Pool Heater: A water heater designed to heat a pool, hot tub, or spa.

3.8 Water Heater: A closed vessel, in which water is heated by the combustion of

PUC quality natural gas 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°F (99ºC).

4.0 Exemptions

4.1 PUC quality natural gas-fired water heaters with rated heat input of greater than 75,000 Btu per hour.

4.2 Water heaters using fuels other than PUC quality natural gas.

4.3 Pool heaters. On and after January 1, 2010, pool heaters shall comply with all applicable requirements of this rule.

4.4 Water heaters used exclusively in recreational vehicles.

5.0 Requirements

5.1 On and before December 31, 2009, no person shall sell, install or offer for sale within the District any PUC quality natural gas-fired water heater manufactured after December 17, 1993, except for mobile home water heaters subject to Section 5.2, unless the water heater is certified pursuant to Section 6.1 to a NOx emission level of less than or equal to 40 nanograms of nitrogen oxides (calculated as NO_2) per Joule of heat output.

5.2 No person shall manufacture for sale, distribute, sell, offer for sale, or install within the District any PUC quality natural gas-fired mobile home water heater unless the water heater is certified pursuant to Section 6.1 to a NOx emission level of less than or equal to 40 nanograms of NOx (calculated as NO_2) per joule of heat output.

5.3 On and after January 1, 2010, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the District any PUC quality natural gas-fired pool heater unless the water heater is certified pursuant to Section 6.1 to a NOx emission level of less than or equal to 40 nanograms of NOx (calculated as NO_2) per joule of heat output.

5.4 On and after January 1, 2010, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the District any PUC quality natural gas-fired water heater, excluding mobile home water heaters, instantaneous water heaters, and pool heaters, unless the water heater is certified pursuant to Section 6.1 to a NOx emission level of less than or equal to 10 nanograms of NOx (calculated as NO_2) per joule of heat output.

5.5 On and after January 1, 2012, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the District any PUC quality natural gas-fired instantaneous water heater unless the water heater is certified pursuant to Section 6.1 to a NOx emission level of less than or equal to 14 nanograms of NOx (calculated as NO_2) per joule of heat output.

6.0 Administrative Requirements

6.1 Certification

6.1.1 Each water heater undergoing testing shall be operated in accordance with Section 2.4 of American National Standards ANSI Z21.10.1-1990, Z21.10.3-2004, or Z21.56-2006, as applicable, at normal test pressure, input rates, and with a five-foot exhaust stack installed during the nitrogen oxides emission tests.

6.1.2 The manufacturer shall demonstrate that each water heater model subject to the requirements of Section 5.0 has been tested in accordance with EPA Reference Test Method 7E, 40 CFR Part 60, Appendix A.

6.1.3 The following formula shall be used to calculate the emissions of NO_x in nanograms of NO_x per Joule of heat output:

$$N = (4.566 \times 10^4 \times P \times U)/(H \times C \times E)$$

Where:

N	=	NO_X emission rate in nanograms of NO_X emitted per Joule of heat output
4.566×10^4	=	unit conversion factor (ppm to nanograms and Btu to Joules)
P	=	Concentration of NO_X in the flue gas in parts per million (volume)
U	=	Dry volume percent of CO_2 in flue gas necessary for stoichiometric combustion
H	=	Gross heating value of the gas, Btu/Cu ft (at 60°F and 30" Hg)
C	=	Dry volume percent of CO_2 in flue gas
E	=	Recovery efficiency, percentage, as defined in Section 6.1.3 of the Code of Federal Regulation, Title 10, Part 430, Subpart B, Appendix E

6.1.4 The manufacturer may submit to the APCO an approved South Coast Air Quality Management District Rule 1121 (Control of Nitrogen Oxides From Residential Type, Natural Gas-Fired Water Heaters), Ventura

County Air Pollution Control District Rule 74.11 (Natural Gas-Fired Residential Water Heaters – Control of NOx), or Bay Area Air Quality Management District Regulation 9 Rule 6 (Nitrogen Oxides Emissions from Natural Gas-Fired Boilers and Water Heaters) certification in lieu of conducting duplicative certification tests pursuant to Section 6.1.

6.1.5 Upon request of the APCO, each manufacturer shall submit to the APCO a statement certifying the water heaters subject to this rule are in compliance with the provisions of Section 5.0. The statement shall be signed, dated and shall attest to the accuracy of all information. The statement shall include:

6.1.5.1 Name and address of manufacturer,
6.1.5.2 Brand name,
6.1.5.3 Model number, as it appears on the water heater rating plate, and
6.1.5.4 Heat input rating, Btu/hr.

6.2 For units subject to Section 5.0, the manufacturer shall display the following on the shipping carton and rating plate of each unit:

6.2.1 the model number,
6.2.2 the date of manufacture, and
6.2.3 the certification status.

RULE 4905 NATURAL GAS-FIRED, FAN-TYPE CENTRAL FURNACES (Adopted October 20, 2005, Amended January 22, 2015)

1.0 Purpose

The purpose of this rule is to limit NOx emissions from natural gas-fired, fan-type central furnaces.

2.0 Applicability

The provisions of this rule shall apply to any person who supplies, sells, offers for sale, installs, or solicits the installation of natural gas-fired, fan-type central furnaces for use within the San Joaquin Valley Air Basin with a rated heat input capacity of less than 175,000 British thermal units per hour, and for combination heating and cooling units with a rated cooling capacity of less than 65,000 British thermal units per hour.

3.0 Definitions

3.1 Air Pollution Control Officer (APCO): as defined in Rule 1020 (Definitions).

3.2 Annual Fuel Utilization Efficiency: the efficiency descriptor as defined by Section 430.2 of the Code of Federal Regulations, Title 10, Part 430, Subpart A.

3.3 Condensing Unit: for purposes of this rule, a natural gas-fired, fan-type central furnace, as defined in Section 3.5, 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 is drained.

3.4 District: as defined in Rule 1020 (Definitions).

3.5 Fan-type Central Furnace: a self-contained space heater providing for circulation of heated air at pressures other than atmospheric, through ducts more than 10 inches in length.

3.6 Heat Output (Central Furnace): the product obtained by multiplying the annual fuel utilization efficiency by the rated heat input capacity of the natural gas-fired, fan-type central furnace.

3.7 Manufactured Home: as defined in 42 United States Code Section 5402 and California Health and Safety Code Section 18007. "Manufactured home" includes a mobile home subject to the National Manufactured Housing Construction and Safety Act of 1974 (42 U.S.C., Sec. 5401, et seq.).

3.8 Natural Gas: a mixture of gaseous hydrocarbons containing at least 80 percent methane by volume, as determined according to Standard Method ASTM D1945-64.

3.9 NOx: any oxides of nitrogen.

3.10 Rated Cooling Capacity: the amount of heat energy the cooling system can displace in one hour (British thermal units per hour), as specified on the rating plate of the cooling unit.

3.11 Rated Heat Input Capacity: the amount of energy consumed in one hour (British thermal units per hour), as specified on the rating plate of the combustion unit.

3.12 Responsible Official: for the purposes of this rule: 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 a partnership or sole proprietorship, a general partner or proprietor, respectively.

3.13 Weatherized Unit: for the purposes of this rule, a natural gas-fired, fan-type central furnace designed for installation outside of a building, equipped with a protective jacket and integral venting, and labeled for outdoor installation.

4.0 Exemptions

[Reserved]

5.0 Requirements

5.1 No person shall supply, sell, offer for sale, install, or solicit the installation of any natural gas-fired, fan-type residential central furnace unless it is certified pursuant to Section 6.1 to have NOx emissions less than or equal to 40 nanograms per joule (ng/J) of heat output.

5.2 Effective on and after the specified compliance dates in Table 1, no person shall supply, sell, offer for sale, install, or solicit the installation of any natural gas-fired, fan-type central furnace unless it is certified pursuant to Section 6.1 and complies with the applicable NOx emission limit in Table 1.

Table 1 NOx Emission Limits and Compliance Schedule		
Unit Type	NOx Emission Limit (nanograms/Joule)	Compliance Date
Units installed in manufactured homes	40	February 1, 2015
All non-weatherized condensing units except those installed in manufactured homes	14	April 1, 2015
All non-weatherized, non-condensing units except those installed in manufactured homes	14	October 1, 2015
Weatherized units	14	October 1, 2016
Units installed in manufactured homes	14	October 1, 2018

5.3 Sell-Through Period

Any natural gas-fired, fan-type central furnace manufactured prior to the applicable compliance date in Table 1 may be supplied, sold, offered for sale, or installed until the applicable sell-through period end-date in Table 2, provided the unit is compliant with the following requirements:

5.3.1 The NOx emission limits and certification requirements in effect on the date of manufacture of the unit, and

5.3.2 The labeling requirements specified in Section 6.1.2.

Table 2 Sell-through Period End-Dates for Units Manufactured Prior to the Applicable Compliance Dates in Table 1	
Unit Type	Sell-through Period End-date
All non-weatherized condensing units except those installed in manufactured homes	January 26, 2016
All non-weatherized, non-condensing units except those installed in manufactured homes	July 27, 2016
Weatherized units	July 27, 2017
Units installed in manufactured homes (for certified 40 ng/J units)	July 27, 2019

5.4 Emissions Fee Option

Any manufacturer of units regulated by this rule may elect to pay a per unit emissions fee of $290 for each condensing furnace and $225 for each non-condensing or manufactured home furnace distributed or sold into the San Joaquin Valley Air Basin in lieu of meeting the 14 ng/J emission limit in Table 1 of this rule, provided the NOx emission rate is less than or equal to 40 ng/J. A manufacturer may elect to pay the per unit emissions fee for a time period of no more than 36 months after the applicable compliance date in Table 1. A

manufacturer shall submit a compliance plan for each 12-month time period after the applicable compliance date during which the manufacturer elects to pay the emissions fee in lieu of meeting the NOx emission limit.

5.4.1 Any manufacturer electing to comply using this emissions fee option shall submit to the APCO a compliance plan no later than 30 days prior to the applicable compliance date in Table 1. The compliance plan shall include the following:

5.4.1.1 A letter with the name of the manufacturer requesting the emissions fee option signed by a responsible official identifying the unit type and the 12-month emissions fee option compliance period that the emissions fees cover.

5.4.1.2 An estimate of the quantity of applicable units to be distributed or sold into the San Joaquin Valley Air Basin during the emissions fee option compliance period and supporting documentation. The 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 San Joaquin Valley Air Basin during the 12-month period of July 1 to June 30 prior to the applicable compliance date, along with supporting documentation.

5.4.2 The manufacturer shall submit a report to the APCO, signed by the responsible official for the manufacturer, identifying by model number the quantity of applicable units actually distributed or sold into the San Joaquin Valley Air Basin during the applicable 12-month emissions fee option compliance period and a check for payment of emissions fees for those units. The report and payment of emissions fees must be submitted to the APCO no later than thirty (30) days after the end of each 12-month emissions fee option compliance period.

6.0 Administrative Requirements

6.1 Emission Certification

6.1.1 Certified emissions levels shall be demonstrated by an emission certification approved under any of the following:

6.1.1.1 Certification testing as described in Section 6.2 of this rule,

6.1.1.2 The South Coast Air Quality Management District Certification List for Rule 1111 (NOx Emissions From Natural-gas-fired, Fan-type Central Furnaces), or

6.1.1.3 Other emission certification programs approved by the APCO and the United States Environmental Protection Agency.

6.1.2 The manufacturer of the natural gas-fired, fan-type central furnace shall comply with the following labeling requirements:

6.1.2.1 Display the model number of the unit complying with Section 5.0 on the shipping container and the rating plate of the unit; and

6.1.2.2 Units manufactured after the applicable compliance date in Table 1 shall display the following on the shipping container and the rating plate of the unit, in addition to the labeling requirements under Section 6.1.2.1:

6.1.2.2.1 Rated heat input capacity or rated cooling capacity,

6.1.2.2.2 The applicable NOx emission limit in Section 5.0, and

6.1.2.2.3 The date of manufacture or date code of the unit.

6.1.3 Upon request of the APCO, each manufacturer shall submit to the District a statement confirming the unit subject to this rule is in compliance with the emission limit specified in Section 5.0. The statement shall be signed, dated, and shall attest to the accuracy of all information. The statement shall include:

6.1.3.1 Name and address of manufacturer,

6.1.3.2 Brand name,

6.1.3.3 Model number, as it appears on the rating plate of the unit,

6.1.3.4 Rated heat input capacity, British thermal units per hour, and

6.1.3.5 A source test report verifying compliance with Section 5.0.

6.2 Certification Testing

6.2.1 During testing, each tested natural gas-fired, fan-type central furnace model shall be operated in accordance with the procedures specified in 10 CFR 430, Subpart B, Appendix N.

6.2.2 Compliance with the NOx emission requirements in Section 5.0 shall be determined using California Air Resources Board Method 100, SCAQMD Method 100.1, or United States Environmental Protection Agency Methods 7E and 3A.

6.3 Recordkeeping

Compliance testing records shall be maintained for five years and made available to the APCO upon request.

9/25/94

RULE 6010 GENERAL STATEMENT (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Requirements

This emergency plan is to provide the basis for taking action to prevent air pollutant concentration from reaching levels which could endanger the public health or to abate such concentrations should they occur. The air quality in some areas frequently does not meet ambient air quality standards. While remote, the potential exists for air pollution in these areas to reach hazardous concentration. The District has the primary responsibility for taking necessary action to curtail polluting activities and should the episode become so severe that it is beyond the control capabilities of the local District, the State may be requested to take action to alleviate the condition.

9/25 A4

RULE 6020 APPLICABLE AREAS (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Applicability

Notwithstanding any other provisions of these Rules and Regulations, the provisions of this regulation shall apply separately to each source area and receptor area in the San Joaquin Valley for the control of air contaminants during any Stage 1, Stage 2, and Stage 3 air pollution episode as provided herein.

2.0 Definitions

2.1 Source Area: that area from which high concentrations of air pollutants are emitted.

2.2 Receptor Area: that area in which high concentrations of air pollutants are measured.

3/3/97

RULE 6030 EPISODE CRITERIA LEVELS (Adopted May 21, 1992, Amended December 17, 1992; November 13, 1996)

Pollutant	Averaging Time	Health Advisory	Stage 1 (Alert)	Stage 2 (Warning)	Stage 3 (Emergency)
Ozone	1 Hour	0.15 ppm	0.20 ppm	0.35 ppm	0.50 ppm for 1 hr.*
Carbon Monoxide	1 Hour	**	40 ppm	75 ppm	100 ppm for 1 hr.*
	4 Hours	**	25 ppm	45 ppm	60 ppm
	12 Hours	**	20 ppm	35 ppm	50 ppm
	8 Hours	**	15 ppm	30 ppm	40 ppm
Sulfur Dioxide	1 Hour	**	0.5 ppm	1.0 ppm	2.0 ppm
	24 Hours	**	0.2 ppm	0.7 ppm	0.9 ppm
Particulate Matter-10	24 Hours	**	350 ug/m^3	420 ug/m^3	500 ug/m^3

*and predicted to persist for one additional hour.

**Health Advisories for these pollutants are issued at their respective Stage 1 levels.

9/28/94

RULE 6040 EPISODE STAGES (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Health Advisory

A health advisory is issued when the concentration of the pollution specified for this stage is predicted or reached.

2.0 Stage 1 (Alert)

An alert is called when the concentration of the pollutants specified for this stage is predicted or reached.

3.0 Stage 2 (Warning)

A warning is called when the concentration of pollutants specified for this stage is predicted or reached.

4.0 Stage 3 (Emergency)

An emergency is called when the conditions specified for this stage are predicted or reached and in the case of the 1-hour criteria for carbon monoxide or oxidants, are predicted to persist for 1 additional hour.

5.0 Episode Termination

A stage is terminated whenever the concentration of the pollutant(s) which cause(s) the declaration of the episode has been verified to have fallen below the criteria level for the declaration of the episode, and meteorological data indicate that the pollutant concentration is expected to decrease.

9/25/94

RULE 6050 DIVISION OF RESPONSIBILITY (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Prediction of Episode Conditions

The ARB shall provide advisory notices of probable episodes. These notices will include air quality predictions based upon analysis of meteorological and ambient air quality data. The District may supplement this information with data from their own facilities or from contract services.

2.0 Health Advisory

The APCO shall notify persons with special health problems to take precautions against exposures. Schools shall be notified by the APCO so they can curtail students' participation in strenuous activities.

3.0 Stage 1 (Alert)

The APCO shall implement both voluntary and mandatory abatement plans.

4.0 Stage 2 (Warning)

The APCO shall implement both voluntary and mandatory abatement plans.

5.0 Stage 3 (Emergency)

The APCO shall take all actions within its authority to abate the emergency. If further abatement action is necessary, the Air Pollution Control Board may request the Governor to take action or the Governor may take action in accordance with the Emergency Services Act. The ARB should be consulted prior to submitting this request. If the Governor invokes the provisions of the Act, the Office of Emergency Services (OES) will implement the appropriate portion of the State Peacetime Emergency Plan, with the local District and the ARB assisting in the control action.

6.0 Termination

The APCO shall terminate Stage 1, Stage 2, and Stage 3 using the episode termination criteria. If the emergency stage is declared by the Governor, it can only be terminated by the Governor or his authorized representative.

9/25/94

RULE 6060 ADMINISTRATION OF EMERGENCY PROGRAM (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Sampling Stations

The APCO with the concurrence of the ARB shall designate at least one permanently located atmospheric sampling station equipped to monitor the contaminants covered by the plan. Sampling locations shall be designated by the APCO with the concurrence of the ARB. These stations shall consist of monitoring equipment operated in a manner that will provide for measurements of contaminant concentration in the range of values specified in the episode criteria. Additional temporary, fixed or mobile sampling stations may be maintained and activated as deemed necessary in the applicable areas. Analytical procedures shall be in conformance with the ARB standards. The ARB shall provide calibration services as required.

2.0 Meteorological Services

When deemed necessary by the ARB, they shall provide for the acquisition of meteorological information in any area of the State. The District may provide such services in addition to the State services.

3.0 Notification of Episode

3.1 The APCO shall notify the following when an episode has been declared:

3.1.1 The ARB.

3.1.2 Local public health officials and hospitals.

3.1.3 School officials.

3.1.4 The news, radio, and television media.

3.1.5 District personnel.

3.1.6 Appropriate elected officials.

3.1.7 Local and State law enforcement agencies.

3.1.8 Sources specified in the shutdown plans.

3.1.9 Public safety personnel who have responsibilities for or interests in air pollution control.

3.1.10 The Emergency Action Committee (if one is appointed).

3.1.11 The Bay Area Air Quality Management District, the Sacramento Metropolitan Air Quality Management District, the South Coast Air Quality Management District, and other adjoining Districts for a Stage 2 or Stage 3 Episode.

3.2 The Notice of Declaration of an episode shall include the following:

3.2.1 The specific level achieved or predicted.

3.2.2 The estimated geographic area affected or to be affected.

3.2.3 The pollutant for which the declaration is made.

3.2.4 The geographic location where the air contaminants were measured.

3.2.5 The predicted duration.

4.0 Emergency Action Committee

The APCO may appoint an Emergency Action Committee consisting of the Health Officers, Sheriffs, District Counsel, Chairman of the Board, Emergency Services and other members and may include representatives of the ARB or the State Office of Emergency Service for liaison purposes. The committee shall act in an advisory capacity to the APCO.

5.0 Interdistrict Coordination

5.1 Upon the request of an APCO who has declared an air pollution episode, adjacent air pollution control districts shall provide air pollutant and meteorological information (within one hour of the request) so as to delineate source and receptor areas within the San Joaquin Valley.

5.2 Upon the request of an air pollution control district adjacent to the San Joaquin Valley Air Basin requesting action to abate an episode, the APCO will consult with the Air Pollution Control Board and the Emergency Action Committee (if one is appointed) to determine and to evaluate the source area and the nature and the extent of the control actions to be taken. Control actions shall be implemented within two (2) hours of the request.

5.3 Each air pollution control district adjoining the San Joaquin Valley Air Basin shall implement any action or combination of actions in Rule 6130 (Stationary

Source Curtailment Plans and Traffic Abatement Plans) that will abate the episode.

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9/28/93

RULE 6070 ADVISORY OF HIGH AIR POLLUTION POTENTIAL (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Advisory

Upon the determination that a high potential for deteriorating air quality exists in an area as a result of either an ARB analysis or the advice of a local district, the ARB shall inform the District of this condition. The operators of the monitoring stations shall be alerted to the potential by the District.

9/28/94

RULE 6080 DECLARATION OF EPISODE (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Requirements

The APCO shall declare a health advisory, alert, warning or emergency in the District whenever the concentration of the pollutant(s) is predicted or has reached the concentrations set forth in Rule 6030 (Episode Criteria Levels).

9/28/94

RULE 6081 EPISODE ACTION - HEALTH ADVISORY (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Requirements

Upon the declaration of this stage, the APCO shall take the following general action:

1.1 Issue health warnings to sensitive persons in receptor areas.

1.2 Notify schools that sustained rigorous outdoor exercise for more than one hour by students must be discontinued.

1.3 Notify officials, news media, and organizations required by Rule 6060 (Administration of Emergency Program).

9/28/94

RULE 6090 EPISODE ACTION STAGE 1 (HEALTH ADVISORY-ALERT) (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Requirements

Upon the declaration of this stage, the APCO shall take the following general action:

1.1 The notifications required by Rule 6060 (Administration of Emergency Program).

1.2 San Joaquin Valley Communications shall be requested to broadcast the "Notice of Declaration" over the School Alert System, Sigalert System and Law Enforcement Communication System.

1.3 Request the public to stop all unnecessary driving in the source and receptor areas.

1.4 Request the public to operate all privately-owned vehicles on a pool basis in the affected source and receptor areas and use public transportation in the affected source and receptor areas.

1.5 Request all employers to encourage employee car pools.

1.6 Prohibit the burning of combustible refuse and agricultural waste within the air basin.

1.7 Oxidant

1.7.1 Implement the Stage 1 oxidant stationary source abatement plans as required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

1.8 Carbon Monoxide

1.8.1 Implement the Stage 1 carbon monoxide stationary source abatement plans as required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

1.9 Implement the source inspection plan required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

1.10 Persons operating any facility named in Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans) shall implement the

appropriate plans submitted in accordance with Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

9/28/94

RULE 6100 EPISODE ACTION STAGE 2 (WARNING) (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Requirements

Upon the declaration of this stage, the APCO shall take the following actions or any combination of actions in the source and receptor areas:

1.1 The actions required by Rule 6090 (Episode Action Stage 1 (Health Advisory-Alert)).

1.2 Oxidant

1.2.1 Implement the Stage 2 oxidant traffic abatement plans as required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

1.2.2 Implement the Stage 2 oxidant stationary source abatement plans as required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans). Advise affected industries to prepare for possible shutdown.

1.3 Carbon Monoxide

1.3.1 If the occurrence of Stage 2 for carbon monoxide is determined to have been due to traffic congestion in a specific area, measures shall be taken to reduce the traffic congestion in that area.

1.3.2 Implement the Stage 2 carbon monoxide traffic abatement plans as required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

1.3.3 Implement the Stage 2 carbon monoxide stationary source abatement plans as required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans). Advise affected industries to prepare for possible shutdown.

1.3.4 Request the general public to avoid the area of the episode.

1.4 The ARB shall be notified at each quarter of the concentration difference between Stages 2 and 3.

1.5 The Executive Officer of the ARB shall activate the ARB emergency action staff and notify the Office of Emergency Service upon notification by the APCO that the pollutant(s) concentration has reached Stage 2.

1.6 The Air Pollution Control Board, District Counsel and the Emergency Action Committee (if one is appointed) shall be called into session to study the pertinent information relating to the concentration of air contaminants and to recommend to the APCO actions to be taken. These actions may include but are not limited to stationary source curtailment, episode abatement plans, and traffic abatement plans or any portion thereof.

1.7 Whenever the APCO determines it necessary, the Air Pollution Control Board, District Counsel and the Emergency Action Committee (if one is appointed) may take any action with less than a quorum present. A majority of the members present is required for any such action.

1.8 The APCO shall implement the actions recommended by the Air Pollution Control Board, District Counsel and Emergency Action Committee (if one is appointed).

1.9 Persons operating any facility named in Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans) shall implement the appropriate plans submitted in accordance with Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

9/25/94

RULE 6110 EPISODE ACTION STAGE 3 (EMERGENCY) (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Requirements

Upon the following declaration of this Stage, the APCO shall take the following actions or any combination of actions in the source and receptor areas:

1.1 The actions required by Rule 6100 (Episode Action Stage 2 (Warning)).

1.2 Oxidant

1.2.1 Implement the Stage 3 oxidant traffic abatement plans as required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

1.2.2 Implement the Stage 3 oxidant stationary source abatement plans as required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

1.3 Carbon Monoxide

1.3.1 Implement the Stage 3 carbon monoxide traffic abatement plans as required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

1.3.2 Implement the Stage 3 carbon monoxide stationary source abatement plans as required by Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

1.4 Review abatement action and determine if curtailment plans should include additional industrial sources and the closing of all but essential business where continued operation would result in emissions that contribute to the episode.

1.5 If it appears that the steps taken by the APCO will be inadequate to cope with the emergency, the Air Pollution Control Board shall request action of the Executive Officer of the ARB.

1.5.1 The Office of Emergency Services and the ARB shall evaluate actions that have been taken and jointly advise the Governor of the conditions and shall recommend to the Governor whether or not further actions under the Emergency Services Act should be taken.

1.5.2 If it is determined that further action is necessary, the Office of Emergency Services shall activate its predetermined procedures in accordance with the applicable portion of the State Peacetime Emergency Plan developed pursuant to the Emergency Services Act.

1.6 Persons operating any facility named in Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans) shall implement the appropriate plans submitted in accordance with Rule 6130 (Stationary Source Curtailment Plans and Traffic Abatement Plans).

1.7 The general public, schools, and industrial, business, commercial, and governmental activities throughout the San Joaquin Valley shall operate as though the day were a major national holiday.

9/25/94

RULE 6120 EPISODE TERMINATION (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Requirements

The APCO shall declare the termination of the appropriate episode whenever the concentration of an air contaminant which caused the declaration of such episode has been verified to be below the levels set forth in Rule 6030 (Episode Criteria Levels) for the calling of such episode and the available scientific and meteorological data indicate that the concentration of such air contaminant will not immediately increase again so as to reach the levels set forth for such episode in Rule 6030 (Episode Criteria Levels). The APCO shall immediately notify those required by Rule 6060 (Administration of Emergency Program) of the declaration of the termination of the episode. The San Joaquin Valley Communications shall be requested to broadcast the termination over the School Alert System, Sigalert System and the Law Enforcement Communication System.

9/25/94

RULE 6130 STATIONARY SOURCE CURTAILMENT PLANS AND TRAFFIC ABATEMENT PLANS (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Stationary Source Curtailment Plan

The owner or operator of any business, commercial, industrial or governmental stationary source in the San Joaquin Valley which can be expected to emit 100 tons per year or more of carbon monoxide, hydrocarbons, particulate matter or oxides of nitrogen shall submit to the APCO plans to curtail or cease operations causing stationary source air contaminants in such activity:

1.1 Each plan should include at least the following information for each location:

1.1.1 Name and location of the facility.

1.1.2 The number of employees at the facility during each shift on a normal weekday and on a major national holiday.

1.1.3 The amount of energy (gas, fuel oil and electricity) used on a normal weekday and on a major national holiday.

1.1.4 Type of equipment that emits air pollutants and number of units of each type.

1.1.5 Total emissions of each pollutant in pounds per operating day from each type of equipment including any significant variations occurring seasonally or differences in emissions on weekends and holidays. If available, these data may be supplied from District records.

1.1.6 Procedures for briefing employees regarding the abatement plan requirements.

1.1.7 Procedures for notifying employees and individuals responsible for emissions curtailment actions to be taken.

1.1.8 Where applicable, a procedure for limiting strenuous activities by students.

1.1.9 The names and telephone numbers of the episode action coordinator and alternate.

1.1.10 The names of the officials responsible for implementation of the plan.

1.1.11 Identification of equipment for which emissions are to be curtailed at each episode stage and expected reduction of emissions of each pollutant in pounds per operating day.

1.1.12 Time required to accomplish the emissions curtailment at each episode stage.

1.1.13 Reductions in fuel oil, gas and electrical consumption expected at each episode stage.

1.2 First stage episodes

1.2.1 The measures to voluntarily curtail equipment operations that emit air pollutants specific to the type of episode.

1.2.2 In the case of oxidant episodes, the equipment operations that emit hydrocarbons and nitrogen oxides.

1.3 Second stage episodes

1.3.1 The measures to curtail as much as possible, equipment operations that emit air pollutants specific to the type of episode and in the case of oxidant episodes, the equipment operations that emit hydrocarbons and nitrogen oxides.

1.3.2 The measures to postpone operations which can be postponed until after the episode.

1.3.3 For fossil fuel-fired combustion sources, including electric utilities, with a heat input greater than 50 million BTU per hour the measures to burn natural gas.

1.3.4 For electric utilities the measures, in addition to those in Section 1.3.3, to shift oil power generation to non-source areas to the maximum extent consistent with the public health, safety, and welfare.

1.3.5 For refineries and chemical plants, the measures to be taken to reduce emissions by 20% by curtailing equipment operations that emit air pollutants specific to the type of episode and in the case of oxidant episodes, the equipment operations that emit hydrocarbons and nitrogen oxides without jeopardizing the public health or safety, without causing an increase in the emission of other air contaminants, without damaging the equipment or without reducing production more than 20 percent.

1.3.6 The measures in Section 1.2 of this rule.

1.4 Third stage episodes

1.4.1 A list of equipment, with permit numbers if applicable, which can be shut down without jeopardizing the public health or safety, and an estimate of the resultant reductions in carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter emissions.

1.4.2 A list of equipment, with permit numbers if applicable, which must be operated to protect the public health or safety, and an estimate of the carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter emissions from such equipment.

1.4.3 The measure for chemical plants and petroleum refineries to reduce emissions by 33% by curtailing equipment operations that emit air pollutants specific to the type of episode and in the case of oxidant episodes the equipment operations that emit hydrocarbons and nitrogen oxides, without jeopardizing the public health and safety.

1.4.4 The measures described in Section 1.3 of this rule.

1.4.5 The measures for stationary sources which emit 100 tons per year or more of air contaminants to eliminate emissions specific to the type of episode, and in the case of oxidant episodes, the measures to eliminate hydrocarbons and nitrogen oxides by starting no new batches, by ceasing feed of new materials, and by phasing down as rapidly as possible without damage to the equipment.

2.0 Traffic Abatement Plan

The owner or operator of any industrial, business, commercial, or governmental facility or activity employing more than 100 persons per shift at any one (1) business address shall submit to the APCO plans to curtail or cease operations causing air contaminants from vehicle use:

2.1 Each plan should include at least the following information for each location:

2.1.1 Name and location of the facility.

2.1.2 Number of employees.

2.1.3 Employee vehicles.

2.1.3.1 number using gasoline or diesel.

2.1.3.2 total average daily commute mileage.

2.1.4 Fleet vehicles.

2.1.4.1 number using gasoline or diesel.

2.1.4.2 total average daily mileage of each type.

2.1.5 Procedures for briefing employees regarding the abatement plan requirements.

2.1.6 Procedures for notifying employees and individuals responsible for emissions curtailment actions to be taken.

2.1.7 Where applicable, a procedure for limiting strenuous activities by students.

2.1.8 The names and telephone numbers of the episode action coordinator and alternate.

2.1.9 The name of the official responsible for implementation of the plan.

2.2 Each plan should include at least the following information, where applicable, regarding emission abatement actions:

2.2.1 The total number of employees at the facility during each shift.

2.2.2 The total number of motor vehicles and vehicle miles traveled for motor vehicles operated:

2.2.2.1 by the company for company business on a normal weekday and a major national holiday.

2.2.2.2 by employees commuting between home to the place of business on a normal weekday and a major national holiday.

2.2.2.3 the minimum number of motor vehicles to be operated that are necessary to protect public health or safety.

2.3 First Stage Episodes

2.3.1 The measures by which employers will encourage the utilization of car pools or otherwise reduce employee motor vehicle travel.

2.4 Second Stage Episodes

2.4.1 The measures within the reasonable control of the employer to reduce the number of vehicle miles driven by employees commuting to and from work. The actions to reduce the number of vehicle miles driven for fleet vehicles, if applicable.

2.5 Third Stage Episodes

2.5.1 A statement as to whether the company will operate as though the day was a major national holiday and if not, a statement why.

3.0 Plan Submittal

3.1 The owner or operator of any governmental, business, commercial, or industrial activity or facility listed in Sections 1.0 and 2.0 shall submit a stationary source curtailment plan and/or traffic abatement plan to the APCO. Affected governmental, business, commercial, or industrial facilities shall submit the required plan(s) within 45 days after notification that such plans are required. If the required plan is not submitted within the above time limit, the applicant shall be considered to be in violation of the District's Rules and Regulations.

3.2 The owner or operator of any industrial, business, governmental or commercial establishment required to submit a plan by this rule shall be notified by the APCO or his authorized representative if the plan is approved or disapproved according to the following schedule:

3.2.1 For sources with emissions greater than or equal to 500 tons per year or for establishments employing 400 or more employees per shift, within 45 days after receipt.

3.2.2 For sources with emissions greater than 100 tons per year or for establishments employing more than 200 and less than 400 employees per shift, within 90 days after receipt.

3.2.3 For sources with emissions greater than 100 tons per year or establishments employing 100 to 200 employees per shift, within 180 days after receipt.

3.3 The owner or operator of any industrial, business, governmental or commercial establishment shall be notified by the APCO or his authorized representative within 30 days after the plan has been evaluated, if the plan is disapproved. Any plan that is disapproved shall be revised and resubmitted to the District within 30 days of receipt of the notice of disapproval.

3.4 All electric utilities that file plans for energy conservation, load reduction or load shedding with the Public Utilities Commission or the Energy Resources Conservation and Development Commission shall file copies of such plans with the District and with the ARB. Consumers requested by an electric utility to prepare electrical load reduction plans shall file such plans with the District and ARB.

3.5 A copy of the stationary source curtailment and/or traffic abatement plan approved in accordance with the provisions of this rule shall be on file and readily available on the premises to any person authorized to enforce the provisions of this rule.

4.0 The APCO shall prepare plans for inspection of sources subject to mandatory abatement to assure compliance and to determine the effects of abatement.

9/28/94

RULE 6140 EPISODE ABATEMENT PLAN (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Requirements

The Air Pollution Control Board, the District Counsel and the Emergency Action Committee (if one is appointed) after study of all pertinent information relating to the concentration of air contaminants shall recommend to the APCO the following episode abatement plan, any combination of the following plan or other traffic abatement strategies that will abate the air pollution episode.

	EPISODE STAGE		
STRATEGY	1	2	3
Voluntarily reduce traffic	X	X	X
Curtail the use of some paint spray booths, vapor degreasers and other hydrocarbon emitting equipment	X	X	X
Ban nonessential government vehicles		X	X
Close admission to public recreation facilities		X	X
Close nonessential government offices		X	X
Ban fleet vehicles - excluding gas fueled		X	X
Close admission to private recreation facilities		X	X
Close admission to regional shopping centers		X	X
Close schools and colleges		X	X
Close admission to downtown retail and service business		X	X
Ban delivery service of all non-perishables		X	X
Curtail Stationary source operations		X	X
Ban non-essential service calls		X	X
Close establishments with 100 or more employees		X	X
Close admission to all other retail and service business		X	X
Close other industrial and large emission sources		X	
Ban large scale commercial and industrial spray painting			X
Suspend activities, such as roofing, asphalt paving, and surface coating where the use of large quantities of volatile organic material is involved			X

	EPISODE STAGE		
STRATEGY	1	2	3
Shut down combustion sources of carbon monoxide emissions in the area of the episode		X	
Request the public to evacuate the area of the carbon monoxide episode			X

9/25/94

RULE 6150 ENFORCEMENT (Adopted May 21, 1992, Amended December 17, 1992)

1.0 Requirements

When an episode has been declared, the APCO, Sheriff, Fire Chief, their deputies and all other peace officers within the affected area(s) shall enforce the appropriate provisions of this regulation and all orders of the Air Pollution Control Board or the APCO made pursuant to this regulation against any person who having knowledge of the declaration of an episode refuses to comply with the rules set forth in this regulation or any order of the Air Pollution Control Board or the APCO made pursuant to this regulation.

RULE 8011 GENERAL REQUIREMENTS (Adopted November 15, 2001; Amended August 19, 2004)

1.0 Purpose

The purpose of Regulation VIII (Fugitive PM10 Prohibitions) is to reduce ambient concentrations of fine particulate matter (PM10) by requiring actions to prevent, reduce or mitigate anthropogenic fugitive dust emissions.

The Rules contained in this Regulation have been developed pursuant to United States Environmental Protection Agency guidance for Serious PM10 Nonattainment Areas. The rules are applicable to specified anthropogenic fugitive dust sources. Fugitive dust contains PM10 and particles larger than PM10. Controlling fugitive dust emissions when visible emissions are detected will not prevent all PM10 emissions, but will substantially reduce PM10 emissions.

2.0 Applicability

The provisions of this rule are applicable to specified outdoor fugitive dust sources. The definitions, exemptions, requirements, administrative requirements, recordkeeping requirements, and test methods set forth in this rule are applicable to all Rules under Regulation VIII (Fugitive PM10 Prohibitions) of the Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on August 19, 2004 shall take effect.

3.0 Definitions

The following definitions shall be applicable to rules contained in Regulation VIII.

3.1 Agricultural Source: any activity or portion of land associated with the commercial growing of crops or the raising of fowl or animals.

3.2 Annual Average Daily Vehicle Trips (AADT): annual average 24-hour total of all vehicles counted on a road.

3.3 Anthropogenic: sources of pollution of, relating to, or resulting from the influence of human beings on nature.

3.4 APCO: the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District or his designee.

3.5 Blasting: any excavation or demolition conducted with the use of explosives.

3.6 Bulk Material: any unpackaged material with a silt content of more than 5%.

3.7 Bulk Material Handling, Storage, and/or Transporting Operation: includes but is not limited to the use of equipment, haul trucks, and/or motor vehicles for the loading, unloading, conveying, transporting, piling, stacking, screening, grading, or moving of bulk materials at an industrial, institutional, commercial and/or governmental owned or operated site or facility.

3.8 Carryout and Trackout: any and all materials that adheres to and agglomerates on vehicles, haul trucks, and/or equipment (including trailers, tires, etc.) and falls onto a paved public road or the paved shoulder of a paved public road.

3.9 Chemical/Organic Stabilization/Suppression: means controlling PM10 emissions from fugitive dust by applying any non-toxic chemical or organic dust suppressant, other than water, which meets any specifications, criteria, or tests required by any federal, state, or local water agency and is not prohibited for use by any applicable law, rule, or regulations.

3.10 Construction: any on-site mechanical activities preparatory to or related to the building, alteration, rehabilitation, or demolition of an improvement on real property, including, but not limited to, land clearing, excavation related to construction, land leveling, grading, cut and fill grading, and the erection or demolition of any structure. As used in Regulation VIII, a construction site may encompass several contiguous parcels, or may encompass only a portion of one parcel, depending on the relationship of the property boundaries to the actual construction activities.

3.11 Disturbed Surface Area: an area in which naturally occurring soils, or soils or other materials placed thereon, have been physically moved, uncovered, destabilized, or otherwise modified by grading, land leveling, scraping, cut and fill activities, excavation, brush and timber clearing, or grubbing, and soils on which vehicle traffic and/or equipment operation has occurred. An area is considered to be disturbed until the activity that caused the disturbance has been completed, and the disturbed area meets the stabilized surface conditions specified in this rule.

3.12 Dust Suppressants: includes water, hygroscopic materials and, chemical/organic stabilization/suppression materials.

3.13 Earthmoving Activities: The use of any equipment for an activity that may generate fugitive dust emissions, including, but not limited to, cutting and filling, grading, leveling, excavating, trenching, loading or unloading of bulk materials, demolishing, blasting, drilling, adding to or removing bulk of

materials from open storage piles, weed abatement through disking, and back-filling.

3.14 Emergency: any situation where immediate action on the part of a federal, state or local agency involved is needed and where the timing of such federal, state or local activities makes it impractical to meet the requirements of this Regulation, such as natural disasters, civil disturbances, or hazardous materials spills. Only an authorized official of a federal, state or local agency may declare an emergency when deemed necessary to protect the general public.

3.15 Enclosed Structure: a building with walls on all sides covered with a roof.

3.16 Event material: wind, storm, or water erosion and runoff resulting in the accumulation of mud, soil, or other material onto a public paved road surface travel lane or shoulder.

3.17 Excavation: any digging, trenching, quarrying, extraction, or tunneling.

3.18 Extraction: removal of minerals, aggregate, or fossil fuels from the earth by excavation; including mining, surface stripping, open pit excavation, or tunneling.

3.19 Fallow Land: agriculturally productive land which has been developed and used for agricultural purposes in the past that is allowed to lie idle during the growing season, including agricultural land that has been plowed, harrowed, and broken up without seeding.

3.20 Freeboard: the vertical distance between the top edge of a cargo container area and the highest point at which the bulk material contacts the sides, front, or back of a cargo container area.

3.21 Fueling and Service: an activity that involves the transfer of fuel into a vehicle/equipment fuel tank, and/or the repair and maintenance activity performed on vehicles/equipment.

3.22 Fugitive Dust: any solid particulate matter entrained in the ambient air which is caused by anthropogenic or natural activities which is emitted into the air without first passing through a stack or duct designed to control flow, including, but not limited to, emissions caused by movement of soil, vehicles, equipment, and windblown dust. This excludes particulate matter emitted directly in the exhaust of motor vehicles, from other fuel combustion devices, portable brazing, soldering, or welding equipment, and from pile drivers.

3.23 Gravel Pad: a layer of washed gravel, rock, or crushed rock located at the point of intersection of a paved public roadway and an unpaved work site exit, and maintained to dislodge mud, dirt, and/or debris from the tires of motor vehicles and/or haul trucks, prior to exiting the work site.

3.24 Grizzly: a device (i.e., rails, pipes, or grates) used to dislodge mud, dirt, and/or debris from the tires and undercarriage of motor vehicles or haul truck prior to leaving the work site.

3.25 Haul Truck: any fully or partially open-bodied, self-propelled vehicle including any non-motorized attachments used for transporting bulk materials, including, but not limited to, trailers or other conveyances which are connected to or propelled by the actual motorized portion of the vehicle.

3.26 Hygroscopic Materials: any material that is readily capable of absorbing moisture from the air.

3.27 Landfill Daily Cover: soil excavated and stockpiled from a landfill borrow site that is used for daily operations to cover solid waste, trash, garbage, or other waste at a landfill disposal site.

3.28 Landfill Disposal Site: a site where solid waste, trash, garbage, or other waste is disposed of by burying between layers of earth.

3.29 Land Preparation: any activity that disturbs the natural condition of land, including, but not limited to, brush or timber clearing, grubbing, scraping, ground excavation, land leveling, or grading.

3.30 Limit Visible Dust Emissions to 20% Opacity: Visible Dust Emissions (VDE) of such opacity to obscure a certified observer's view to a degree less than an opacity of 20 percent in accordance with the test methods in Appendix A, Sections 1 and 2 of this rule.

3.31 Local Agency: a city, county, or special district with jurisdiction over public roads or having land use authority.

3.32 Modified Road: any road that is widened or improved so as to increase traffic capacity or that has been reconstructed. This term does not include road maintenance, repair, chip seal, pavement or roadbed rehabilitation that does not affect roadway geometrics, or surface overlay work.

3.33 New Paved Road: any paved road segment constructed or modified after May 15, 2002. (See the definition of paved road in this rule).

3.34 Off-field Agricultural Source: any agricultural source that meets the definition of: outdoor handling, storage and transport of bulk material; paved road; unpaved road; or unpaved vehicle/equipment traffic area

3.35 On-field Agricultural Source: any agricultural source that is not an off-field agricultural source, including:

3.35.1 activities conducted solely for the purpose of preparing land for the growing of crops or the raising of fowl or animals, such as brush or timber clearing, grubbing, scraping, ground excavation, land leveling, grading, turning under stalks, disking, or tilling;

3.35.2 drying or pre-cleaning of agricultural crop material on the field where it was harvested;

3.35.3 handling or storage of agricultural crop material that is baled, cubed, pelletized, or long-stemmed, on the field where it was harvested, and the handling of fowl or animal feed materials at sites where animals or fowl are raised;

3.35.4 disturbances of cultivated land as a result of fallowing, planting, fertilizing or harvesting.

3.36 Open Area: any of the following described in subsection 3.35.1 through subsection 3.35.3 of this rule. For the purpose of this rule, vacant portions of residential or commercial lots and contiguous parcels that are immediately adjacent to and owned and/or operated by the same individual or entity are considered one open area. An open area does not include any unpaved vehicle/equipment traffic area as defined in this rule.

3.36.1 an unsubdivided or undeveloped land adjoining a developed or a partially developed residential, industrial, institutional, governmental, or commercial area.

3.36.2 a subdivided residential, industrial, institutional, governmental, or commercial lot, which contains no approved or permitted building or structures of a temporary or permanent nature.

3.36.3 a partially developed residential, industrial, institutional, governmental, or commercial lot and contiguous lots under common ownership.

3.37 Open Storage Pile: any accumulation of bulk material, stored outside a building or warehouse.

3.38 Open-Pit Mine: an excavation for a mining operation which, excluding entrances and egresses, is encircled by a “high-wall” at least 10 feet high. A “high wall” is a berm or cut having a slope of at least 1:1.

3.39 Operation: any activity, process, or project described in the applicability sections of the Rules under Regulation VIII.

3.40 Outdoor Handling, Storage, and Transport: handling (including loading and unloading), storage, and transport, and any accumulation of bulk material, temporarily or permanently stored outside of an enclosed structure.

3.41 Owner/Operator: includes, but is not limited to, any person who leases, supervises, or operates equipment, or owns/operates a fugitive dust source, in addition to the normal meaning of owner or operator.

3.42 Particulate matter: any material emitted or entrained into the air as liquid or solid particles, with the exception of uncombined water.

3.43 Paved Road/Area: any road/area that is covered by concrete, asphaltic concrete, asphalt, or other materials which provides structural support for vehicles.

3.44 Person: any individual, public and private corporation, government agency, partnership, association, firm, trust, estate, or any other legal entity which is recognized by law as the subject of rights and duties.

3.45 PM10: particulate matter with an aerodynamic diameter smaller than or equal to a nominal ten (10) microns as measured by the applicable State and Federal reference test methods.

3.46 PM10-Efficient Street Sweeper: a street sweeper which has been certified by the South Coast Air Quality Management District (SCAQMD) to comply with the District's performance standards set forth in SCAQMD Rule 1186 utilizing the test methods set forth in SCAQMD Rule 1186, Appendix A.

3.47 Private Road: any road not defined as public.

3.48 Public Road: any road operated by a public road agency and maintained for unrestricted legal vehicle access.

3.49 Road: any road or street, highway, freeway, alley, way, access easement or driveway.

3.50 Road Length: the total centerline distance of all contiguous (connected) segments of an owner's road, regardless of change of direction, road name, or surface, or intersection with a road not owned or operated by the owner.

3.51 Road Segment: the portion of a road between two intersections, or between an intersection and the road's terminus.

3.52 Roadmix: a mixture of tank bottoms from crude oil storage tanks, material from crude oil spills, or other crude-oil-containing soil mixed with aggregates and soils, that is used as a base or cover material for roads, parking lots, berms, tank and well locations, or similar applications.

3.53 Rural: areas not classified as urban constitute "rural."

3.54 Shipping, Receiving, and Transfer: an activity that involves handling, processing, and movement of materials, supplies or equipment.

3.55 Silt: any aggregate material with a particle size of less than 75 micrometers in diameter, which passes through a No. 200 Sieve. For the purpose of all Rules under Regulation VIII, the silt content level is assumed to be 5 percent or greater, unless a person can show, by sampling and analysis, using the test method in Section 6.1.4 of this rule, that the silt content is less than 5 percent.

3.56 Site: real property or land used or set aside for any specific use.

3.57 Soil Stabilization: the process used to control PM10 emissions from fugitive dust for an extended period of time by applying dust suppressants or planting vegetative cover.

3.58 Stabilized Surface: any disturbed surface area or open bulk material storage pile that is resistant to wind blown fugitive dust emissions. A surface is considered to be stabilized if it meets at least one of the following conditions specified in this Section and as determined by the test methods specified in Appendix B of this rule:

3.58.1 A visible crust; or

3.58.2 A threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements of 100 centimeters per second or greater; or

3.58.3 A flat vegetative cover of at least 50 percent that is attached or rooted vegetation; or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind; or

3.58.4 A standing vegetative cover of at least 30 percent that is attached or rooted vegetation with a predominant vertical orientation; or

3.58.5 A standing vegetative cover that is attached or rooted vegetation with a predominant vertical orientation that is at least 10 percent and where the TFV is at least 43 centimeters per second when corrected for non-erodible elements; or

3.58.6 A surface that is greater than or equal to 10 percent of non-erodible elements such as rocks, stones, or hard-packed clumps of soil.

3.59 Stabilized Unpaved Road/Unpaved shoulder: any unpaved road, unpaved shoulder, or unpaved vehicle/equipment traffic area surface which meets the definition of stabilized surface as determined by the test methods in Appendix B, Section 3 of this rule, and where VDE is limited to 20% opacity.

3.60 Temporary Unpaved Road: any unpaved road surface which is created to support a temporary or periodic activity, and the use of such road surface is limited to vehicle access for a period of not more than six months during any consecutive three-year period. Temporary unpaved roads must also comply with the definition of section 3.59.

3.61 Three-sided Structure: A building with walls on three sides with or without a roof. 3.62 Threshold Friction Velocity (TFV): is the corrected velocity necessary to initiate soil erosion as determined by the test method specified in Section 6.0 of this rule. The lower the TFV, the greater the propensity for fine particles to be lifted at relatively low wind speeds.

3.63 Trackout Control Device: a gravel pad, grizzly, wheel wash system, or a paved area located at the point of intersection of an unpaved area and a paved road that prevents or controls trackout.

3.64 Unpaved Road: any road that is not covered by one of the materials described in the paved road definition.

3.65 Unpaved Access/Haul Road: any road or path that is not covered by one of the materials described in the paved road definition that is associated with any construction, demolition, excavation, extraction, and other earthmoving activity and used by vehicles, equipment, haul trucks, or any conveyances to travel within a site, to move materials from one part of a site to another part within the same site, or to provide temporary access to a site.

3.66 Unpaved Vehicle/Equipment Traffic Area: any nonresidential area that is not covered by asphalt, recycled asphalt, asphaltic concrete, concrete, or concrete

pavement that is used for fueling and servicing; shipping, receiving and transfer; or parking or storing equipment, haul trucks, vehicles, and any conveyances.

3.67 Urban Area: an area within an incorporated city boundary or within unincorporated areas completely surrounded by an incorporated city

3.68 Vehicle: A device by which any person or property may be propelled, moved, or drawn, including mobile equipment, excepting aircraft or watercraft or devices moved exclusively by human or animal power or used exclusively upon rails or tracks.

3.69 Vehicle Daily Trips (VDT): The 24-hour total (midnight to midnight) count of all vehicles traveling over a survey point on a road segment or unpaved vehicle/equipment traffic area. The survey point must represent the most heavily traveled portion of the road segment or unpaved vehicle/equipment traffic area.

3.70 Visible Dust Emissions (VDE): dust emissions that are visible to an observer.

3.71 Wind Barrier: a fence or structure constructed, or row of trees planted, to reduce the shearing effects caused by wind thereby reducing or eliminating the amount of entrained fugitive dust.

3.72 Wind Generated Fugitive Dust: visible emissions from any disturbed surface area which are generated by wind action alone.

3.73 Wheel Wash System: a system that uses water to dislodge mud, dirt and/or other debris from the tires and undercarriage of vehicles and/or haul trucks, prior to exiting the work site.

3.74 Workday: a day on which work is performed as distinguished from a day off. For the purposes of this Regulation, a workday may be any period of hours or shift within a 24-hour period.

4.0 Exemptions

4.1 Emergency activities performed to ensure public health and safety are exempt from Regulation VIII. Emergency activities lasting more than 30 days shall be subject to this regulation, except where compliance would limit the effectiveness of the emergency activity performed to ensure public health and safety.

4.2 Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions. Within one hour of completion of active operations, a

person/owner must immediately comply with the requirements of Regulation VIII.

4.3 Activities conducted at an elevation of 3,000 feet or higher above sea level.

4.4 On-field agricultural sources.

5.0 General Requirements

5.1 Materials used for chemical/organic stabilization of soils, including petroleum resins, asphaltic emulsions, acrylics, and adhesives shall not violate State Water Quality Control Board standards for use as a soil stabilizer. Materials accepted by the California Air Resources Board (ARB) and the United States Environmental Agency (EPA), and which meet State water quality standards, shall be considered acceptable to the APCO.

5.2 Any material prohibited for use as dust suppressant by EPA, the ARB, or other applicable law, rule, or regulation is also prohibited under Regulation VIII.

5.3 Use of hygroscopic materials may be prohibited by the APCO in areas lacking sufficient atmospheric moisture of soil for such materials to effectively reduce fugitive dust emissions. The atmospheric moisture of soil is considered to be sufficient if it meets the application specifications of the hygroscopic product manufacturer. Use of such materials may be approved in conjunction with sufficient wetting of the controlled area.

5.4 Any use of dust suppressants or gravel pads, and paving materials such as asphalt or concrete for paving, shall comply with other applicable District Rules.

6.0 Administrative Requirements

6.1 Test Methods

The test methods specified in this section shall be used to determine compliance with the requirements of all rules under Regulation VIII.

6.1.1 Determination of VDE Opacity

Opacity observations to determine compliance with VDE standards shall be conducted in accordance with the test procedures for "Visual Determination of Opacity" as described in Appendix A of this rule. Opacity observations for sources other than unpaved traffic areas (e.g.,

roads, parking areas) shall be conducted per Section 2 of Appendix A and shall require 12 readings at 15-second intervals.

6.1.2 Determination of Stabilized Surface

Observations to determine compliance with the conditions specified for a stabilized surface, in any inactive disturbed surface area, whether at a work site that is under construction, at a work site that is temporarily or permanently inactive, or on an open area and vacant lot, shall be conducted in accordance with the test methods described in Appendix B of this rule. If a disturbed surface area fails all of the specified tests, then the surface shall not be considered stabilized.

6.1.3 Determination of Soil Moisture Content

Soil moisture content shall be determined by using ASTM Method D2216-98 (Standard Test Method For Laboratory Determination Of Water [Moisture] Content of Soil and Rock By Mass), or other equivalent test methods approved by the EPA, ARB, and the APCO.

6.1.4 Determination of Silt Content for Bulk Materials

Silt content of a bulk material shall be determined by ASTM Method C 136a (Standard Test Method For Sieve Analysis Of Fine and Coarse Aggregates), or other equivalent test methods approved by EPA, ARB, and the APCO.

6.1.5 Determination of Silt Content for Unpaved Roads and Unpaved Vehicle/Equipment Traffic Areas

Silt Content for unpaved roads and unpaved vehicle/equipment traffic areas shall be determined by using Section 3 of Appendix B of this Rule or other equivalent test methods approved by EPA, ARB, and the APCO.

6.1.6 Determination of Threshold Friction Velocity (TFV)

TFV shall be determined according to the sieving field procedure contained in “Determination of Threshold Friction Velocity (TFV),” as described in Appendix B of this rule.

6.2 Recordkeeping Requirements

A person or owner/operator shall maintain records and any other supporting documents to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. An owner/operator subject to Rule 2520 (Federally Mandated Operating Permits) shall keep the records for five years. Records shall be made available to the APCO upon request.

7.0 Fugitive PM10 Management Plan for Unpaved Roads and Unpaved Vehicle/Equipment Traffic Areas

As a compliance alternative for Rule 8061 section 5.2 and Rule 8071 section 5.1, an operator may implement a Fugitive PM10 Management Plan (FPMP) that is designed to achieve 50% control efficiency and has been approved by the APCO. The FPMP shall be implemented on all days that traffic exceeds, or is expected to exceed, the number of annual average daily vehicle trips or vehicle trips per day as specified in Rules 8061, 8071, and 8081. The owner/operator remains subject to all requirements of the applicable rules of Regulation VIII that are not addressed by the FPMP. It should be noted that the FPMP is not a compliance option for any requirement for a stabilized surface as defined in Rule 8011. The requirements for FPMPs for agricultural sources are specified in Rule 8081 (Agricultural Sources) section 7.0.

7.1 An owner/operator shall provide the proposed FPMP to the APCO or his/her designee via fax, mail, or in person. The APCO shall approve, disapprove, or conditionally approve each proposed FPMP. An FPMP shall not be considered APCO-approved until the operator has received written approval from the APCO.

7.2 An owner/operator may submit one FPMP covering multiple unpaved roads and unpaved vehicle/equipment traffic areas.

7.3 An owner/operator shall retain a copy of an APCO-approved FPMP at the operators place of business and make it available for inspection by the APCO or his designee during normal business hours. The APCO-approved FPMP shall remain valid until notification by the APCO that it is no longer valid, or until the owner/operator notifies the APCO that the owner/operator has permanently discontinued implementing the FPMP.

7.4 Failure to comply with the provisions of an APCO-approved FPMP is deemed to be a violation of this rule.

7.5 A FPMP shall contain all of the following information:

7.5.1 Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submittal, and implementation of the FPMP, and of person(s) responsible for the unpaved road or traffic area.

7.5.2 A plot plan or map which shows the location of each unpaved road or traffic area to be covered by the FPMP, and the total length (miles) of unpaved roads, and the total area (acres) of the unpaved traffic areas.

7.5.3 The months (and weeks, if known) of the year that vehicle traffic is expected to reach or exceed the number of vehicle trips as specified in Rules 8061, 8071, and 8081, and the types of vehicles (e.g., passenger vehicles, trucks, mobile equipment) expected on each road or traffic area. As stated above, the FPMP shall be implemented on all days that traffic exceeds, or is expected to exceed, the number of vehicle trips as specified in Rules 8061, 8071, and 8081.

7.5.4 Dust suppressants, gravel, and/or vegetative materials to be applied, including: product specifications; manufacturer's usage instructions (method, frequency, and intensity of application); type, number, and capacity of application equipment; and information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application.

7.5.5 A description of the condition of the treated surfaces to be achieved as a result of the use of the suppressant or other dust control material.

APPENDIX A
Visual Determination of Opacity

SECTION 1 Test Method For Unpaved Roads and Unpaved Traffic Areas
SECTION 2 Test Method For Time-Averaged Regulations
SECTION 3 Qualification and Testing

SECTION 1 TEST METHOD FOR UNPAVED ROADS AND UNPAVED TRAFFIC AREAS

1.0 Opacity Test Method. The purpose of this test method is to estimate the percent opacity of fugitive dust plumes caused by vehicle movement on unpaved roads and unpaved traffic areas. This method can only be conducted by an individual who has received certification as a qualified observer. Qualification and testing requirements can be found in Section 3. of this appendix.

a. Step 1: Stand at least 16.5 feet from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Following the above requirements, make opacity observations so that the line of vision is approximately perpendicular to the dust plume and wind direction. If multiple plumes are involved, do not include more than one plume in the line of sight at one time.

b. Step 2: Record the fugitive dust source location, source type, method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position to the fugitive dust source, and color of the plume and type of background on the visible emission observation form both when opacity readings are initiated and completed.

c. Step 3: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of vision. Make opacity observations approximately 1 meter above the surface from which the plume is generated. Note that the observation is to be made at only one visual point upon generation of a plume, as opposed to visually tracking the entire length of a dust plume as it is created along a surface. Make two observations per vehicle, beginning with the first reading at zero seconds and the second reading at five seconds. The zero-second observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume but, instead, observe the plume briefly at zero seconds and then again at five seconds.

d. Step 4: Record the opacity observations to the nearest 5% on an observational record sheet. Each momentary observation recorded represents the average opacity of emissions for a 5-second period. While it is not required by the test method, EPA recommends that the observer estimate the size of vehicles which generate dust plumes for which readings are taken (e.g. mid-size passenger car or heavy-duty truck) and the approximate speeds the vehicles are traveling when readings are taken.

e. Step 5: Repeat Step 3 (Section 1 c) of this appendix) and Step 4 (Section 1 (d) of this appendix) until you have recorded a total of 12 consecutive opacity readings. This will occur once six vehicles have driven on the source in your line of observation for which you are able to take proper readings. The 12 consecutive readings must be taken within the same period of observation but must not exceed 1 hour. Observations immediately preceding and following interrupted observations can be considered consecutive.

f. Step 6: Average the 12 opacity readings together. If the average opacity reading equals 20% or lower, the source is in compliance with the opacity standard described in Rule 8011 of this rule.

SECTION 2 TEST METHOD FOR VISUAL DETERMINATION OF OPACITY OF EMISSIONS FROM SOURCES FOR TIME-AVERAGED REGULATIONS

2.0 Applicability. This method is applicable for the determination of the opacity of emissions from sources of visible emissions for time-averaged regulations. A time-averaged regulation is any regulation that requires averaging visible emission data to determine the opacity of visible emissions over a specific time period.

2.1 Principle. The opacity of emissions from sources of visible emissions is determined visually by an observer qualified according to the procedures of Section 3 of this appendix.

2.2 Procedures. An observer qualified, in accordance with Section 3 of this appendix, shall use the following procedures for visually determining the opacity of emissions.

a. Position. Stand at a position at least 5 meters from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. The observer may follow the fugitive dust plume generated by mobile

earthmoving equipment, as long as the sun remains oriented in the 140° sector to the back. As much as possible, if multiple plumes are involved, do not include more than one plume in the line of sight at one time.

b. Field Records. Record the name of the site, fugitive dust source type (i.e., pile, material handling (i.e., transfer, loading, sorting)), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the fugitive dust source, and color of the plume and type of background on the visible emission observation from when opacity readings are initiated and completed.

c. Observations. Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. For storage piles, make opacity observations approximately 1 meter above the surface from which the plume is generated. For extraction operations and the loading of haul trucks in open-pit mines, make opacity observations approximately one meter above the rim of the pit. The initial observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume, but instead observe the plume momentarily at 15-second intervals. For fugitive dust from earthmoving equipment, make opacity observations approximately 1 meter above the mechanical equipment generating the plume.

d. Recording Observations. Record the opacity observations to the nearest 5% every 15 seconds on an observational record sheet. Each momentary observation recorded represents the average opacity of emissions for a 15-second period. If a multiple plume exists at the time of an observation, do not record an opacity reading. Mark an "x" for that reading. If the equipment generating the plume travels outside of the field of observation, resulting in the inability to maintain the orientation of the sun within the 140° sector or if the equipment ceases operating, mark an "x" for the 15- second interval reading. Readings identified as "x" shall be considered interrupted readings.

e. Data Reduction For Time-Averaged Regulations. For each set of 12 or 24 consecutive readings, calculate the appropriate average opacity. Sets must consist of consecutive observations, however, readings

immediately preceding and following interrupted readings shall be deemed consecutive and in no case shall two sets overlap, resulting in multiple violations.

SECTION 3 QUALIFICATION AND TESTING.

3.1 Certification Requirements. To receive certification as a qualified observer, a candidate must be tested and demonstrate the ability to assign opacity readings in 5% increments to 25 different black plumes and 25 different white plumes, with an error not to exceed 15% opacity on any one reading and an average error not to exceed 7.5% opacity in each category. Candidates shall be tested according to the procedures described in section 3.2 of this appendix. Any smoke generator used pursuant to section 3.3 of this appendix shall be equipped with a smoke meter, which meets the requirements of section 3.1 of this appendix. Certification tests that do not meet the requirements of sections 3.2 and 3.3 of this appendix are not valid. The certification shall be valid for a period of 6 months, and after each 6-month period the qualification procedures must be repeated by an observer in order to retain certification.

3.2 Certification Procedure. The certification test consists of showing the candidate a complete run of 50 plumes, 25 black plumes and 25 white plumes, generated by a smoke generator. Plumes shall be presented in random order within each set of 25 black and 25 white plumes. The candidate assigns an opacity value to each plume and records the observation on a suitable form. At the completion of each run of 50 readings, the score of the candidate is determined. If a candidate fails to qualify, the complete run of 50 readings must be repeated in any retest. The smoke test may be administered as Section of a smoke school or training program, and may be preceded by training or familiarization runs of the smoke generator, during which candidates are shown black and white plumes of known opacity.

3.3 Smoke Generator Specifications. Any smoke generator used for the purpose of section 3.2 of this appendix shall be equipped with a smoke meter installed to measure opacity across the diameter of the smoke generator stack. The smoke meter output shall display in-stack opacity, based upon a path length equal to the stack exit diameter on a full 0% to 100% chart recorder scale. The smoke meter optical design and performance shall meet the specifications shown in Table A of this appendix. The smoke meter shall be calibrated as prescribed in section 3.3.a of this appendix prior to conducting each smoke reading test. At the completion of each test, the zero and span drift shall be checked, and if the drift exceeds plus or minus 1% opacity, the condition shall be corrected prior to conducting any subsequent test runs.

The smoke meter shall be demonstrated, at the time of installation, to meet the specifications listed in Table A of this appendix. This demonstration shall be repeated following any subsequent repair or replacement of the photocell or associated electronic circuitry, including the chart recorder or output meter, or every 6 months, whichever occurs first.

a. Calibration. The smoke meter is calibrated after allowing a minimum of 30 minutes warm-up by alternately producing simulated opacity of 0% and 100%. When stable response at 0% or 100% is noted, the smoke meter is adjusted to produce an output of 0% or 100%, as appropriate. This calibration shall be repeated until stable 0% and 100% readings are produced without adjustment. Simulated 0% and 100% opacity values may be produced by alternately switching the power to the light source on and off while the smoke generator is not producing smoke.

b. Smoke Meter Evaluation. The smoke meter design and performance are to be evaluated as follows:

(1) Light Source. Verify, from manufacturer's data and from voltage measurements made at the lamp, as installed, that the lamp is operated within plus or minus 5% of the nominal rated voltage.

(2) Spectral Response Of Photocell. Verify from manufacturer's data that the photocell has a photopic response (i.e., the spectral sensitivity of the cell shall closely approximate the standard spectral-luminosity curve for photopic vision which is referenced in (b) of Table A of this appendix).

(3) Angle Of View. Check construction geometry to ensure that the total angle of view of the smoke plume, as seen by the photocell, does not exceed 15°. Calculate the total angle of view as follows:

$$\text{Total Angle Of View} = 2\tan^{-1} d/2L$$

Where:
d = The photocell diameter + the diameter of the limiting aperture; and
L = The distance from the photocell to the limiting aperture.

The limiting aperture is the point in the path between the photocell and the smoke plume where the angle of view is most restricted. In smoke generator smoke meters, this is normally an orifice plate.

(4) Angle Of Projection. Check construction geometry to ensure that the total angle of projection of the lamp on the smoke plume does not exceed 15°. Calculate the total angle of projection as follows:

$$\text{Total Angle Of Projection} = 2\tan^{-1} d/2L$$

Where:
d= The sum of the length of the lamp filament + the diameter of the limiting aperture; and
L = The distance from the lamp to the limiting aperture.

(5) Calibration Error. Using neutral-density filters of known opacity, check the error between the actual response and the theoretical linear response of the smoke meter. This check is accomplished by first calibrating the smoke meter, according to section 3.3(a) of this appendix, and then inserting a series of three neutral-density filters of nominal opacity of 20%, 50%, and 75% in the smoke meter path length. Use filters calibrated within plus or minus 2%. Care should be taken when inserting the filters to prevent stray light from affecting the meter. Make a total of five nonconsecutive readings for each filter. The maximum opacity error on any one reading shall be plus or minus 3%.

(6) Zero And Span Drift. Determine the zero and span drift by calibrating and operating the smoke generator in a normal manner over a 1-hour period. The drift is measured by checking the zero and span at the end of this period.

(7) Response Time. Determine the response time by producing the series of five simulated 0% and 100% opacity values and observing the time required to reach stable response. Opacity values of 0% and 100% may be simulated by alternately switching the power to the lightsource off and on while the smoke generator is not operating.

Table A. Smoke Meter Design And Performance Specifications
Parameter Specification

a. Light Source: Incandescent lamp operated at nominal rated voltage.
b. Spectral response of photocell: Photopic (daylight spectral response of the human eye).
c. Angle of view: 15° maximum total angle.
d. Angle of projection : 15° maximum total angle.
e. Calibration error: Plus or minus3% opacity, maximum.
f. Zero and span drift: Plus or minus 1% opacity, 30 minutes.
g. Response time: Less than or equal to 5 seconds

APPENDIX B
Determination of Stabilization

SECTION 1 Test Methods for Determining Stabilization

SECTION 2 Visible Crust Determination
SECTION 3 Determination of Silt Content for Unpaved Roads and Unpaved Vehicle/Equipment Traffic Areas
SECTION 4 Determination of Threshold Friction Velocity
SECTION 5 Determination of Flat Vegetative Cover
SECTION 6 Determination of Standing Vegetative Cover
SECTION 7 Rock Test Method

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1. Test Methods For Determining Stabilization.

The test methods described in Section 2 through Section 7 of this appendix shall be used to determine whether an area has a stabilized surface. Should a disturbed area contain more than one type of disturbance, soil, vegetation, or other characteristics, which are visibly distinguishable, test each representative surface separately for stability, in an area that represents a random portion of the overall disturbed conditions of the site, according to the appropriate test methods in Section 2 through Section 7 of this appendix, and include or eliminate it from the total size assessment of disturbed surface area(s) depending upon test method results.

2. Visible Crust Determination.

2.1 Where a visible crust exists, drop a steel ball with a diameter of 15.9 millimeters (0.625 inches) and a mass ranging from 16-17 grams from a distance of 30 centimeters (one foot) directly above (at a 90° angle perpendicular to) the soil surface. If blowsand is present, clear the blowsand from the surfaces on which the visible crust test method is conducted. Blowsand is defined as thin deposits of loose uncombined grains covering less than 50% of a site which have not originated from the representative site surface being tested. If material covers a visible crust, which is not blowsand, apply the test method in Section 4 of this appendix to the loose material to determine whether the surface is stabilized.

2.2 A sufficient crust is defined under the following conditions: once a ball has been dropped according to section 2.1. of this appendix, the ball does not sink into the surface, so that it is partially or fully surrounded by loose grains and, upon removing the ball, the surface upon which it fell has not been pulverized, so that loose grains are visible.

2.3 Drop the ball three times within a survey area that measures 1 foot by 1 foot and that represents a random portion of the overall disturbed conditions of the site. The survey area shall be considered to have passed the Visible Crust Determination Test if at least two out of the three times that the ball was dropped, the results met the criteria in section 2.2 of this appendix. Select at least two other survey areas that represent a random portion of the overall disturbed conditions of the site, and repeat this procedure. If the results meet the criteria of section 2.2 of this appendix for all of the survey areas tested, then the site shall be considered to have passed the Visible Crust Determination Test and shall be considered sufficiently crusted.

2.4 At any given site, the existence of a sufficient crust covering one portion of the site may not represent the existence or protectiveness of a crust on another portion of the site. Repeat the visible crust test as often as necessary on each random portion of the overall conditions of the site for an accurate assessment.

3. Determination of Silt Content for Unpaved Roads and Unpaved Vehicle/Equipment Traffic Areas

The purpose of this test method is to estimate the silt content of the trafficked parts of unpaved roads and unpaved vehicle/equipment traffic areas. The higher the silt content, the more fine dust particles that are released when vehicles travel on unpaved roads and unpaved vehicle/equipment traffic areas.

3.1 Equipment:

a. A set of sieves with the following openings: 4 millimeters (mm), 2mm, 1 mm, 0.5 mm and 0.25 mm, a lid, and collector pan.
b. A small whisk broom or paintbrush with stiff bristles and dustpan 1ft. in width (the broom/brush should preferable have one, thin row of bristles no longer than 1.5 inches in length).
c. A spatula without holes.
d. A small scale with half-ounce increments (e.g., postal/package scale).
e. A shallow, lightweight container (e.g., plastic storage container).
f. A sturdy cardboard box or other rigid object with a level surface.
g. A basic calculator.
h. Cloth gloves (optional for handling metal sieves on hot, sunny days).
i. Sealable plastic bags (if sending samples to a laboratory).
j. A pencil/pen and paper.

3.2 Step 1: Look for a routinely traveled surface, as evidenced by tire tracks [Only collect samples from surfaces that are not damp due to precipitation or dew. This statement is not meant to be a standard in itself for dampness where watering is being used as a control measure. It is only intended to ensure that

surface testing is done in a representative manner.] Use caution when taking samples to ensure personal safety with respect to passing vehicles. Gently press the edge of a dustpan (1 foot in width) into the surface four times to mark an area that is 1 square foot. Collect a sample of loose surface material into the dustpan, minimizing escape of dust particles. Use a spatula to lift heavier elements such as gravel. Only collect dirt/gravel to an approximate depth of 3/8 inch or 1 cm in the 1 square foot area. If you reach a hard, underlying subsurface that is $<$3/8 inch in depth, do not continue collecting the sample by digging into the hard surface. In other words, you are only collecting a surface sample of loose material down to 1cm. In order to confirm that samples are collected to a 1cm depth, a wooden dowel or other similar narrow object a least one-foot in length can be laid horizontally across the survey area while a metric rule is held perpendicular to the dowel. (Optional: At this point, you can choose to place the sample collected into a plastic bag or container and take it to an independent laboratory for silt content analysis. A reference to the procedure the laboratory is required to follow is at the end of this section)

3.3 Step 2: Place a scale on a level surface. Place a lightweight container on the scale. Zero the scale with the weight of the empty container on it. Transfer the entire sample collected in the dustpan to the container, minimizing escape of dust particles. Weight the sample and record its weight.

3.4 Step 3: Stack a set of sieves in order according to the size openings specified above, beginning with the largest size opening (4 mm) at the top. Place a collector pan underneath the bottom (0.25 mm) sieve.

3.5 Step 4: Carefully pour the sample into the sieve stack, minimizing escape of dust particles by slowly brushing material into the stack with a whiskbroom or brush. (On windy days, use the trunk or door of a vehicle as a wind barrier.) Cover the stack with a lid. Lift up the sieve stack and shake it vigorously up and down and sideways for at least 1 minute.

3.6 Step 5: Remove the lid from the stack and disassemble each sieve separately, beginning with the top sieve. As you remove each sieve, examine it to make sure that all of the material has been sifted to the finest sieve through which it can pass (e.g., material in each sieve (besides the top sieve that captures a range of larger elements) should look the same size). If this is not the case, re-stack the sieves and collector pan, cover the stack with the lid, and shake it again for at least 1 minute. (You only need to reassemble the sieve(s) that contain material, which requires further sifting.)

3.7 Step 6: After disassembling the sieves and collector pan, slowly sweep the material from the collector pan into the empty container originally used to collect and weight the entire sample. Take care to minimize escape of dust

particles. You do not need to do anything with material captured in the sieves – only the collector pan. Weigh the container with the materials from the collector pan and record its weight.

3.8 Step 7: If the source is an unpaved road, multiply the resulting weight by 0.38. If the source is an unpaved vehicle/equipment traffic area, multiply the resulting weight by 0.55. The resulting number is the estimated silt loading. Then, divide by the total weight of the sample you recorded earlier in Step 2 (section 3.3) and multiply by 100 to estimate the percent silt content.

3.9 Step 8: Select another two routinely traveled portions of the unpaved road or unpaved vehicle/equipment traffic area and repeat this test method. Once you have calculated the silt loading and percent silt content of the 3 samples collected, average your results together.

3.10 Step 9: Examine Results. If the average silt loading is less than 0.33 oz/ft^2, the surface is STABLE. If the average silt loading is greater than or equal to 0.33 oz/ft^2, then proceed to examine the average percent silt content. If the source is an unpaved road and the average percent silt content is 6% or less, the surface is STABLE. If the source is an unpaved parking lot and the average percent silt content is 8% or less, the surface is STABLE. If your field test results are within 2% of the standard (for example, 4%-8% silt content on an unpaved road) it is recommended that you collect 3 additional samples from the source according to Step 1 (section 3.2) and take them to an independent laboratory for silt content analysis.

3.11 Independent Laboratory Analysis: You may choose to collect samples from the source, according to Step 1 (section 3.2) and send them to an independent laboratory for silt content analysis rather than conduct the sieve field procedure. If so, the test method the laboratory is required to use is:
"Procedures For Laboratory Analysis for Surface/Bulk Dust Loading Samples", (Fifth Edition, Volume 1, Appendix C.2.3 "Silt Analysis", 1995), AP-42, Office of Air Quality Planning & Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina.

4. Determination Of Threshold Friction Velocity (TFV).

For disturbed surface areas that are not crusted or vegetated, determine threshold friction velocity (TFV) according to the following sieving field procedure (based on a 1952 laboratory procedure published by W. S. Chepil).

4.1 Obtain and stack a set of sieves with the following openings: 4 millimeters (mm), 2 mm, 1 mm, 0.5 mm, and 0.25 mm or obtain and stack a set of standard/commonly available sieves. Place the sieves in order according to size

openings, beginning with the largest size opening at the top. Place a collector pan underneath the bottom (0.25 mm) sieve. Collect a sample of loose surface material from an area at least 30 cm by 30 cm in size to a depth of approximately 1 cm using a brush and dustpan or other similar device. Only collect soil samples from dry surfaces (i.e. when the surface is not damp to the touch). Remove any rocks larger than 1 cm in diameter from the sample. Pour the sample into the top sieve (4 mm opening) and cover the sieve/collector pan unit with a lid. Minimize escape of particles into the air when transferring surface soil into the sieve/collector pan unit. Move the covered sieve/collector pan unit by hand using a broad, circular arm motion in the horizontal plane. Complete twenty circular arm movements, ten clockwise and ten counterclockwise, at a speed just necessary to achieve some relative horizontal motion between the sieves and the particles. Remove the lid from the sieve/collector pan unit and disassemble each sieve separately beginning with the largest sieve. As each sieve is removed, examine it for loose particles. If loose particles have not been sifted to the finest sieve through which they can pass, reassemble and cover the sieve/collector pan unit and gently rotate it an additional ten times. After disassembling the sieve/collector pan unit, slightly tilt and gently tap each sieve and the collector pan so that material aligns along one side. In doing so, minimize escape of particles into the air. Line up the sieves and collector pan in a row and visibly inspect the relative quantities of catch in order to determine which sieve (or whether the collector pan) contains the greatest volume of material. If a visual determination of relative volumes of catch among sieves is difficult, use a graduated cylinder to measure the volume. Estimate TFV for the sieve catch with the greatest volume using Table 1 of this appendix, which provides a correlation between sieve opening size and TFV.

Table 1. Determination Of Threshold Friction Velocity

Tyler Sieve No.	ASTM 11 Sieve No.	Opening (mm)	TFV (cm/s)
5	5	4	135
9	10	2	100
16	18	1	76
32	35	0.5	58
60	60	0.25	43
Collector Pan	---	--	30

4.2 Collect at least three soil samples which represent random portions of the overall conditions of the site, repeat the above TFV test method for each sample and average the resulting TFVs together to determine the TFV uncorrected for non-erodible elements. Non-erodible elements are distinct elements, in the random portion of the overall conditions of the site, that are larger than 1 cm in diameter, remain firmly in place during a wind episode, and inhibit soil loss by

consuming Section of the shear stress of the wind. Non-erodible elements include stones and bulk surface material but do not include flat or standing vegetation. For surfaces with non-erodible elements, determine corrections to the TFV by identifying the fraction of the survey area, as viewed from directly overhead, that is occupied by non-erodible elements using the following procedure. For a more detailed description of this procedure, see Section 6 (Test Methods For Stabilization-Rock Test Method) of this appendix. Select a survey area of 1 meter by 1 meter that represents a random portion of the overall conditions of the site. Where many non-erodible elements lie within the survey area, separate the non-erodible elements into groups according to size. For each group, calculate the overhead area for the non-erodible elements according to the following equations:

$$\text{Average Dimensions} = \text{(Average Length) x (Average Width)} \quad \text{Eq. 1}$$

$$\text{Overhead Area} = \text{(Average Dimensions) x (Number Of Elements)} \quad \text{Eq. 2}$$

$$\text{Total Overhead Area} = \text{Overhead Area Of Group 1} + \text{Overhead Area Of Group 2 (etc.)} \quad \text{Eq. 3}$$

$$\text{Total Frontal Area} = \text{Total Overhead Area/2} \quad \text{Eq. 4}$$

$$\text{Percent Cover Of Non-Erodible Elements} = \text{(Total Frontal Area/Survey Area) x 100} \quad \text{Eq. 5}$$

Note: Ensure consistent units of measurement (e.g., square meters or square inches when calculating percent cover).

Repeat this procedure on an additional two distinct survey areas that represent a random portion of the overall conditions of the site and average the results. Use Table 2 of this appendix to identify the correction factor for the percent cover of non-erodible elements. Multiply the TFV by the corresponding correction factor to calculate the TFV corrected for non-erodible elements.

Table 2. Correction Factors For Threshold Friction Velocity

Percent Cover Of Non-Erodible Elements	Correction Factor
Greater than or equal to 10%	5
Greater than or equal to 5% and less than 10%	3
Less than 5% and greater than or equal to 1%	2
Less than 1%	None

5. Determination Of Flat Vegetative Cover.

Flat vegetation includes attached (rooted) vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind. Flat vegetation, which is dead but firmly attached, shall be considered equally protective as live vegetation. Stones or other aggregate larger than 1 centimeter in diameter shall be considered protective cover in the course of conducting the line transect test method. Where flat vegetation exists, conduct the following line transect test method.

5.1 Line Transect Test Method. Stretch a 100 foot measuring tape across a survey area that represents a random portion of the overall conditions of the site. Firmly anchor both ends of the measuring tape into the surface using a tool such as a screwdriver, with the tape stretched taut and close to the soil surface. If vegetation exists in regular rows, place the tape diagonally (at approximately a 45° angle) away from a parallel or perpendicular position to the vegetated rows. Pinpoint an area the size of a 3/32 inch diameter brazing rod or wooden dowel centered above each 1 foot interval mark along one edge of the tape. Count the number of times that flat vegetation lies directly underneath the pinpointed area at 1 foot intervals. Consistently observe the underlying surface from a 90° angle directly above each pinpoint on one side of the tape. Do not count the underlying surface as vegetated if any portion of the pinpoint extends beyond the edge of the vegetation underneath in any direction. If clumps of vegetation or vegetative debris lie underneath the pinpointed area, count the surface as vegetated, unless bare soil is visible directly below the pinpointed area. When 100 observations have been made, add together the number of times a surface was counted as vegetated. This total represents the percent of flat vegetation cover (e.g., if 35 positive counts were made, then vegetation cover is 35%). If the survey area that represents a random portion of the overall conditions of the site is too small for 100 observations, make as many observations as possible. Then multiply the count of vegetated surface areas by the appropriate conversion factor to obtain percent cover. For example, if vegetation was counted 20 times within a total of 50 observations, divide 20 by 50 and multiply by 100 to obtain a flat vegetation cover of 40%.

5.2 Conduct the line transect test method, as described in section 5.1 of this appendix, an additional two times on areas that represent a random portion of the overall conditions of the site and average results.

6. Determination Of Standing Vegetative Cover.

Standing vegetation includes vegetation that is attached (rooted) with a predominant vertical orientation. Standing vegetation, which is dead but firmly rooted, shall be

considered equally protective as live vegetation. Conduct the following standing vegetation test method to determine if 30% cover or more exists. If the resulting percent cover is less than 30% but equal to or greater than 10%, then conduct the test in Section 4 (Determination Of Threshold Friction Velocity (TFV)) of this appendix in order to determine if the site is stabilized, such that the standing vegetation cover is equal to or greater than 10%, where threshold friction velocity, corrected for non-erodible elements, is equal to or greater than 43 cm/second.

6.1 For standing vegetation that consists of large, separate vegetative structures (e.g., shrubs and sagebrush), select a survey area that represents a random portion of the overall conditions of the site that is the shape of a square with sides equal to at least 10 times the average height of the vegetative structures. For smaller standing vegetation, select a survey area of three feet by three feet.

6.2 Count the number of standing vegetative structures within the survey area. Count vegetation, which grows in clumps as a single unit. Where different types of vegetation exist and/or vegetation of different height and width exists, separate the vegetative structures with similar dimensions into groups. Count the number of vegetative structures in each group within the survey area. Select an individual structure within each group that represents the average height and width of the vegetation in the group. If the structure is dense (e.g., when looking at it vertically from base to top there is little or zero open air space within its perimeter), calculate and record its frontal silhouette area, according to Equation 6 of this appendix. Also, use Equation 6 of this appendix to estimate the average height and width of the vegetation if the survey area is larger than nine square feet. Otherwise, use the procedure in section 6.3 of this appendix to calculate the frontal silhouette area. Then calculate the percent cover of standing vegetation according to Equations 7, 8, and 9 of this appendix.

$$\text{Frontal Silhouette Area} = (\text{Average Height}) \times (\text{Average Width}) \quad \text{Eq. 6}$$

$$\text{Frontal Silhouette Area Of Group} = (\text{Frontal Silhouette Area Of Individual Vegetative Structure}) \times (\text{Number Of Vegetation Structures Per Group}) \quad \text{Eq. 7}$$

$$\text{Total Frontal Silhouette Area} = \text{Frontal Silhouette Area Of Group 1} + \text{Frontal Silhouette Area Of Group 2 (etc.)} \quad \text{Eq. 8}$$

$$\text{Percent Cover Of Standing Vegetation} = (\text{Total Frontal Silhouette Area}/\text{Survey Area}) \times 100 \quad \text{Eq. 9}$$

Percent Open Space = [(Number Of Circled Gridlines Within The Outlined Area Counted That Are Not Covered By Vegetation/Total Number Of Gridline Intersections Within The Outlined Area) x 100] Eq. 10

Percent Vegetative Density = 100 - Percent Open Space Eq. 11

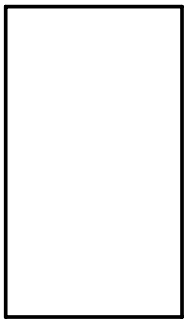
Vegetative Density = Percent Vegetative Density/100 Eq. 12

Frontal Silhouette Area = [Max. Height x Max. Width] x [Vegetative Density/0.4]0.5 Eq. 13

Note: Ensure consistent units of measurement (e.g., square meters or square inches when calculating percent cover).

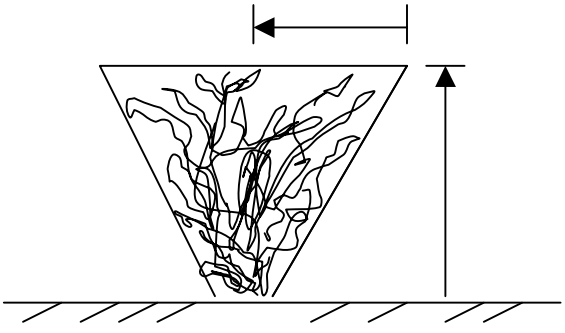
6.3 Vegetative Density Factor. Cut a single, representative piece of vegetation (or consolidated vegetative structure) to within 1 cm of surface soil. Using a white paper grid or transparent grid over white paper, lay the vegetation flat on top of the grid (but do not apply pressure to flatten the structure). Grid boxes of 1 inch or 1/2 inch squares are sufficient for most vegetation when conducting this procedure. Using a marker or pencil, outline the shape of the vegetation along its outer perimeter, according to Figure B, C, or D of this appendix, as appropriate. (Note: Figure C differs from Figure D primarily in that the width of vegetation in Figure C is narrow at its base and gradually broadens to its tallest height. In Figure D, the width of the vegetation generally becomes narrower from its midpoint to its tallest height.) Remove the vegetation, count and record the total number of gridline intersections within the outlined area, but do not count gridline intersections that connect with the outlined shape. There must be at least 10 gridline intersections within the outlined area and preferably more than 20, otherwise, use smaller grid boxes. Draw small circles (no greater than a 3/32 inch diameter) at each gridline intersection counted within the outlined area. Replace the vegetation on the grid within its outlined shape. From a distance of approximately 2 feet directly above the grid, observe each circled gridline intersection. Count and record the number of circled gridline intersections that are not covered by any piece of the vegetation. To calculate percent vegetative density, use Equations 10 and 11 of this appendix. If percent vegetative density is equal to or greater than 30, use an equation (one of the equations-Equations 16, 17, or 18 of this appendix) that matches the outline used to trace the vegetation (Figure B, C, or D) to calculate its frontal silhouette area. If percent vegetative density is less than 30, use Equations 12 and 13 of this appendix to calculate the frontal silhouette area.

Figure B. Cylinder



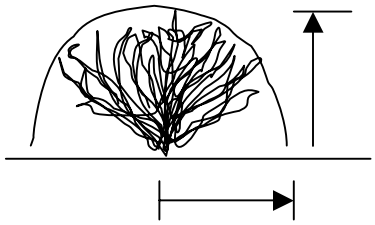
Frontal Silhouette Area = Maximum Height x Maximum Width Eq. 16

Figure C. Inverted Cone



Frontal Silhouette Area = Maximum Height x 1/2 Maximum Width Eq. 17

Figure D. Upper Sphere



Frontal Silhouette Area = (3.14 x Maximum Height x 1/2 Maximum Width)/2 Eq. 18

7. Rock Test Method.

The Rock Test Method, which is similar to Section 4 (Test Methods For Stabilization-Determination Of Threshold Friction Velocity (TFV)) of this appendix, examines the wind-resistance effects of rocks and other non-erodible elements on disturbed surfaces. Non-erodible elements are objects larger than 1 centimeter (cm) in diameter that remain firmly in place even on windy days. Typically, non-erodible elements include rocks, stones, glass fragments, and hardpacked clumps of soil lying on or embedded in the surface. Vegetation does not count as a non-erodible element in this method. The purpose of this test method is to estimate the percent cover of non-erodible elements on a given surface to see whether such elements take up enough space to offer protection against windblown dust. For simplification, the following test method refers to all non-erodible elements as "rocks".

7.1 Select a 1 meter by 1 meter survey area that represents the general rock distribution on the surface. (A 1 meter by 1 meter area is slightly greater than a 3 foot by 3 foot area.) Mark-off the survey area by tracing a straight, visible line in the dirt along the edge of a measuring tape or by placing short ropes, yard sticks, or other straight objects in a square around the survey area.

7.2 Without moving any of the rocks or other elements, examine the survey area. Since rocks $>3/8$ inch (1 cm) in diameter are of interest, measure the diameter of some of the smaller rocks to a get a sense for which rocks need to be considered.

7.3 Mentally group the rocks >3/8 inch (1 cm) diameter lying in the survey area into small, medium, and large size categories. Or, if the rocks are all approximately the same size, simply select a rock of average size and typical shape. Without removing any of the rocks from the ground, count the number of rocks in the survey area in each group and write down the resulting number.

7.4 Without removing rocks, select one or two average-size rocks in each group and measure the length and width. Use either metric units or standard units. Using a calculator, multiply the length times the width of the rocks to get the average dimensions of the rocks in each group. Write down the results for each rock group.

7.5 For each rock group, multiply the average dimensions (length times width) by the number of rocks counted in the group. Add the results from each rock group to get the total rock area within the survey area.

7.6 Divide the total rock area, calculated in section 7.5 of this appendix, by two (to get frontal area). Divide the resulting number by the size of the survey area (make sure the units of measurement match), and multiply by 100 for percent rock cover. For example, the total rock area is 1,400 square centimeters, divide 1,400 by 2 to get 700. Divide 700 by 10,000 (the survey area is 1 meter by 1 meter, which is 100 centimeters by 100 centimeters or 10,000 centimeters) and multiply by 100. The result is 7% rock cover. If rock measurements are made in inches, convert the survey area from meters to inches (1 inch = 2.54 centimeters).

7.7 Select and mark-off two additional survey areas and repeat the procedures described in section 7.1 through section 7.6 of this appendix. Make sure the additional survey areas also represent the general rock distribution on the site. Average the percent cover results from all three survey areas to estimate the average percent of rock cover.

7.8 If the average rock cover is greater than or equal to 10%, the surface is stable. If the average rock cover is less than 10%, follow the procedures in section 7.9 of this appendix.

7.9 If the average rock cover is less than 10%, the surface may or may not be stable. Follow the procedures in Section 1.3 (Determination Of Threshold Friction Velocity (TFV)) of this rule and use the results from the rock test method as a correction (i.e., multiplication) factor. If the rock cover is at least 1%, such rock cover helps to limit windblown dust. However, depending on the soil's ability to release fine dust particles into the air, the percent rock cover

may or may not be sufficient enough to stabilize the surface. It is also possible that the soil itself has a high enough TFV to be stable without even accounting for rock cover.

7.10 After completing the procedures described in section 7.9 of this appendix, use Table 2 of this appendix to identify the appropriate correction factor to the TFV, depending on the percent rock cover.

RULE 8021 CONSTRUCTION, DEMOLITION, EXCAVATION, EXTRACTION, AND OTHER EARTHMOVING ACTIVITIES (Adopted November 15, 2001; Amended August 19, 2004)

1.0 Purpose

The purpose of this rule is to limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities.

2.0 Applicability

This rule applies to any construction, demolition, excavation, extraction, and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on site, and travel on access roads to and from the site. This rule also applies to the construction of new landfill disposal sites or modification to existing landfill disposal sites prior to commencement of landfilling activities. The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on August 19, 2004 shall take effect.

3.0 Definitions

The definitions of terms in Rule 8011 (General Requirements) shall apply to this rule.

4.0 Exemptions

In addition to the exemptions established in Rule 8011, the activities listed in Sections 4.1 through 4.5 are exempt from this rule. However, carryout and trackout materials as a result of activities exempted in Sections 4.1 through 4.5 of this rule must be removed from any paved public roads pursuant to Rule 8041 (Carryout and Trackout):

4.1 Blasting activities that have been permitted by the California Division of Industrial Safety. Other activities performed in conjunction with blasting are not exempt from complying with the provisions of other applicable rules under Regulation VIII (Fugitive PM10 Prohibitions).

4.2 Maintenance or remodeling of existing buildings and additions to existing buildings where total building area is not increased by more than fifty percent, or 10,000 square feet, whichever is less; but not including ancillary construction such as expanding parking lots.

4.3 All additions to existing single family residential buildings.

4.4 Diskingof weeds and dried vegetation related to fire prevention required by a Federal, State or local agency on a site less than one-half (½) acre. Activities

performed in conjunction with disking are not exempt from complying with the provisions of other applicable rules under Regulation VIII.

4.5 The spreading of landfill daily cover necessary to cover garbage/rubbish in order to preserve public health and safety and to comply with the requirements of the California Integrated Waste Management Board during wind conditions which would generate fugitive dust.

5.0 Requirements

No person shall perform any construction, demolition, excavation, extraction, or other earthmoving activities unless the appropriate requirements in sections 5.1 through 5.5 are sufficiently implemented to limit VDE to 20% opacity and comply with the conditions for a stabilized surface area when applicable. In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII.

5.1 A person shall implement the requirements specified below when using wrecking balls or other wrecking equipment to raze or demolish buildings.

5.1.1 Apply sufficient water to building exterior surfaces, unpaved surface areas where equipment will operate, and razed building materials to limit VDE to 20% opacity throughout the duration of razing and demolition activities.

5.1.2 Apply sufficient dust suppressants to unpaved surface areas within 100 feet where materials from razing or demolition activities will fall in order to limit VDE to 20% opacity.

5.1.3 Apply sufficient dust suppressants to unpaved surface areas where wrecking or hauling equipment will be operated in order to limit VDE to 20% opacity

5.1.4 Handling, storage, and transport of bulk materials on-site or off-site resulting from the demolition or razing of buildings shall comply with the requirements specified in Rule 8031 (Bulk Materials)

5.1.5 Apply water within 1 hour of demolition to unpaved surfaces within 100 feet of the demolished structure.

5.1.6 Prevention and removal of carryout or trackout on paved public access roads from demolition operations shall be performed in accordance with Rule 8041 (Carryout and Trackout).

5.2 A person shall control the fugitive dust emissions to meet the requirements in Table 8021-1.

Table 8021-1 – CONTROL MEASURE OPTIONS FOR CONSTRUCTION, EXCAVATION, EXTRACTION, AND OTHER EARTHMOVING ACTIVITIES	
A.	PRE-ACTIVITY:
	A1 Pre-water site sufficient to limit VDE to 20% opacity, and
	A2 Phase work to reduce the amount of disturbed surface area at any one time.
B.	DURING ACTIVE OPERATIONS:
	B1 Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity; or
	B2 Construct and maintain wind barriers sufficient to limit VDE to 20% opacity. If utilizing wind barriers, control measure B1 above shall also be implemented.
	B3 Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20% opacity and meet the conditions of a stabilized unpaved road surface.
C.	TEMPORARY STABILIZATION DURING PERIODS OF INACTIVITY:
	C1 Restrict vehicular access to the area; and
	C2 Apply water or chemical/organic stabilizers/suppressants, sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acres or more of disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined in section 3.58 of Rule 8011.

5.3 Speed Limitations and Posting of Speed Limit Signs on Uncontrolled Unpaved Access/Haul Roads on Construction Sites

5.3.1. An owner/operator shall limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.

5.3.2. An owner/operator shall post speed limit signs that meet State and Federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.

5.4 Wind Generated Fugitive Dust Requirements

5.4.1 Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceeds 20% opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.

5.4.2 Continue operation of water trucks/devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping

An owner/operator shall comply with the recordkeeping requirements specified in Rule 8011.

6.3 Dust Control Plan

6.3.1 An owner/operator shall submit a Dust Control Plan to the APCO prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or 5 acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. Construction activities shall not commence until the APCO has approved or conditionally approved the Dust Control Plan. An owner/operator shall provide written notification to the APCO within 10 days prior to the commencement of earthmoving activities via fax or mail. The requirement to submit a dust control plan shall apply to all such activities conducted for residential and non-residential (e.g., commercial, industrial, or institutional) purposes or conducted by any governmental entity.

6.3.2 An owner/operator may submit one Dust Control Plan covering multiple projects at different sites where construction will commence within the next 12 months provided the plan includes each project size and location, types of activities to be performed. The Dust Control Plan shall specify the expected start and completion date of each project.

6.3.3 The Dust Control Plan shall describe all fugitive dust control measures to be implemented before, during, and after any dust generating activity.

6.3.4 A Dust Control Plan shall contain all the information described in Section 6.3.6 of this rule. The APCO shall approve, disapprove, or conditionally approve the Dust Control Plan within 30 days of plan submittal. A Dust Control Plan is deemed automatically approved if, after 30 days following receipt by the District, the District does not provide any comments to the owner/operator regarding the Dust Control Plan.

6.3.5 An owner/operator shall retain a copy of an approved Dust Control Plan at the project site. The approved Dust Control Plan shall remain valid until the termination of all dust generating activities. Failure to comply with the provisions of an approved Dust Control Plan is deemed to be a violation of this rule. Regardless of whether an approved Dust Control Plan is in place or not, or even when the owner/operator responsible for the plan is complying with an approved Dust Control Plan, the owner/operator is still subject to comply with all requirements of the applicable rules under Regulation VIII at all times.

6.3.6 A Dust Control Plan shall contain all of the following information:

6.3.6.1 Name(s), address(es), and phone number(s) of person(s) and owner(s)/operator(s) responsible for the preparation, submittal, and implementation of the Dust Control Plan and responsible for the dust generating operation and the application of dust control measures.

6.3.6.2 A plot plan which shows the type and location of each project.

6.3.6.3 The total area of land surface to be disturbed, daily throughput volume of earthmoving in cubic yards, and total area in acres of the entire project site.

6.3.6.4 The expected start and completion dates of dust generating and soil disturbance activities to be performed on the site.

6.3.6.5 The actual and potential sources of fugitive dust emissions on the site and the location of bulk material handling and storage areas, paved and unpaved roads; entrances and exits where carryout/trackout may occur; and traffic areas.

6.3.6.6 Dust suppressants to be applied, including: product specifications; manufacturer's usage instructions (method, frequency, and intensity of application); type, number, and

capacity of application equipment; and information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application.

6.3.6.7 Specific surface treatment(s) and/or control measures utilized to control material carryout, trackout, and sedimentation where unpaved and/or access points join paved public access roads.

6.3.6.8 At least one key individual representing the owner/operator or any person who prepares a Dust Control Plan must complete a Dust Control Training Class conducted by the District. The District will conduct Dust Control Training Classes on an as needed basis.

6.4 District Notification of Earthmoving Activities on Smaller Construction Sites

6.4.1 On residential development construction sites ranging from 1.0 to less than 10.0 acres in area, an owner/operator shall provide written notification to the District at least 48 hours prior to his/her intent to commence any earthmoving activities.

6.4.2 On non-residential development construction sites ranging from 1.0 to less than 5.0 acres in area, an owner/operator shall provide written notification to the District at least 48 hours prior to his/her intent to commence any earthmoving activities.

RULE 8031 BULK MATERIALS (Adopted November 15, 2001; Amended August 19, 2004)

1.0 Purpose

The purpose of this rule is to limit fugitive dust emissions from the outdoor handling, storage, and transport of bulk materials.

2.0 Applicability

This rule applies to the outdoor handling, storage, and transport of any bulk material. The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on August 19, 2004 shall take effect.

3.0 Definitions

The definitions of terms in Rule 8011 (General Requirements) shall apply to this rule.

4.0 Exemptions

In addition to the exemptions established in Rule 8011 the following exemptions are established for this Rule:

4.1 Any outdoor storage, handling, or transport of bulk materials which would be damaged by wetting with water or by the application of chemical/organic dust suppressants, provided owners/operators demonstrate to the satisfaction of the APCO and USEPA that none of the control measures specified in Table 8031-1 of this rule can be implemented to limit visible dust emissions (VDE) to 20% opacity or provide a stabilized surface as defined in Rule 8011.

4.2 The spreading of landfill daily cover.

4.3 Transport of a bulk material in an outdoor area for a distance of twelve feet or less with the use of a chute or conveyor device.

4.4 Outdoor storage of any bulk material at a single site where no material is actively being added or removed at the end of the workday or overnight and where the total material stored is less than 100 cubic yards.

4.5 Agricultural sources subject to, or specifically exempt from, the requirements of Rule 8081 (Agricultural Sources).

5.0 Requirements

No person shall perform any outdoor handling, storage, and transport of bulk materials unless the appropriate requirements in Table 8031-1 of this rule are sufficiently implemented to limit VDE to 20% opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011. In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII.

TABLE 8031-1 – CONTROL MEASURES FOR BULK MATERIALS
A. HANDLING OF BULK MATERIALS: A1 When handling bulk materials, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity or; A2 Construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, control measure A1 shall also be implemented
B. STORAGE OF BULK MATERIALS: B1 When storing bulk materials, comply with the conditions for a stabilized surface as defined in Rule 8011; or B2 Cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or B3 Construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, apply water or chemical/organic stabilizers/suppressants to limit VDE to 20% opacity or; B4 Utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.
C. ON-SITE TRANSPORTING OF BULK MATERIALS: C1 Limit vehicular speed while traveling on the work site sufficient to limit VDE to 20% opacity; or C2 Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported across any paved public access road sufficient to limit VDE to 20% opacity, or C3 Apply water to the top of the load sufficient to limit VDE to 20% opacity, or C4 Cover haul trucks with a tarp or other suitable cover.
D. OFF-SITE TRANSPORTING OF BULK MATERIALS: D1 Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and D2 Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and D3 Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported on any paved public access road, and apply water to the top of the load sufficient to limit VDE to 20% opacity; or cover haul trucks with a tarp or other suitable cover.

TABLE 8031-1 – CONTROL MEASURES FOR BULK MATERIALS
E. OUTDOOR TRANSPORT OF BULK MATERIALS WITH A CHUTE OR CONVEYOR: E1 Fully enclose the chute or conveyor; or E2 Operate water spray equipment that sufficiently wets materials to limit VDE to 20% opacity; or E3 Wash separated or screened materials to remove conveyed materials having an aerodynamic diameter of 10 microns or less sufficient to limit VDE to 20% opacity.

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping

An owner/operator shall comply with the recordkeeping requirements specified in Rule 8011.

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RULE 8041 CARRYOUT AND TRACKOUT (Adopted November 15, 2001; Amended August 19, 2004)

1.0 Purpose

The purpose of this rule is to prevent or limit fugitive dust emissions from carryout and trackout.

2.0 Applicability

This rule applies to all sites that are subject to any of the following rules where carryout or trackout has occurred or may occur on paved public roads or the paved shoulders of a paved public road: Rules 8021 (Construction, Demolition, Excavation, Extraction, and other Earthmoving Activities), 8031 (Bulk Materials), 8061 (Paved and Unpaved Roads), and 8071 (Unpaved Vehicle and Equipment Traffic Areas) The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on August 19, 2004 shall take effect.

3.0 Definitions

The definitions of terms in Rule 8011 (General Requirements) shall apply to this rule.

4.0 Exemptions

In addition to the exemptions established in Rule 8011, the following exemption is also established for this rule.

4.1 Carryout and trackout caused by an Agricultural Source.

5.0 Requirements

An owner/operator shall sufficiently prevent or cleanup carryout and trackout as specified in sections 5.1 through 5.9. In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII. The use of blower devices, or dry rotary brushes or brooms, for removal of carryout and trackout on public roads is expressly prohibited. The removal of carryout and trackout from paved public roads does not exempt an owner/operator from obtaining state or local agency permits which may be required for the cleanup of mud and dirt on paved public roads.

5.1 Owners/operators shall remove all visible carryout and trackout at the end of each workday.

5.2 An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall take the actions for carryout and trackout as specified in Section 5.8.

5.3 An owner/operator subject to the requirements of a Dust Control Plan as specified in Rule 8021 (Construction, Demolition, Excavation, Extraction, and other Earthmoving Activities) shall take the actions for carryout and trackout as specified in Section 5.8.

5.4 Within urban areas or, an owner/operator shall prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site.

5.5 Within rural areas, construction projects 10 acres or more in size, an owner/operator shall prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site.

5.6 For sites with paved interior roads, an owner/operator shall prevent and mitigate carryout and trackout as specified in Section 5.8.

5.7 Cleanup of carryout and trackout shall be accomplished by:

5.7.1 Manually sweeping and picking-up; or

5.7.2 Operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to 20% opacity; or

5.7.3 Operating a PM10-efficient street sweeper that has a pick-up efficiency of at least 80 percent as defined in Rule 8011 (General Requirements).

5.7.4 Flushing with water, if curbs or gutters are not present and where the use of water will not result as a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program.

5.8 Carryout and trackout shall be prevented and mitigated as specified in sections 5.8.1 and 5.8.2:

5.8.1 Prevented by:

5.8.1.1 Installing and maintaining a trackout control device meeting the specifications contained in Section 5.9 at all access points to paved public roads; or

5.8.1.2 Utilizing a carryout and trackout prevention procedure which has been demonstrated to the satisfaction of the APCO and US EPA as achieving an equivalent or greater level of control than specified in Section 5.8.1.1.

5.8.2 Mitigated by:

In the event that measures specified in Section 5.8.1 are insufficient to prevent carryout and trackout, removal of any carryout and trackout must be accomplished within one-half hour of the generation of such carryout and trackout.

5.9 Specifications for Section 5.8.1 shall meet the following conditions or combination of conditions:

5.9.1 For use of grizzlies or other similar devices designed to removed dirt/mud from tires, the devices shall extend from the intersection with the public paved road surface for a distance of at least 25 feet, and cover the full width of the unpaved exit surface for at least 25 feet.

5.9.2 For use of gravel pads, coverage with gravel shall be at least one inch or larger in diameter and at least 3 inches deep, shall extend from the intersection with the public paved road surface for a distance of at least 50 feet, and cover the full width of the unpaved exit surface for at least 50 feet. Any gravel deposited onto a public paved road travel lane or shoulder must be removed at the end of the workday or immediately following the last vehicle using the gravel pad, or at least once every 24 hours, whichever occurs first.

5.9.3 For use of paving, paved surfaces shall extend from the intersection with the public paved road surface for a distance of at least 100 feet, and cover the full width of the unpaved access road for that distance to allow mud and dirt to drop off of vehicles before exiting the site. Mud and dirt deposits accumulating on paved interior roads shall be removed with sufficient frequency, but not less frequently than once per workday, to prevent carryout and trackout onto paved public roads

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping

An owner/operator shall comply with the recordkeeping requirements specified in Rule 8011.

RULE 8051 OPEN AREAS (Adopted November 15, 2001; Amended August 19, 2004; Amended September 21, 2023)

1.0 Purpose

The purpose of this rule is to limit fugitive dust emissions from open areas.

2.0 Applicability

2.1 Except as provided under Section 7.0, this rule applies to any open area having 0.5 acres or more within urban areas, or 3.0 acres or more within rural areas; and contains at least 1000 square feet of disturbed surface area.

2.2 Sections 4.2 and 7.0 shall not become applicable until the effective date of the federal Environmental Protection Agency's (EPA) final and full approval of the California State Implementation Plan (SIP) as meeting the contingency measure requirements of the Clean Air Act section 172(c)(9) for San Joaquin Valley for the applicable PM2.5 National Ambient Air Quality Standards (NAAQS).

3.0 Definitions

The definitions of terms in Section 3.0 of Rule 8011 (General Requirements) shall apply to Rule 8051 and are incorporated herein by reference.

4.0 Exemptions

In addition to the Exemptions identified below, the Exemptions established in Section 4.0 of Rule 8011 shall apply to Rule 8051 and are incorporated herein by reference.

4.1 Any weed abatement activity utilizing mowing and/or cutting, and which leaves at least three inches of stubble immediately after such mowing/cutting has occurred.

4.2 Upon triggering Section 7.0, rural parcels between one (1) to three (3) acres implementing fire prevention activities required by a Federal, State, or local agency using the following methods:

4.2.1 Mowing and/or cutting, which leaves at least three inches of stubble immediately after such mowing and/or cutting has occurred;

4.2.2 Discing using no more than two passes. Operator shall minimize speed of equipment to limit dust emissions.

5.0 Requirements

Whenever an open area~~s~~ is a disturbed surface area or vehicles are used in an open area, an owner/operator shall implement one or a combination of control measures indicated in Table 8051-1 to comply with the conditions of a stabilized surface at all times and to limit VDE to no more than 20% opacity. In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII.

TABLE 8051-1 SOURCE TYPE AND CONTROL MEASURES FOR OPEN AREAS	
A.	OPEN AREAS: Implement, apply, maintain, and reapply if necessary, at least one or a combination of the following control measures to comply at all times with the conditions for a stabilized surface and limit VDE to 20% opacity as defined in Rule 8011: A1 Apply and maintain water or dust suppressant(s) to all unvegetated areas; or A2 Establish vegetation on all previously disturbed surface areas; or A3 Pave, apply and maintain gravel, or apply and maintain chemical/organic stabilizers/suppressants.
B.	VEHICLE USE IN OPEN AREAS: Upon evidence of trespass, prevent unauthorized vehicle access by: Posting “No Trespassing” signs or installing physical barriers such as fences, gates, posts, and/or other appropriate barriers to effectively prevent access to the area.

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping

An owner/operator shall comply with the recordkeeping requirements specified in Rule 8011.

7.0 Contingency Provision

Upon 60 days after the issuance of a final determination by EPA that the District has failed to meet any of the following elements for any of the PM2.5 NAAQS: (1) meet any Reasonable Further Progress requirement, (2) meet any quantitative milestone in an approved attainment plan, (3) submit any quantitative milestone report, or (4) attain the applicable PM2.5 National Ambient Air Quality Standard by the applicable attainment date, Section 2.0 of this rule shall apply to any urban open area having 0.5 acres or more, or any rural open area having 1.0 acre or more; and contains at least 1,000 square feet of disturbed surface area.

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RULE 8061 PAVED AND UNPAVED ROADS (Adopted November 15, 2001; Amended August 19, 2004)

1.0 Purpose

The purpose of this rule is to limit fugitive dust emissions from paved and unpaved roads by implementing control measures and design criteria.

2.0 Applicability

This rule applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project. The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on August 19, 2004 shall take effect.

3.0 Definitions

The definitions of terms in Rule 8011 (General Requirements) shall apply to this rule.

4.0 Exemptions

In addition to the exemptions established in Rule 8011, the following exemptions are established for this Rule:

4.1 Any unpaved road segment with less than 26 annual average daily vehicle trips (AADT).

4.1.1 This exemption shall not apply to Section 5.2.3 of this rule.

4.1.2 An owner/operator of any unpaved road segment with 26 or more AADT must provide estimated or actual vehicle trip data to the APCO by July 1, 2005.

4.2 Maintenance and resurfacing of existing paved roads does not apply to section 5.2 of this rule.

4.3 Agricultural sources subject to, or specifically exempt from, Rule 8081 (Agricultural Sources)

4.4 Emergency activities performed to ensure public health and safety as specified in Rule 8011, section 4.1.

4.5 Equipment used to remove debris beyond the capabilities of PM10-efficient street sweepers.

5.0 Requirements

In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII.

5.1 Paved Roads

5.1.1 New or Modified Paved Roads:

5.1.1.1 An owner/operator having jurisdiction over, or ownership of, public or private paved roads shall construct, or require to be constructed, all new or modified paved roads in conformance with the American Association of State Highway and Transportation Officials (AASHTO) guidelines for width of shoulders and for median shoulders as specified in section 5.1.1.2 of this rule as specified below:

5.1.1.1.1 New paved roads or modifications to existing paved roads with projected annual average daily vehicle trips of 500 vehicles or more shall be constructed with paved shoulders that meet following widths:

Annual Average Daily Vehicle Trips (AADT)	Minimum Paved or Stabilized Shoulder Width
500-3000	4 feet or limit of right-of-way, whichever is the lesser
Greater than 3000	8 feet or limit of right-of-way, whichever is the lesser

5.1.1.1.2 A curbing adjacent to and contiguous with the travel lane or paved shoulder of a road may be constructed, in lieu of meeting the paved shoulder width standard in Section 5.1.1.1.1

5.1.1.1.3 Intersections, auxiliary entry lanes, and auxiliary exit lanes may be constructed adjacent to and contiguous with the roadway, in lieu of meeting the paved shoulder width standard in Section 5.1.1.1.1

5.1.1.1.4 Where the requirements specified in Section 5.1.1.1.1 are shown to conflict with the requirements of the California Environmental

Quality Act (CEQA) and National Environmental Policy Act (NEPA) with respect to determinations regarding environmental, cultural, archaeological, historical, or other considerations addressed in such documents, an owner/operator is exempt from the paved shoulder width requirements specified in Section 5.1.1.1.1 of this rule.

5.1.1.2 Whenever any paved road which has projected annual average daily vehicle trips of 500 or more is constructed, or modified with medians, the medians shall be constructed in conformance with the AASHTO guidelines for width of median shoulders, with paved shoulders having a minimum width of four feet adjacent to the traffic lanes unless:

5.1.1.2.1 The medians of roads having speed limits set at or below 45 miles per hour are constructed with curbing; or

5.1.1.2.2 The medians are landscaped and maintained with grass or other vegetative ground cover or chemical/organic dust suppressants/stabilizers to comply with the definition of stabilized surface in Rule 8011.

5.1.2 PM10-Efficient Street Sweepers:

Each city, county, or state agency with primary responsibility for any existing paved road within an urban area shall take the following actions:

5.1.2.1 Effective July 1, 2005, all purchases of street sweeper equipment by such agency or their contractor(s) shall be only PM10-efficient street sweepers.

5.1.2.2 The utilization of PM10-efficient street sweepers by an agency or its contractor(s) shall be prioritized for use on routine street sweeper route(s) with paved curbs which have been determined by an agency to have the greatest actual or potential for dirt and silt loadings.

5.1.2.3 Any agency which conducts or contracts for routine street sweeping activities or services shall purchase, or require their contractor(s) to purchase and place into service, at least one PM10-efficient street sweeper not later than July 1, 2008.

5.1.2.4 Any street sweeping routes with paved curbs covered by PM10-efficient street sweepers pursuant to Section 5.1.2.2 shall conduct routine street sweeping operations over such routes at a frequency of not less than once per month.

5.1.2.5 All PM10-efficient street sweepers shall be operated and maintained according to manufacturer specifications.

5.1.2.6 If the provisions of Sections 5.1.2.1 or 5.1.2.3 cannot be met due to budgetary constraints, the agency may submit a statement of financial hardship to, and approved by, the APCO and US EPA.

5.1.3 Post-Event Clean-Up

Each city, county, or state agency with primary responsibility for any existing paved road shall take the following actions upon discovery by the city, county or state agency of accumulations of mud/dirt [event material] of at least 1 inch thickness over an area of at least 50 square feet on road surface travel lanes as a result of wind/storm/water erosion and runoff:

5.1.3.1 Within 24 hours of discovery by the city, county or state agency of such condition, remove the mud/dirt from the travel lanes or restrict vehicles from traveling over said mud/dirt until such time as the material can be removed from the travel lanes.

5.1.3.2 Follow dust minimizing practices during the removal of such mud/dirt from the travel lanes.

5.1.3.3 In the event unsafe travel conditions would result from restricting vehicle traffic pursuant to Section 5.1.3.1, and removal of such material is not possible within 72 hours due to weekend or holiday conditions, the provisions of Section 5.1.3.1 can be extended upon notification to and approval by the APCO.

5.1.3.4 As soon a practicable, removal of mud/dirt from paved shoulders should also occur through the use of dust minimizing practices.

5.2 Unpaved Road Segment

5.2.1. On any unpaved road segment with 26 or more AADT, the owner/operator shall limit VDE to 20% opacity and comply with the

requirements of a stabilized unpaved road by application and/or re-application/maintenance of at least one of the following control measures, or shall implement an APCO-approved Fugitive PM10 Management Plan as specified in Rule 8011 (General Requirements):

5.2.1.1 Watering;

5.2.1.2 Uniform layer of washed gravel;

5.2.1.3 Chemical/organic dust stabilizers/suppressants in accordance with the manufacturer's specifications;

5.2.1.4 Roadmix;

5.2.1.5 Paving;

5.2.1.6 Any other method that can be demonstrated to the satisfaction of the APCO that effectively limits VDE to 20% opacity and meets the conditions of a stabilized unpaved road.

5.2.2 Within an urban area, the construction of any new unpaved road is prohibited unless the road meets the definition of a temporary unpaved road as specified in section 3.60 of Rule 8011.

5.2.3 Requirements for Existing Unpaved Public Roads in Urban and Rural Areas:

5.2.3.1 Each city, county, or state agency with primary responsibility for any existing unpaved road within urban and rural areas shall take the following actions:

5.2.3.1.1 By January 1, 2005 provide the District with a list of all unpaved roads under its jurisdiction in any urban area(s), including data on length of, and AADT on, each unpaved road segment.

5.2.3.1.2 By July 1, 2005 provide the District with a list of all unpaved roads under its jurisdiction in any rural area, including data on length of, and AADT on, each unpaved road segment.

5.2.3.1.3 By January 1, 2010, pave an average of 20% annually of all unpaved roads identified in Section 5.2.3.1.1 up to a maximum of 5 cumulative miles within any one

urban area, with priority given to roads with the highest AADT levels. In meeting this requirement, each jurisdiction must show incremental progress.

5.2.3.1.4 By April 1 of each year, 2006 through 2010, submit to the District the total number of unpaved road miles which were paved during the previous calendar year, and the percentage of cumulative miles paved relative to the list provided pursuant to Section 5.2.3.1.1.

5.2.3.1.5 If the provisions of Section 5.2.3.1.3 cannot be met due to budgetary constraints, the agency may submit a statement of financial hardship to, and approved by, the APCO and US EPA.

5.2.4 Requirements for Existing Paved Public Roads with Unpaved Shoulders in Urban and Rural Areas:

5.2.4.1 Each city, county, or state agency with primary responsibility for any existing paved public road with unpaved shoulders in urban and rural areas shall take the following actions:

5.2.4.1.1 By January 1, 2005 provide the District with a list of all paved public roads with unpaved shoulders in any urban and rural area, including data on length of, and AADT on, each segment of paved public road with unpaved shoulders.

5.2.4.1.2 In Urban areas, by January 1, 2010, pave or stabilize 4-foot shoulders on 50% of existing paved public roads with the highest AADT in urban areas identified in Section 5.2.4.1.1. In meeting this requirement, each jurisdiction must show incremental progress.

5.2.4.1.3 In Rural areas, by January 1, 2010, pave or stabilize 4-foot shoulders on 25% of existing paved public roads with the highest AADT in rural areas identified in Section 5.2.4.1.1. In meeting this requirement, each jurisdiction must show incremental progress.

5.2.4.1.4 If the provisions of Sections 5.2.4.1.2 or 5.2.4.1.3 cannot be met due to budgetary constraints, the agency may submit a statement of financial hardship to, and approved by, the APCO and US EPA.

5.2.5 Requirements for Establishing and Posting Maximum Speed Limits on Unpaved Roads

Each owner/operator shall establish a maximum speed limit of 25 mph on each unpaved road with 26 AADT or more and shall post speed limit signs, one in each direction, per mile of road segment in urban areas, and per two miles of road segment in rural areas. This provision shall become effective one year from the date of adoption of this rule amendment.

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping and Reporting

In addition to complying with the recordkeeping requirements specified in Rule 8011 and Sections 5.2.3 and 5.2.4 of this rule, city, county and state agencies responsible for the maintenance and operation of public paved and unpaved roads, shall prepare and submit a written report to the District documenting compliance with the provisions of this rule. This report shall be prepared for the years 2003 and 2004, and no less frequently than each two (2) year period thereafter. The reports shall be transmitted to the District no later than 90 days after the end of the calendar year and shall include:

6.2.1 The total miles of paved and unpaved roads under the jurisdiction of the owner or agency and the miles of roads constructed or modified during the reporting period subject to the requirements of this regulation.

6.2.2 For newly constructed or modified roads, a summary of actions taken during the reporting period to prevent or mitigate PM10 emissions, with miles specified for each type of control measure used to reduce PM10 emissions.

6.2.3 For all roads under the agency's jurisdiction, a summary of actions taken to reduce PM10 emissions from roads during the reporting period. The total miles of roads for which these procedures were enforced and the estimated traffic volume on the affected roads shall be provided.

6.2.4 Other information that may be needed by the APCO for compliance with the United States Environmental Protection Agency's requirements.

RULE 8071 UNPAVED VEHICLE/EQUIPMENT TRAFFIC AREAS (Adopted November 15, 2001; Amended September 16, 2004)

1.0 Purpose

The purpose of this rule is to limit fugitive dust emissions from unpaved vehicle and equipment traffic areas.

2.0 Applicability

This rule applies to any unpaved vehicle/equipment traffic area. The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on September 16, 2004 shall take effect.

3.0 Definitions

The definitions of terms in Rule 8011 (General Requirements) shall apply to this rule.

4.0 Exemptions

In addition to the exemptions established in Rule 8011, the following exemptions are also established for this rule:

4.1 Unpaved vehicle and equipment traffic areas with less than 50 Average Annual Daily Trips (AADT).

4.2 Agricultural sources subject to, or specifically exempt from, the requirements of Rule 8081 (Agricultural Sources).

5.0 Requirements

5.1 In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII to limit Visible Dust Emissions (VDE) to 20% opacity and comply with the requirements of a stabilized unpaved road. If vehicle activity originates from and remains exclusively within an unpaved vehicle/equipment traffic area, section 5.2 may be implemented to limit VDE to 20% opacity.

5.1.1 Where 50 or more Average Annual Daily Trips (AADT) will occur on an unpaved vehicle/equipment traffic area, the owner/operator shall limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road by application and/or re-application/maintenance of at least one of the following control measures, or shall implement an APCO-approved Fugitive PM10 Management Plan as specified in Rule 8011 (General Requirements):

5.1.1.1 Watering;
5.1.1.2 Uniform layer of washed gravel;
5.1.1.3 Chemical/organic dust stabilizers/suppressants in accordance with the manufacturer's specifications;
5.1.1.4 Vegetative materials;
5.1.1.5 Paving;
5.1.1.6 Roadmix;
5.1.1.-7 Any other method(s) that can be demonstrated to the satisfaction of the APCO that effectively limits VDE to 20% opacity and meets the conditions of a stabilized unpaved road.

5.1.2 For unpaved vehicle/equipment traffic areas with 150 VDT, or 150 VDT that are utilized intermittently for a period of 30 days or less during the calendar year, the owner/operator shall implement the control options specified in 5.1.1.1 through 5.1.1.7, or shall implement an APCO-approved Fugitive PM10 Management Plan as specified in Rule 8011 (General Requirements) during the period that the unpaved vehicle/equipment traffic area is utilized.

5.1.3 On each day that 25 or more VDT with 3 or more axles will occur on an unpaved vehicle/equipment traffic area, the owner/operator shall limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road by the application and/or re-application/maintenance of at least one of the control measures specified sections 5.1.1.1 through 5.1.1.6, or shall implement an APCO-approved Fugitive PM10 Management Plan as specified in Rule 8011 (General Requirements).

5.1.4 On each day when a special event will result in 1,000 or more vehicles that will travel/park on an unpaved area, the owner/operator of the unpaved area to be traveled/parked upon must notify the District at least 48 hours in advance when such a special event will occur. During the duration of the special event vehicle travel/parking, the owner/operator shall limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road by the application and/or re-application/maintenance of water or chemical/organic dust stabilizers/suppressants in accordance with the manufacturer's specifications.

5.2 In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII to limit Visible Dust Emissions (VDE) to 20% opacity.

5.2.1 On each day that 50 or more VDT, or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved

vehicle/equipment traffic area, the owner/operator may apply/reapply water to limit VDE to 20% opacity.

5.3 An owner/operator shall restrict access and periodically stabilize a disturbed surface area whenever a site becomes inactive to comply with the conditions for a stabilized surface as defined in Rule 8011.

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping

An owner/operator shall comply with the recordkeeping requirements specified in Rule 8011.

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RULE 8081 AGRICULTURAL SOURCES (Adopted November 15, 2001; Amended September 16, 2004)

1.0 Purpose

The purpose of this rule is to limit fugitive dust emissions from agricultural sources.

2.0 Applicability

This rule applies to off-field agricultural sources. The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on August 19, 2004 shall take effect.

3.0 Definitions

The definitions of terms established in Rule 8011 (General Requirements) shall apply to this rule.

4.0 Exemptions

In addition to the exemptions established in Rule 8011, the following exemptions are established for this rule:

4.1 On-field agricultural sources.

4.2 Off-field agricultural sources necessary to minimize or respond to adverse effects on agricultural crops caused during freezing temperatures as declared by the National Weather Service.

4.3 Any outdoor storage, handling, or transport of bulk materials which would be damaged by wetting with water or by the application of chemical/organic dust suppressants, provided owners/operators demonstrates to the satisfaction of the APCO and USEPA, that none of the control measures specified in Table 8081-1 of this rule can be implemented to limit visible dust emissions (VDE) to 20% opacity or provide a stabilized surface as defined in Rule 8011.

4.4 Any unpaved road segment with less than 75 vehicle trips for that day. If 75 vehicle trips for that day will be exceeded, an owner/operator shall comply with the requirements of this Rule. This threshold does not apply to unpaved road segments subject to the requirements of Rule 4550 (Conservation Management Practices). Equipment with loading forks employed in the act of loading or unloading harvested commodities in the harvest location and traveling at 3 miles per hour or less are not included in the trip counts.

4.5 The felling and removal of trees from forest stands. However, the rules of Regulation VIII will apply to other timber harvest activities such as site preparation of log storage and staging areas.

4.6 Outdoor storage of any bulk material at a single site where no material is actively being added or removed and where the total material stored is less than 100 cubic yards.

4.7 Any unpaved vehicle and equipment parking and traffic area less than 1.0 acre and more than one mile from an urban area, or with less than 50 Average Annual Daily Trips (AADT) or less than 150 VDT that are utilized intermittently for a period of 30 days or less during the calendar year.

4.8 Transport of a bulk material in an outdoor area for a distance of twelve feet or less with the use of a chute or conveyor device.

5.0 Requirements

An owner/operator shall comply with Sections 5.1 through 5.3 and sufficiently implement at least one of the control measures indicated in each section of Table 8081-1 to limit VDE to 20% opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011. In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII.

5.1 Requirements for Bulk Materials

No person shall undertake any outdoor handling, storage, and transport of bulk materials unless the appropriate requirements in Table 8081-1 of this rule are sufficiently implemented to limit VDE to 20% opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011.

5.2 Requirements for Paved Roads and Unpaved Road Segments

5.2.1 Paved Road Segment

An owner/operator shall comply with the requirements of Rule 8061 (Paved and Unpaved Roads) regarding the construction standards for shoulder width and medians when constructing new paved roads or modifying existing paved roads.

TABLE 8081-1 CONTROL MEASURES FOR BULK MATERIALS	
A.	HANDLING OF BULK MATERIALS:
	A1 When handling bulk materials, apply water or suitable chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity or;
	A2 Construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, control measure A1 shall also be implemented.
B.	STORAGE OF BULK MATERIALS:
	B1 When storing bulk materials, comply with the conditions for a stabilized surface as defined in Rule 8011; or
	B2 Cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or
	B3 Construct and maintain fences or wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, apply water or suitable chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity or;
	B4 Utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.
C.	ON-SITE TRANSPORTING OF BULK MATERIALS:
	C1 Limit vehicular speed while traveling on the work site sufficient to limit VDE to 20% opacity; or
	C2 Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported across any paved public access road; or
	C3 Apply water to the top of the load sufficient to limit VDE to 20% opacity; or
	C4 Cover haul trucks with a tarp or other suitable cover.
D.	OFF-SITE TRANSPORTING OF BULK MATERIALS:
	D1 Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and
	D2 Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and
	D3 Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported on any paved public access road and apply water to the top of the load sufficient to limit VDE to 20% opacity; or cover haul trucks with a tarp or other suitable closure.
E.	OUTDOOR TRANSPORT OF BULK MATERIALS WITH A CHUTE OR CONVEYOR:
	E1 Fully enclose the chute or conveyor; or
	E2 Operate water spray equipment that sufficiently wets materials to limit VDE to 20% opacity; or
	E3 Wash separated or screened materials to remove conveyed materials having an aerodynamic diameter of 10 microns or less sufficient to limit VDE to 20% opacity.

5.2.2 Unpaved Road Segments

5.2.2.1 On each day that 75 or more vehicle daily trips (VDT), or 25 or more VDT with 3 or more axles, will occur on an unpaved road segment, the owner/operator shall limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road by application and/or re-application/maintenance of at least one of the following control measures, or shall implement an approved Fugitive PM10 Management Plan as specified in section 7.0.

5.2.2.1.1 Watering;
5.2.2.1.2 Uniform layer of washed gravel;
5.2.2.1.3 Chemical/organic dust suppressants;
5.2.2.1.4 Vegetative materials;
5.2.2.1.5 Paving;
5.2.2.1.6 Roadmix;
5.2.2.1.7 Any other method(s) that can be demonstrated to the satisfaction of the APCO that effectively limits VDE to 20% opacity and meets the conditions of a stabilized unpaved road.

5.3 Requirements for Unpaved Vehicle/Equipment Parking and Traffic Areas

The control measures specified in Sections 5.3.1 through 5.3.5 shall be implemented on unpaved surface areas dedicated to any vehicle and equipment parking and traffic activity in order to limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road as specified in Rule 8011. If vehicle activity remains exclusively within an unpaved vehicle/equipment traffic area, section 5.3 may be implemented to limit VDE to 20% opacity.

5.3.1 Where 50 or more AADT will occur on an unpaved vehicle/equipment traffic area, the owner/operator shall limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road by the application and/or reapplication/maintenance of at least one of the following control measures, or shall implement an approved Fugitive PM10 Management Plan as specified in section 7.0:

5.3.1.1 Watering
5.3.1.2 Uniform layer of washed gravel;
5.3.1.3 Chemical/organic dust stabilizers/suppressants in accordance with the manufacturer's specifications;
5.3.1.4 Roadmix;

5.3.1.5 Paving;

5.3.1.6 Any other method(s) that can be demonstrated to the satisfaction of the APCO that effectively limits VDE to 20% opacity and meets the conditions of a stabilized unpaved road.

5.3.2 For unpaved vehicle/equipment traffic areas with 150 or more VDT, or 150 or more VDT that are utilized intermittently for a period of 30 days or less during the calendar year, the owner/operator shall implement the control options specified in 5.3.1.1 through 5.3.1.6.

5.3.3 On each day that 25 or more VDT with 3 or more axles will occur on an unpaved vehicle/equipment traffic area, the owner/operator shall limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road by the application and/or re-application/maintenance of at least one of the control measures specified section 5.3.1.1 through 5.3.1.6.

5.3.4 On each day that 75 or more VDT, or 26 or more VDT with 3 or more axles originates from within and remains exclusively within an unpaved vehicle/equipment traffic area, the owner/operator may apply/re-apply water to limit VDE to 20% opacity.

5.3.5 An owner/operator shall restrict access and periodically stabilize a disturbed surface area whenever a site becomes inactive at the end of the workday to comply with the conditions for a stabilized unpaved road as defined in Rule 8011.

5.4 Requirements for Carryout/Trackout

The District hereby incorporates by reference California Vehicle Code section 23112-23113. This section requires material, including dirt deposited on any public highway or street to be cleaned up as specified in California Vehicle Code 23112-23113.

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping

An owner/operator shall comply with the recordkeeping requirements specified in Rule 8011.

7.0 Fugitive PM10 Management Plan for Unpaved Roads and Unpaved Vehicle/Equipment Traffic Areas

As a compliance alternative for sections 5.2.2, 5.3.1, and 5.3.2 of this rule, an operator may implement a Fugitive PM10 Management Plan (FPMP) that is designed to achieve 50% control efficiency and has been approved by the Fresno Regional office of the United States Department of Agriculture Natural Resource Conservation Service based on guidance and criteria established by the APCO. The FPMP shall be implemented on all days that traffic exceeds, or is expected to exceed, the number of annual average daily vehicle trips or vehicle trips per day as specified in sections 5.2.2, 5.3.1, and 5.3.2 of this rule. The owner/operator remains subject to all requirements of the applicable rules of Regulation VIII that are not addressed by the FPMP. It should be noted that the FPMP is not a compliance option for any requirement for a stabilized surface as defined in Rule 8011.

7.1 An owner/operator shall provide the proposed FPMP to the local office of the USDA Resource Conservation District (RCD) via fax, mail, or in person. The RCD shall submit the proposed FPMP to the Fresno Regional Office of the NRCS, who in turn shall evaluate and approve, disapprove, or conditionally approve each proposed FPMP based on guidance and criteria established by the APCO. An FPMP shall not be considered approved until the operator has received written approval from the NRCS. The NRCS and local RCDs shall make all approved FPMPs available to the APCO and the public.

7.2 An owner/operator may submit one FPMP covering multiple unpaved roads and unpaved vehicle/equipment traffic areas.

7.3 An owner/operator shall retain a copy of an approved FPMP at the operators place of business and make it available for inspection by the APCO or his designee during normal business hours. The approved FPMP shall remain valid until the APCO notifies the owner/operator or the NRCS that it needs to be revised, or until the owner/operator notifies the NRCS that the owner/operator has permanently discontinued implementing the FPMP. The NRCS shall notify the APCO as soon as possible in the event an operator notifies the NRCS the owner/operator has permanently discontinued implementing the FPMP.

7.4 Failure to comply with the provisions of an approved FPMP is deemed to be a violation of this rule.

7.5 A FPMP shall contain all of the following information:

7.5.1 Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submittal, and implementation of the FPMP, and of person(s) responsible for the unpaved road or traffic area.

7.5.2 A plot plan or map which shows the location of each unpaved road or traffic area to be covered by the FPMP, and the total length (miles) of unpaved roads, and the total area (acres) of the unpaved traffic areas.

7.5.3 The months (and weeks, if known) of the year that vehicle traffic is expected to exceed 75 vehicle trips per day, and the types of vehicles (e.g., passenger vehicles, trucks, mobile equipment) expected on each road or traffic area. As stated above, the FPMP shall be implemented on all days that traffic exceeds, or is expected to exceed, the number of annual average daily vehicle trips or vehicle trips per day as specified in sections 5.2.2, 5.3.1, and 5.3.2 of this rule.

7.5.4 Dust suppressants, gravel, and/or vegetative materials to be applied, including: product specifications; manufacturer's usage instructions (method, frequency, and intensity of application); type, number, and capacity of application equipment; and information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application.

7.5.5 A description of the condition of the treated surfaces to be achieved as a result of the use of the suppressant or other dust control material.

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SAN JOAQUIN VALLEY APCD
11/30/94

Rule 9110 GENERAL CONFORMITY (Adopted October 20, 1994)

1.0 Purpose

This Rule specifies the criteria and procedures for determining the conformity of federal actions with the San Joaquin Valley Unified Air Pollution Control District's air quality implementation plan.

2.0 Applicability

General Conformity applies to federal actions except:

2.1 activities covered by the transportation conformity rule;

2.2 actions with emissions less than the de minimis levels; and

2.3 actions exempt or presumed to conform.

3.0 Reference

The provisions of Code of Federal Regulations (CFR), title 40, chapter 1, subchapter C, parts 6 and 51 in effect October 20, 1994, are made part of the Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District.

SAN JOAQUIN VALLEY APCD

FEDERAL GENERAL CONFORMITY REGULATION

The Code of Federal Regulations, title 40, chapter I, subchapter C, parts 6 and 51 are amended and part 93 is added as follows:

PART 6--[AMENDED]

1. The authority citation for part 51 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

2. Section 6.303 is amended by reserving paragraphs (c) through (g) and revising paragraphs (a) and (b) to read as follows:

(a) The Clean Air Act, as amended in 1990, 42 U.S.C. 7476(c), requires Federal actions to conform to any State implementation plan approved or promulgated under section 110 of the Act. For EPA actions, the applicable conformity requirements specified in 40 CFR part 51, subpart W, 40 CFR part 93, subpart B, and the applicable State implementation plan must be met.

(b) In addition, with regard to wastewater treatment works subject to review under Subpart E of this part, the responsible official shall consider the air pollution control requirements specified in section 316(b) of the Clean Air Act, 42 U.S.C. 7616, and Agency implementation procedures.

PART 51--[AMENDED]

1. The authority citation for part 51 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

2. Part 51 is amended by adding a new subpart W to read as follows:

W -- DETERMINING CONFORMITY OF GENERAL FEDERAL ACTIONS TO STATE OR FEDERAL IMPLEMENTATION PLANS

Sec.

51.850 Prohibition.
51.851 State implementation plan (SIP) revision.
51.852 Definitions.
51.853 Applicability.
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W -- DETERMINING CONFORMITY OF GENERAL FEDERAL ACTIONS TO STATE OR FEDERAL IMPLEMENTATION PLANS

section 51.850 Prohibition.

(a) No department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan.

(b) A Federal agency must make a determination that a Federal action conforms to the applicable implementation plan in accordance with the requirements of this rule before the action

is taken.

(c) The preceding sentence does not include Federal actions where either:

(1) A National Environmental Policy Act (NEPA) analysis was completed as evidenced by a final environmental assessment (EA), environmental impact statement (EIS), or finding of no significant impact (FONSI) that was prepared prior to the effective date of this rule, or

(2) (i) Prior to the effective date of this rule, an EA was commenced or a contract was awarded to develop the specific environmental analysis,

(ii) Sufficient environmental analysis is completed by March 15, 1994 so that the Federal agency may determine that the Federal action is in conformity with the specific requirements and the purposes of the applicable SIP pursuant to the agency's affirmative obligation under section 176(c) of the Clean Air Act (Act), and

(iii) A written determination of conformity under section 176(c) of the Act has been made by the Federal agency responsible for the Federal action by March 15, 1994.

(d) Notwithstanding any provision of this subpart, a determination that an action is in conformance with the applicable implementation plan does not exempt the action from any other requirements of the applicable implementation plan, the NEPA, or the Act.

§51.851 State implementation plan (SIP) revision.

(a) Each State must submit to the Environmental Protection Agency (EPA) a revision to its applicable implementation plan which contains criteria and procedures for assessing the conformity of Federal actions to the applicable implementation plan, consistent with this subpart. The State must submit the conformity provisions within 12 months after November 31, 1993, or within 12 months of an area's designation to nonattainment, whichever date is later.

(b) The Federal conformity rules under this subpart and 40 CFR part 93, in addition to any existing applicable State requirements, establish the conformity criteria and procedures necessary to meet the Act requirements until such time as the required conformity SIP revision is approved by EPA. A State's conformity provisions must contain criteria and procedures that are no less stringent than the requirements described in this subpart. A State may establish more stringent conformity criteria and procedures only if they apply equally to non-Federal as well as Federal entities. Following EPA approval of the State conformity provisions (or a portion thereof) in a revision to the applicable SIP, the approved (or approved portion of the) State criteria and procedures would govern conformity determinations and the Federal conformity regulations contained in 40 CFR part 93 would apply only for the portion, if any, of the State's conformity provisions that is not approved by EPA. In addition, any previously applicable SIP requirements relating to conformity remain enforceable until the State revises its SIP to specifically remove them from the SIP and that revision is approved by EPA.

§51.852 Definitions.

Terms used but not defined in this part shall have the meaning given them by the Act and EPA's regulations, in that order of priority.

Affected Federal land manager means the Federal agency or the Federal official charged with direct responsibility for management of an area designated as Class I under 42 U.S.C. 7472 of the Act that is located within 100 km of the proposed Federal action.

Applicable implementation plan or applicable SIP means the portion (or portions) of the SIP or most recent revision thereof, which has been approved under section 110 of the Act, or promulgated under section 110(c) of the Act (Federal implementation plan), or promulgated or approved pursuant to regulations promulgated under section 301(d) of the Act and which implements the relevant requirements of the Act.

Areawide air quality modeling analysis means an assessment on a scale that includes the entire nonattainment or maintenance area which uses an air quality dispersion model to determine the effects of emissions on air quality.

Cause or contribute to a new violation means a Federal action that:

(1) Causes a new violation of a national ambient air quality standard (NAAQS) at a location in a nonattainment or maintenance area which would otherwise not be in violation of the standard during the future period in question if the Federal action were not taken, or

(2) Contributes, in conjunction with other reasonably foreseeable actions, to a new violation of a NAAQS at a location in a nonattainment or maintenance area in a manner that would increase the frequency or severity of the new violation.

Caused by, as used in the terms "direct emissions" and "indirect emissions," means emissions that would not otherwise occur in the absence of the Federal action.

Criteria pollutant or standard means any pollutant for which there is established a NAAQS at 40 CFR part 50.

Direct emissions means those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and occur at the same time and place as the action.

Emergency means a situation where extremely quick action on the part of the Federal agencies involved is needed and where the timing of such Federal activities makes it impractical to meet the requirements of this rule, such as natural disasters like hurricanes or earthquakes, civil disturbances such as terrorist acts, and military mobilizations.

Emissions budgets are those portions of the applicable SIP's projected emissions inventories that describe the levels of emissions (mobile, stationary, area, etc.) that provide for meeting reasonable further progress milestones, attainment, and/or maintenance for any criteria pollutant or its precursors.

Emission offsets, for purposes of section 51.858, are emissions reductions which are quantifiable, consistent with the applicable SIP attainment and reasonable further progress demonstrations, surplus to reductions required by, and credited to, other applicable SIP provisions, enforceable at both the State and Federal levels, and permanent within the timeframe specified by the program.

Emissions that a Federal agency has a continuing program responsibility for means emissions that are specifically caused by an agency carrying out its authorities, and does not include emissions that occur due to subsequent activities, unless such activities are required by the Federal agency. Where an agency, in performing its normal program responsibilities, takes actions itself or imposes conditions that result in air pollutant emissions by a non-Federal entity taking subsequent actions, such emissions are covered by the meaning of a continuing program responsibility.

EPA means the United States Environmental Protection Agency.

Federal action means any activity engaged in by a department, agency, or instrumentality of the Federal government, or any activity that a department, agency or instrumentality of the Federal government supports in any way, provides financial assistance for, licenses, permits, or approves, other than activities related to transportation plans, programs, and projects developed,

funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.). Where the Federal action is a permit, license, or other approval for some aspect of a non-Federal undertaking, the relevant activity is the part, portion, or phase or the non-Federal undertaking that requires the Federal permit, license, or approval.

Federal agency means, for purposes of this rule, a Federal department, agency, or instrumentality of the Federal government.

Increase the frequency or severity of any existing violation of any standard in any area means to cause a nonattainment area to exceed a standard more often or to cause a violation at a greater concentration than previously existed and/or would otherwise exist during the future period in question, if the project were not implemented.

Indirect emissions means those emissions of a criteria pollutant or its precursors that:

(1) Are caused by the Federal action, but may occur later in time and/or may be farther removed in distance from the action itself but are still reasonably foreseeable, and

(2) The Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency.

Local air quality modeling analysis means an assessment of localized impacts on a scale smaller than the entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals, which uses an air quality dispersion model to determine the effects of emissions on air quality.

Maintenance area means an area with a maintenance plan approved under section 175A of the Act.

Maintenance plan means a revision to the applicable SIP, meeting the requirements of section 175A of the Act.

Metropolitan Planning Organization (MPO) is that organization designated as being responsible, together with the State, for conducting the continuing, cooperative, and comprehensive planning process under 23 U.S.C. 134 and 49 U.S.C. 1607.

Milestone has the meaning given in sections 182(g)(1) and 189(c)(1) of the Act.

National ambient air quality standards (NAAQS) are those standards established pursuant to section 109 of the Act and include standards for carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone, particulate matter (PM-10), and sulfur dioxide (SO_2).

NEPA is the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.).

Nonattainment Area (NAA) means an area designated as nonattainment under section 107 of the Act and described in 40 CFR part 81.

Precursors of a criteria pollutant are:

(1) For ozone, nitrogen oxides (NOx), unless an area is exempted from NOx requirements under section 182(f) of the Act, and volatile organic compounds (VOC) and

(2) For PM-10, those pollutants described in the PM-10 nonattainment area applicable SIP as significant contributors to the PM-10 levels.

Reasonably foreseeable emissions are projected future indirect emissions that are identified at the time the conformity determination is made; the location of such emissions is known and the emissions are quantifiable, as described and documented by the Federal agency based on its own information and after reviewing any information presented to the Federal agency.

Regionally significant action means a Federal action for which the direct and indirect emissions of any pollutant represent 10 percent or more of a nonattainment or maintenance

area's emissions inventory for that pollutant.

Regional water and/or wastewater projects include construction, operation, and maintenance of water or wastewater conveyances, water or wastewater treatment facilities, and water storage reservoirs which affect a large portion of a nonattainment or maintenance area.

Total of direct and indirect emissions means the sum of direct and indirect emissions increases and decreases caused by the Federal action; i.e., the "net" emissions considering all direct and indirect emissions. The portion of emissions which are exempt or presumed to conform under section 51.853, paragraph (c), (d), (e), or (f) are not included in the "total of direct and indirect emissions." The "total of direct and indirect emissions" includes emissions of criteria pollutants and emissions of precursors of criteria pollutants.

§51.853 Applicability.

(a) Conformity determinations for Federal actions related to transportation plans, programs, and projects developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.) must meet the procedures and criteria of 40 CFR part 51, subpart T, in lieu of the procedures set forth in this subpart.

(b) For Federal actions not covered by paragraph (a) of this section, a conformity determination is required for each pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a Federal action would equal or exceed any of the rates in paragraphs (b)(1) or (2) of this section.

(1) For purposes of paragraph (b) of this section, the following rates apply in **nonattainment areas (NAAs)**:

	Tons/Year
Ozone (VOC's or NOx)	
Serious NAA's	50
Severe NAA's	25
Extreme NAA's	10
Other ozone NAA's outside an ozone transport region	100
Marginal and moderate NAA's inside an ozone transport region	
VOC	50
NOx	100
Carbon monoxide	
All NAA's	100
SO_2 or NO_2	
All NAA's	100
PM-10	
Moderate NAA's	100
Serious NAA's	70
Pb	
All NAA's	25

(2) For purposes of paragraph (b) of this section, the following rates apply in **maintenance areas**:

	Tons/Year
Ozone (NOx), SO_2 or NO_2	
All Maintenance Areas	100
Ozone (VOC's)	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
Carbon monoxide	
All maintenance areas	100
PM-10	
All maintenance areas	100
Pb	
All maintenance areas	25

(c) The requirements of this subpart shall not apply to:

(1) Actions where the total of direct and indirect emissions are below the emissions levels specified in paragraph (b) of this section.

(2) The following actions which would result in no emissions increase or an increase in emissions that is clearly de minimis:

(i) Judicial and legislative proceedings.

(ii) Continuing and recurring activities such as permit renewals where activities conducted will be similar in scope and operation to activities currently being conducted.

(iii) Rulemaking and policy development and issuance.

(iv) Routine maintenance and repair activities, including repair and maintenance of administrative sites, roads, trails, and facilities.

(v) Civil and criminal enforcement activities, such as investigations, audits, inspections, examinations, prosecutions, and the training of law enforcement personnel.

(vi) Administrative actions such as personnel actions, organizational changes, debt management or collection, cash management, internal agency audits, program budget proposals, and matters relating to the administration and collection of taxes, duties and fees.

(vii) The routine, recurring transportation of materiel and personnel.

(viii) Routine movement of mobile assets, such as ships and aircraft, in home port reassignments and stations (when no new support facilities or personnel are required) to perform as operational groups and/or for repair or overhaul.

(ix) Maintenance dredging and debris disposal where no new depths are required, applicable permits are secured, and disposal will be at an approved disposal site.

(x) Actions, such as the following, with respect to existing structures, properties, facilities and lands where future activities conducted will be similar in scope and operation to activities currently being conducted at the existing structures, properties, facilities, and lands; for example, relocation of personnel, disposition

of federally-owned existing structures, properties, facilities, and lands, rent subsidies, operation and maintenance cost subsidies, the exercise of receivership or conservatorship authority, assistance in purchasing structures, and the production of coins and currency.

(xi) The granting of leases, licenses such as for exports and trade, permits, and easements where activities conducted will be similar in scope and operation to activities currently being conducted.

(xii) Planning, studies, and provision of technical assistance.

(xiii) Routine operation of facilities, mobile assets and equipment.

(xiv) Transfers of ownership, interests, and titles in land, facilities, and real and personal properties, regardless of the form or method of the transfer.

(xv) The designation of empowerment zones, enterprise communities, or viticultural areas.

(xvi) Actions by any of the Federal banking agencies or the Federal Reserve Banks, including actions regarding charters, applications, notices, licenses, the supervision or examination of depository institutions or depository institution holding companies, access to the discount window, or the provision of financial services to banking organizations or to any department, agency or instrumentality of the United States.

(xvii) Actions by the Board of Governors of the Federal Reserve System or any Federal Reserve Bank to effect monetary or exchange rate policy.

(xviii) Actions that implement a foreign affairs function of the United States.

(xix) Actions (or portions thereof) associated with transfers of land, facilities, title, and real properties through an enforceable contract or lease agreement where the delivery of the deed is required to occur promptly after a specific, reasonable condition is met, such as promptly after the land is certified as meeting the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and where the Federal agency does not retain continuing authority to control emissions associated with the lands, facilities, title, or real properties.

(xx) Transfers of real property, including land, facilities, and related personal property from a Federal entity to another Federal entity and assignments of real property, including land, facilities, and related personal property from a Federal entity to another Federal entity for subsequent deeding to eligible applicants.

(xxi) Actions by the Department of the Treasury to effect fiscal policy and to exercise the borrowing authority of the United States.

(3) Actions where the emissions are not reasonably foreseeable, such as the following:

(i) Initial Outer Continental Shelf lease sales which are made on a broad scale and are followed by exploration and development plans on a project level.

(ii) Electric power marketing activities that involve the acquisition, sale and transmission of electric energy.

(4) Actions which implement a decision to conduct or carry out a conforming program such as prescribed burning actions which are consistent with a conforming land management plan.

(d) Notwithstanding the other requirements of this subpart, a conformity determination is **not** required for the following Federal actions (or portion thereof):

(1) The portion of an action that includes major new or modified stationary sources that require a permit under the new source review (NSR) program (section 173 of the Act) or the prevention of significant deterioration (PSD) program (title I, part C of the Act).

(2) Actions in response to emergencies or natural disasters such as hurricanes, earthquakes, etc., which are commenced on the order of hours or days after the emergency or disaster and, if applicable, which meet the requirements of paragraph (e) of this section;

(3) Research, investigations, studies, demonstrations, or training [other than those exempted under section 51.853(c)(2)], where no environmental detriment is incurred and/or, the particular action furthers air quality research, as determined by the State agency primarily responsible for the applicable SIP;

(4) Alteration and additions of existing structures as specifically required by new or existing applicable environmental legislation or environmental regulations (e.g., hush houses for aircraft engines and scrubbers for air emissions).

(5) Direct emissions from remedial and removal actions carried out under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and associated regulations to the extent such emissions either comply with the substantive requirements of the PSD/NSR permitting program or are exempted from other environmental regulation under the provisions of CERCLA and applicable regulations issued under CERCLA.

(e) Federal actions which are part of a continuing response to an emergency or disaster under section 51.853(d)(2) and which are to be taken more than 6 months after the commencement of the response to the emergency or disaster under section 51.853(d)(2) are exempt from the requirements of this subpart only if:

(1) The Federal agency taking the actions makes a written determination that, for a specified period not to exceed an additional 6 months, it is impractical to prepare the conformity analyses which would otherwise be required and the actions cannot be delayed due to overriding concerns for public health and welfare, national security interests and foreign policy commitments; or

(2) For actions which are to be taken after those actions covered by paragraph (e)(1) of this section, the Federal agency makes a new determination as provided in paragraph (e)(1) of this section.

(f) Notwithstanding other requirements of this subpart, actions specified by individual Federal agencies that have met the criteria set forth in either paragraph (g)(1) or (g)(2) and the procedures set forth in paragraph (h) of this section are presumed to conform, except as provided in paragraph (j) of this section.

(g) The Federal agency must meet the criteria for establishing activities that are presumed to conform by fulfilling the requirements set forth in either paragraph (g)(1) or (g)(2) of this section:

(1) The Federal agency must clearly demonstrate using methods consistent with this

rule that the total of direct and indirect emissions from the type of activities which would be presumed to conform would not:

(i) Cause or contribute to any new violation of any standard in any area;

(ii) Interfere with provisions in the applicable SIP for maintenance of any standard;

(iii) Increase the frequency or severity of any existing violation of any standard in any
area; or

(iv) Delay timely attainment of any standard or any required interim emission reductions or other milestones in any area including, where applicable, emission levels specified in the applicable SIP for purposes of:

(A) A demonstration of reasonable further progress;

(B) A demonstration of attainment; or

(C) A maintenance plan; or

(2) The Federal agency must provide documentation that the total of direct and indirect emissions from such future actions would be below the emission rates for a conformity determination that are established in paragraph (b) of this section, based, for example, on similar actions taken over recent years.

(h) In addition to meeting the criteria for establishing exemptions set forth in paragraphs (g)(1) or (g)(2) of this section, the following procedures must also be complied with to presume that activities will conform:

(1) The Federal agency must identify through publication in the Federal Register its list of proposed activities that are presumed to conform and the basis for the presumptions;

(2) The Federal agency must notify the appropriate EPA Regional Office(s), State and local air quality agencies and, where applicable, the agency designated under section 174 of the Act and the MPO and provide at least 30 days for the public to comment on the list of proposed activities presumed to conform;

(3) the Federal agency must document its response to all the comments received and make the comments, response, and final list of activities available to the public upon request; and

(4) the Federal agency must publish the final list of such activities in the Federal Register.

(i) Notwithstanding the other requirements of this subpart, when the total of direct and indirect emissions of any pollutant from a Federal action does not equal or exceed the rates specified in paragraph (b) of this section, but represents 10 percent or more of a nonattainment or maintenance area's total emissions of that pollutant, the action is defined as a regionally significant action and the requirements of section 51.850 and sections 51.855-860 shall apply for the Federal action.

(j) Where an action otherwise presumed to conform under paragraph (f) of this section is a regionally significant action or does not in fact meet one of the criteria in paragraph (g)(1) of this section, that action shall not be presumed to conform and the requirements of section 51.850 and sections 51.855-860 shall apply for the Federal action.

(k) The provisions of this subpart shall apply in all nonattainment and maintenance areas.

§51.854 Conformity analysis.

Any Federal department, agency, or instrumentality of the Federal government taking an action subject to this subpart must make its own conformity determination consistent with the requirements of this subpart. In making its conformity determination, a Federal agency must consider comments from any interested parties. Where multiple Federal agencies have jurisdiction for various aspects of a project, a Federal agency may choose to adopt the analysis of another Federal agency or develop its own analysis in order to make its conformity determination.

§51.855 Reporting requirements.

(a) A Federal agency making a conformity determination under section 51.858 must provide to the appropriate EPA Regional Office(s), State and local air quality agencies and, where applicable, affected Federal land managers, the agency designated under section 174 of the Act and the MPO a 30 day notice which describes the proposed action and the Federal agency's draft conformity determination on the action.

(b) A Federal agency must notify the appropriate EPA Regional Office(s), State and local air quality agencies and, where applicable, affected Federal land managers, the agency designated under section 174 of the Clean Air Act and the MPO within 30 days after making a final conformity determination under section 51.858.

§51.856 Public participation.

(a) Upon request by any person regarding a specific Federal action, a Federal agency must make available for review its draft conformity determination under section 51.858 with supporting materials which describe the analytical methods and conclusions relied upon in making the applicability analysis and draft conformity determination.

(b) A Federal agency must make public its draft conformity determination under section 51.858 by placing a notice by prominent advertisement in a daily newspaper of general circulation in the area affected by the action and by providing 30 days for written public comment prior to taking any formal action on the draft determination. This comment period may be concurrent with any other public involvement, such as occurs in the NEPA process.

(c) A Federal agency must document its response to all the comments received on its draft conformity determination under section 51.858 and make the comments and responses available, upon request by any person regarding a specific Federal action, within 30 days of the final conformity determination.

(d) A Federal agency must make public its final conformity determination under section 51.858 for a Federal action by placing a notice by prominent advertisement in a daily newspaper of general circulation in the area affected by the action within 30 days of the final conformity determination.

§51.857 Frequency of conformity determinations.

(a) The conformity status of a Federal action automatically lapses 5 years from the date a final conformity determination is reported under section 51.855, unless the Federal action has been completed or a continuous program has been commenced to implement that Federal action within a reasonable time.

(b) Ongoing Federal activities at a given site showing continuous progress are not new actions and do not require periodic redeterminations so long as such activities are within the scope of the final conformity determination reported under section 51.855.

(c) If, after the conformity determination is made, the Federal action is changed so that there is an increase in the total of direct and indirect emissions above the levels in section 51.853(b), a new conformity determination is required.

§51.858 Criteria for determining conformity of general Federal actions.

(a) An action required under section 51.853 to have a conformity determination for a specific pollutant, will be determined to conform to the applicable SIP if, for each pollutant that exceeds the rates in section 51.853, paragraph (b), or otherwise requires a conformity determination due to the total of direct and indirect emissions from the action, the action meets the requirements of paragraph (c) of this section, and meets any of the following requirements:

(1) For any criteria pollutant, the total of direct and indirect emissions from the action are specifically identified and accounted for in the applicable SIP's attainment or maintenance demonstration;

(2) For ozone or nitrogen dioxide, the total of direct and indirect emissions from the action are fully offset within the same nonattainment or maintenance area through a revision to the applicable SIP or a similarly enforceable measure that effects emission reductions so that there is no net increase in emissions of that pollutant;

(3) For any criteria pollutant, except ozone and nitrogen dioxide, the total of direct and indirect emissions from the action meet the requirements:

(i) specified in paragraph (b) of this section, based on areawide air quality modeling analysis and local air quality modeling analysis, or

(ii) meet the requirements of paragraph (a)(5) and, for local air quality modeling analysis, the requirement of paragraph (b) of this section;

(4) For CO or PM-10,

(i) Where the State agency primarily responsible for the applicable SIP determines that an areawide air quality modeling analysis is not needed, the total of direct and indirect emissions from the action meet the requirements specified in paragraph (b) of this section, based on local air quality modeling analysis or

(ii) Where the State agency primarily responsible for the applicable SIP determines that an areawide air quality modeling analysis is appropriate and that a local air quality modeling analysis is not needed, the total of direct and indirect emissions from the action meet the requirements specified in paragraph (b) of this section, based on areawide modeling, or meet the requirements of paragraph (a)(5) of this section; or

(5) For ozone or nitrogen dioxide, and for purposes of paragraphs (a)(3)(ii) and (a)(4)(ii) of this section, each portion of the action or the action as a whole meets any of the following requirements:

(i) Where EPA has approved a revision to an area's attainment or maintenance demonstration after 1990 and the State makes a determination as provided in paragraph (A) or where the State makes a commitment as provided in paragraph (B):

(A) The total of direct and indirect emissions from the action (or portion thereof) is determined and documented by the State agency

primarily responsible for the applicable SIP to result in a level of emissions which, together with all other emissions in the nonattainment (or maintenance) area, would not exceed the emissions budgets specified in the applicable SIP.

(B) The total of direct and indirect emissions from the action (or portion thereof) is determined by the State agency responsible for the applicable SIP to result in a level of emissions which, together with all other emissions in the nonattainment (or maintenance) area, would exceed an emissions budget specified in the applicable SIP and the State Governor or the Governor's designee for SIP actions makes a written commitment to EPA which includes the following:

(1) A specific schedule for adoption and submittal of a revision to the SIP which would achieve the needed emission reductions prior to the time emissions from the Federal action would occur;

(2) Identification of specific measures for incorporation into the SIP which would result in a level of emissions which, together with all other emissions in the nonattainment or maintenance area, would not exceed any emissions budget specified in the applicable SIP;

(3) A demonstration that all existing applicable SIP requirements are being implemented in the area for the pollutants affected by the Federal action, and that local authority to implement additional requirements has been fully pursued;

(4) A determination that the responsible Federal agencies have required all reasonable mitigation measures associated with their action; and

(5) Written documentation including all air quality analyses supporting the conformity determination.

(C) Where a Federal agency made a conformity determination based on a State commitment under subparagraph (a)(5)(i)(B) of this paragraph, such a State commitment is automatically deemed a call for a SIP revision by EPA under section 110(k)(5) of the Act, effective on the date of the Federal conformity determination and requiring response within 18 months or any shorter time within which the State commits to revise the applicable SIP;

(ii) The action (or portion thereof), as determined by the MPO, is specifically included in a current transportation plan and transportation improvement program which have been found to conform to the applicable SIP under 40 CFR part 51, subpart T, or 40 CFR part 93, subpart A;

(iii) The action (or portion thereof) fully offsets its emissions within the same nonattainment or maintenance area through a revision to the applicable SIP or an equally enforceable measure that effects emission reductions equal to or greater than the total of direct and indirect emissions from the action so that there is no net increase in emissions of that pollutant;

(iv) Where EPA has not approved a revision to the relevant SIP attainment or maintenance demonstration since 1990, the total of direct and indirect emissions from the action for the future years [described in paragraph (d) of section 51.859]

do not increase emissions with respect to the baseline emissions;

(A) The baseline emissions reflect the historical activity levels that occurred in the geographic area affected by the proposed Federal action during:

(1) Calendar year 1990,

(2) The calendar year that is the basis for the classification (or, where the classification is based on multiple years, the most representative year), if a classification is promulgated in 40 CFR part 81, or

(3) The year of the baseline inventory in the PM-10 applicable SIP;

(B) The baseline emissions are the total of direct and indirect emissions calculated for the future years [described in paragraph (d) of section 51.859] using the historic activity levels [described in subparagraph (a)(5)(iv)(A) of this paragraph] and appropriate emission factors for the future years; or

(v) Where the action involves regional water and/or wastewater projects, such projects are sized to meet only the needs of population projections that are in the applicable SIP.

(b) The areawide and/or local air quality modeling analyses must:

(1) Meet the requirements in section 51.859 and

(2) Show that the action does not:

(i) Cause or contribute to any new violation of any standard in any area; or

(ii) Increase the frequency or severity of any existing violation of any standard in any area.

(c) Notwithstanding any other requirements of this section, an action subject to this subpart may not be determined to conform to the applicable SIP unless the total of direct and indirect emissions from the action is in compliance or consistent with all relevant requirements and milestones contained in the applicable SIP, such as elements identified as part of the reasonable further progress schedules, assumptions specified in the attainment or maintenance demonstration, prohibitions, numerical emission limits, and work practice requirements.

(d) Any analyses required under this section must be completed, and any mitigation requirements necessary for a finding of conformity must be identified before the determination of conformity is made.

§51.859 Procedures for conformity determinations of general Federal actions.

(a) The analyses required under this subpart must be based on the latest planning assumptions.

(1) All planning assumptions must be derived from the estimates of population, employment, travel, and congestion most recently approved by the MPO, or other agency authorized to make such estimates, where available.

(2) Any revisions to these estimates used as part of the conformity determination, including projected shifts in geographic location or level of population, employment, travel, and

congestion, must be approved by the MPO or other agency authorized to make such estimates for the urban area.

(b) The analyses required under this subpart must be based on the latest and most accurate emission estimation techniques available as described below, unless such techniques are inappropriate. If such techniques are inappropriate and written approval of the EPA Regional Administrator is obtained for any modification or substitution, they may be modified or another technique substituted on a case-by-case basis or, where appropriate, on a generic basis for a specific Federal agency program.

(1) For motor vehicle emissions, the most current version of the motor vehicle emissions model specified by EPA and available for use in the preparation or revision of SIPs in that State must be used for the conformity analysis as specified below:

(i) The EPA must publish in the Federal Register a notice of availability of any new motor vehicle emissions model; and

(ii) A grace period of three months shall apply during which the motor vehicle emissions model previously specified by EPA as the most current version may be used. Conformity analyses for which the analysis was begun during the grace period or no more than 3 years before the Federal Register notice of availability of the latest emission model may continue to use the previous version of the model specified by EPA.

(2) For non-motor vehicle sources, including stationary and area source emissions, the latest emission factors specified by EPA in the "Compilation of Air Pollutant Emission Factors (AP-42)" must be used for the conformity analysis unless more accurate emission data are available, such as actual stack test data from stationary sources which are part of the conformity analysis.

(c) The air quality modeling analyses required under this Subpart must be based on the applicable air quality models, data bases, and other requirements specified in the most recent version of the "Guideline on Air Quality Models (Revised)" (1986), including supplements (EPA publication no. 450/2-78-027R), unless:

(1) The guideline techniques are inappropriate, in which case the model may be modified or another model substituted on a case-by-case basis or, where appropriate, on a generic basis for a specific Federal agency program; and

(2) Written approval of the EPA Regional Administrator is obtained for any modification or substitution.

(d) The analyses required under this subpart, except section 51.858, paragraph (a)(1), must be based on the total of direct and indirect emissions from the action and must reflect emission scenarios that are expected to occur under each of the following cases:

(1) The Act mandated attainment year or, if applicable, the farthest year for which emissions are projected in the maintenance plan;

(2) The year during which the total of direct and indirect emissions from the action is expected to be the greatest on an annual basis; and

(3) any year for which the applicable SIP specifies an emissions budget.

§51.860 Mitigation of air quality impacts.

(a) Any measures that are intended to mitigate air quality impacts must be identified and the process for implementation and enforcement of such measures must be described, including an implementation schedule containing explicit timelines for implementation.

(b) Prior to determining that a Federal action is in conformity, the Federal agency making the conformity determination must obtain written commitments from the appropriate persons or agencies to implement any mitigation measures which are identified as conditions for making conformity determinations.

c) Persons or agencies voluntarily committing to mitigation measures to facilitate positive conformity determinations must comply with the obligations of such commitments.

(d) In instances where the Federal agency is licensing, permitting or otherwise approving the action of another governmental or private entity, approval by the Federal agency must be conditioned on the other entity meeting the mitigation measures set forth in the conformity determination.

(e) When necessary because of changed circumstances, mitigation measures may be modified so long as the new mitigation measures continue to support the conformity determination. Any proposed change in the mitigation measures is subject to the reporting requirements of section 51.856 and the public participation requirements of section 51.857.

(f) The implementation plan revision required in section 51.851 of this subpart shall provide that written commitments to mitigation measures must be obtained prior to a positive conformity determination and that such commitments must be fulfilled.

(g) After a State revises its SIP to adopt its general conformity rules and EPA approves that SIP revision, any agreements, including mitigation measures, necessary for a conformity determination will be both State and federally enforceable. Enforceability through the applicable SIP will apply to all persons who agree to mitigate direct and indirect emissions associated with a Federal action for a conformity determination.

RULE 9310 SCHOOL BUS FLEETS (Adopted September 21, 2006)

1.0 Purpose

The purpose of this rule is to limit emissions of nitrogen oxides (NOx), particulate matter (PM) and diesel toxic air contaminants from school bus fleets and to provide administrative requirements for school bus fleet operators.

2.0 Applicability

The requirements of this rule shall apply to all school bus fleet operators and any contractors who provide school bus service.

3.0 Definitions

3.1 Air Pollution Control Officer (APCO): as defined Rule 1020 (Definitions).

3.2 Alternative Fueled Engine or School Bus: any engine or school bus that uses compressed or liquefied natural gas, propane, methanol, electricity, fuel cells, hybrid technology, or other advanced technologies that do not rely on diesel or gasoline fuels, and has been certified by the California Air Resources Board.

3.3 Approved Diesel Emission Control Strategy: an exhaust control device(s) or emission reduction strategy that is level 3 verified by the ARB. Level 3 verified technologies reduce particulate matter (PM) by at least 85% or achieve a PM level of 0.01 g/bhp-hr or less.

3.4 California Air Resources Board (ARB or CARB): as defined in Rule 1020 (Definitions).

3.5 Environmental Protection Agency (EPA): United States Environmental Protection Agency.

3.6 Existing Fleet: a school bus fleet that was in operation before January 1, 2007.

3.6 Existing School Bus: a bus operating as part of an existing fleet.

3.7 Gross Vehicle Weight Rating (GVWR): the weight rating of a vehicle.

3.8 Hybrid: a technology used by a vehicle to draw propulsion energy from both of the following on-vehicle sources of stored energy: 1) a consumable fuel and 2) an energy storage device such as a battery, capacitor, or flywheel.

3.9 New School Bus Fleet: a school bus fleet that did not operate before January 1, 2007.

3.10 NOx (Oxides of Nitrogen): any oxide of nitrogen.

3.11 Operator: any person who owns, leases, or operates school buses for any school in the San Joaquin Valley Air Basin.

3.12 PM (Particulate Matter): any material except uncombined water, which exists in a finely divided form as a liquid or solid at Standard Conditions.

3.13 Replacement School Bus: a school bus purchased or acquired with the intent of removing an existing school bus from service.

3.14 Repower: to remove the engine and related components and replace with an ARB certified engine.

3.15 Retrofit: to modify with an Approved Diesel Emission Control Strategy.

3.16 School: any public or private school used for the purpose of education and instruction of school pupils Kindergarten through Grade 12, but does not include any private school in which education and instruction is primarily conducted in private homes.

3.17 School Bus: any vehicle used for the express purpose of transporting students Kindergarten through Grade 12 from home to school and to any school sponsored activities.

3.18 School Bus Fleet: any group of one or more school buses.

3.19 Toxic Air Contaminants (TAC): any air pollutant identified in regulation by the ARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health.

3.20 Year of Delivery: no more than 12 months from the date that the school bus is delivered to the school bus fleet operator.

4.0 Exemptions

4.1 School buses with a GVWR of less than or equal to 8,500 pounds are exempt from the requirements listed in Section 5.0.

4.2 Fleet operators claiming an exemption pursuant to Section 4.1 shall maintain records as specified in Section 6.4.2.

4.3 School buses replaced, retrofitted and/or repowered, with the use of eligible incentive funds, are exempt from the requirements listed in Section 5.1 provided that such actions are completed prior to the otherwise applicable deadlines. Such buses may be included as compliant vehicles for Section 5.2. Furthermore, emissions reduced using eligible incentive funds will be considered surplus to this rule.

5.0 Requirements

5.1 By January 1, 2016 operators of existing school bus fleets shall meet the following requirements:

5.1.1 Each existing diesel fueled school bus fleet operator shall:

5.1.1.1 Replace all of their school buses manufactured before January 1, 1978 with buses that meet the applicable ARB and EPA emission standards for engines certified for the year of delivery of that school bus engine and fuel type, and

5.1.1.2 Replace their school buses manufactured on and after January 1, 1978 with buses that meet the applicable ARB and EPA emission standards for engines manufactured for the year of delivery; or

5.1.1.3 Retrofit their school buses manufactured on and after January 1, 1978 with an Approved Diesel Emission Control Strategy or

5.1.1.4 Repower their school buses with an engine meeting all the ARB and EPA emissions standards that are applicable to engines produced on and after October 1, 2002.

5.1.2 All existing gasoline or alternative fueled school buses and any diesel school buses manufactured after October 1, 2002 shall be considered compliant if it meets the following:

5.1.2.1 Operated per manufacturers specification, and

5.1.2.2 If replaced, shall be replaced with a school bus meeting all the applicable ARB and EPA current year emissions standards for the year of delivery of that school bus engine and fuel type.

5.2 On and after January 1, 2007, any new school bus fleet and any additions to an existing school bus fleet must meet all the applicable ARB and EPA emissions standards for the year of delivery of that school bus engine and fuel type.

6.0 Administrative Requirements

6.1 Identify Existing Fleet

By January 1, 2007, each operator shall provide the District with a list of existing school buses in their fleet identifying the following information for each school bus:

6.1.1 The manufacturer, to include make and model of the chassis, and the year built.

6.1.2 The engine manufacturer.

6.1.3 The year of manufacture of the engine.

6.1.4 The engine fuel type.

6.1.5 The Vehicle Identification Number (VIN).

6.1.6 The gross vehicle weight rating.

6.1.7 The size in passenger capacity.

6.1.8 Any currently installed emission controls.

6.1.9 An explanation of how each bus will comply with the requirements of Section 5.0.

6.1.10 The year of the last California Highway Patrol safety certification.

6.2 Identify New Fleets and Additions to Fleets, Replacements, and Any Retrofits and/or Repowers

At least two months before purchasing, replacing, retrofitting or repowering, each operator shall provide the District with the following information:

6.2.1 The anticipated date of purchase for any bus, retrofit or repower.

6.2.2 The date of delivery of the new purchase and any addition to the existing fleet.

6.2.3 The manufacturer, to include make and model of the chassis, and the year built.

6.2.4 The engine manufacturer.

6.2.5 The year of manufacture of the engine.

6.2.6 The engine fuel type.

6.2.7 The gross vehicle weight rating.

6.2.8 The size in passenger capacity.

6.2.9 Any emission controls.

6.3 Within one month after taking delivery of a replacement school bus or retrofitting or repowering a school bus, the operator shall provide the APCO with the VIN for the replacement school bus, and make any corrections to the information provided per Section 6.2.

6.4 Recordkeeping

6.4.1 For school buses applicable to Section 5.0, each fleet operator shall maintain records of annual mileage per bus and the amount of fuel purchased annually for the fleet, recorded by fuel type.

6.4.2 Each fleet operator seeking an exemption under Section 4.0 shall maintain travel records of mileage, fuel usage, and trip destinations for each bus exempt per Section 4.1.

6.4.3 Effective and beginning on and after September 21, 2006 records shall be maintained for a minimum of five years and made available for inspection by the APCO upon request.

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RULE 9410 EMPLOYER BASED TRIP REDUCTION (Adopted December 17, 2009)

1.0 Purpose

The purpose of this rule is reduce vehicle miles traveled (VMT) from private vehicles used by employees to commute to and from their worksites to reduce emissions of oxides of nitrogen (NOx), volatile organic compounds (VOC) and particulate matter (PM).

2.0 Applicability

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2.1 The trip reduction and administrative requirements of this rule apply to each employer in the San Joaquin Valley Air Basin with at least 100 Eligible Employees at a worksite for at least 16 consecutive weeks during the employer's previous fiscal year, that is located either,

2.1.1 Within an incorporated city with a population of at least 10,000, as determined by the Demographic Research Unit of the Department of Finance, or

2.1.2 Within an incorporated city with a population of less than 10,000, as determined by the Demographic Research Unit of the Department of Finance, and more than 50 percent of their employees work at least 2,040 hours per year, or

2.1.3 Within the unincorporated area of a county, and more than 50 percent of their employees work at least 2,040 hours per year.

3.0 Definitions

3.1 APCO: the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District.

3.2 Attendance at a Marketing Class/Focus Group: *(ETRIP measure)* Annual attendance by the Employee Transportation Coordinator at an Employee Trip Reduction program marketing class/focus group provided by the District or its designee.

3.3 "Best Workplaces for Commuters" Recognition: *(ETRIP measure)* Businesses who, through application to the Best Workplaces for Commuters program, are found to meet the National Standard of Excellence in commuter benefits can be included in the national list of Best Workplaces for Commuters. This is a standard created by the Center for Urban Transportation Research and the U.S. Environmental Protection Agency. See www.bestworkplaces.org for more information.

3.4 Bicycle Subsidy: *(ETRIP measure)* Employers pay for all or part of the purchase of a bicycle and/or bicycle improvements, repair, and storage for Eligible Employees that use these services and regularly commute by bicycle, as determined by the employer. The employer must provide information on the ETRIP regarding the monetary value of the bicycle subsidy and the frequency of distribution to Eligible Employees.

3.5 Bicycle Racks: *(ETRIP measure)* Racks and secure bicycle parking is provided to accommodate Eligible Employees who bicycle to work. The employer must provide secure bicycle parking for the foreseeable need of the bicycle commuters.

3.6 Break and/or Lunch Activities: *(ETRIP measure)* Employer-sanctioned or employer-promoted activities that may reduce the amount of Eligible Employees going offsite during breaks and/or lunches at least two times per month. May include activities such as games, movies, etc.

3.7 Carpool: a vehicle occupied by two (2) or more potential drivers, sixteen (16) years of age or older, traveling together to their worksites or destinations that eliminates at least a portion of one of their commute trips. Employers may set minimum eligibility criteria for incentives, including qualifying levels of ridership and trip distances.

3.8 CEO Communication: *(ETRIP measure)* Direct communication by the employer's CEO to introduce alternative commute modes, outline incentives, and encourage participation in a rideshare program. This must occur, at a minimum, on an annual basis. May occur as verbal or written communication.

3.9 Commute Trip: The trip made by an employee from home to the worksite. The commute trip may include stops between home and the worksite.

3.10 Commute Verification Form: A required questionnaire, distributed by employers to all Eligible Employees, designed to assess employee modes of transportation.

3.11 Commute Verification Period: A period of at least one week, selected by the employer to represent a typical work week. The Commute Verification Period shall not contain a federal, state, or local holiday, regardless of whether the holiday is observed by the employer. Employers with a Compressed Work Week schedule may opt to collect employee commute mode information over a two-week pay period providing that period does not contain a federal, state, or local holiday, regardless of whether or not the holiday is observed by the employer.

3.12 Comprehensive Bicycle Program: *(ETRIP measure)* Employer-promoted program which encourages bicycle commuting. This is intended to be a multi-faceted program that includes bicycle racks, information (such as bicycle lanes and safety considerations), and a repair kit or tools (such as a tire pump). The employer should also publicize any local Bike to Work events, typically held in May, to its employees.

3.13 Comprehensive Carpool Program: *(ETRIP measure)* Employer-promoted program designed to encourage the use of existing carpools or the development of new carpools. This is intended to be a multi-faceted program that includes internal ride matching or personalized commute assistance, ridesharing information, and resources on how to start a carpool. The employer should also publicize any local ridesharing events to its employees.

3.14 Comprehensive Vanpool Program: *(ETRIP measure)* Employer-promoted program designed to encourage the use of existing vanpools or the development of new vanpools. This is intended to be a multi-faceted program that includes information on vanpool availability, benefits of vanpooling, and any incentives offered by the employer or an outside agency.

3.15 Compressed Work Week (CWW): *(ETRIP measure)* A regular, full-time work schedule which eliminates at least one round-trip commute trip (both home-to-work and work-to-home) at least once every two (2) weeks for participating employees. A CWW schedule must be implemented in a manner that reduces trips to the worksite, as an alternative to completing the basic work requirement of five eight-hour workdays in one week, or ten eight hour workdays in two weeks. CWW examples include, but are not limited to, working three twelve-hour days (3/36) or four ten-hour days (4/10) within a one week period; or eight nine-hour days and one eight-hour day (9/80) within a two week period.

3.16 Discount Transit Passes: *(ETRIP measure)* Employers pay for part of the cost of commuting by local transit, commuter rail or train for Eligible Employees that use these services.

3.17 Discounted/Free Meals: *(ETRIP measure)* Employers provide participating Eligible Employees with meals free or at least fifty (50) percent discounted for their participation in the trip reduction program. The employer must offer meals to all participating Eligible Employees at least once per month.

3.18 Dry Cleaning: *(ETRIP measure)* Onsite pick up and delivery of Eligible Employees personal laundry through an outside agency.

3.19 Eligible Employee: Any employee that is not defined as an Excluded Employee.

3.20 Emergency Health and Safety Employee: Any employee that is required to have an authorized emergency response vehicle, as defined by California Vehicle Code Section 165, at home on an on-call basis, or any sworn peace officer or firefighter.

3.21 Employee Transportation Coordinator (ETC): An individual or entity appointed by an employer to develop, market, administer, and monitor the Employer Trip Reduction Implementation Plan (ETRIP) on a full or part-time basis. An employer with multiple worksites may select worksite-specific ETCs or select one ETC to serve for all worksites.

3.22 Employer: A person(s), firm, business, education institution, government agency, non-profit agency or corporation, or other entity which employs persons at a worksite. Several subsidiaries or units that occupy the same worksite and report to one common governing board or governing entity or that function as one corporate unit are considered to be one employer.

3.23 Employer-Provided Bicycles: *(ETRIP measure)* Bicycles that are provided by the employer and made available for employee use during lunch and breaks.

3.24 Employer Rideshare Event: *(ETRIP measure)* Employer sponsored events available to all Eligible Employees which promote rideshare opportunities, such as:

3.24.1 Employee Rideshare Fair that has multiple agencies or resources about alternative transportation in the vicinity of the worksite.

3.24.2 Presentation on the alternative transportation opportunities and services available to the worksite and benefits of ridesharing. This should be at least a one-hour meeting for all Eligible Employees or the equivalent.

3.24.3 Week-long Alternative Transportation/Rideshare event where Eligible Employees are encouraged to try alternative transportation throughout the week.

3.25 Employer Rideshare Newsletter: *(ETRIP measure)* An employer-distributed newsletter that discusses alternative transportation modes, outlines incentives, and encourages participation in a rideshare program. Must be distributed at least quarterly to all Eligible Employees. A newsletter should be at least two pages long and be text-driven to provide Eligible Employees with detailed information about ridesharing and alternative transportation. Could be an electronic newsletter.

3.26 Employer Rideshare/Alternative Transportation Focus Group(s): *(ETRIP measure)* Meetings conducted at least semiannually with a sample of Eligible

Employees to solicit input on commute behavior, incentives to rideshare, and any constraints to alternative commute modes.

3.27 Employer Rideshare/Alternative Transportation Meetings: *(ETRIP measure)* Semiannual meetings available to all Eligible Employees to help those employees identify those who live in similar areas to foster rideshare coordination.

3.28 Employer Trip Reduction Implementation Plan (ETRIP): A group of measures implemented by an employer, designed to provide transportation information, assistance, and/or incentives to employees. The purpose of such measures is to reduce mobile source emissions by reducing the number of vehicle miles traveled to the worksite.

3.29 Employment Agency Personnel: A person employed by an employment service or agency who reports to a worksite other than the employment agency's worksite, under a contractual arrangement with a temporary employer.

3.30 External Employee Ride Matching Services: *(ETRIP measure)* The employer promotes the use of a third-party rideshare program to help Eligible Employees identify appropriate opportunities for ridesharing. Employers must promote these services at least annually.

3.31 Excluded Employee: Emergency health and safety employees; employment agency personnel; farm workers; field personnel; field construction workers; home garage employees; on-call employees; part-time employees; seasonal employees; volunteers; and employees who do not report to work during the peak period.

3.32 External Guaranteed Ride Home Service: *(ETRIP measure)* The employer utilizes a third-party service to provide Eligible Employees with a return trip to the point of commute origin, when a need for the return trip arises and the employee participated in ridesharing or alternative transportation that day. This need, as defined by the employer, may be a personal emergency, an unplanned situation or business-related activities (such as overtime). The employer needs to indicate if this service would be provided by, rental car, taxi, or by a Transportation Management Association or Organization (TMA/TMO).

3.33 Extra time Off: *(ETRIP measure)* The employer provides Eligible Employees additional time off for participation in the trip reduction program. This can include, but is not limited to, allowing Eligible Employees to accrue time off for every time they use alternative transportation or ridesharing.

3.34 Farm Worker: Any person employed in the growing of crops, or the raising of fowl or animals.

3.35 Field Construction Worker: Any employee who reports directly to work at a temporary field construction site.

3.36 Field Personnel: Employees who spend 20 percent or less of their work time per week at the worksite and either do not report to the worksite for pick-up of an employer-provided vehicle or do not return to the worksite at the end of the work day.

3.37 Fitness Area and/or Classes: *(ETRIP measure)* Employer-provided area to exercise during breaks or lunches. Examples may include, but are not limited to a fitness area with exercise equipment available for employee use or a room designated for an exercise video or fitness instruction during lunch at least once per week. External fitness area or classes within ¼ mile of the worksite also qualifies.

3.38 Flex Time Schedule: *(ETRIP measure)* Eligible Employees are permitted to adjust their work hours in order to accommodate alternative commute schedules or arrangements.

3.39 Health Facilities: *(ETRIP measure)* Services that provide first aid to Eligible Employees including, but not limited to, first aid, onsite nurse, etc. External health facilities within ¼ mile of the worksite also qualifies.

3.40 Healthy Air Living Partner: *(ETRIP measure)* An employer who registers with the San Joaquin Valley Air Pollution Control District as a Healthy Air Living Partner and remains a partner in good standing. See www.healthyairliving.com for more information.

3.41 Home Garage Employee: An employee who is assigned an employer-owned vehicle for commutes to and from the worksite.

3.42 Independent Contractor: Any individual who enters into a direct written contract or agreement with an employer to perform certain services and is not on the employer's payroll.

3.43 Internal Guaranteed Ride Home Service: *(ETRIP measure)* The employer directly provides Eligible Employees with a return trip to the point of commute origin, when a need for the return trip arises and the employee participated in ridesharing or alternative transportation that day. This need, as defined by the employer, may be a personal emergency, an unplanned situation or business-related activities (such as overtime). This service may be provided by employer vehicle, rental car, taxi, or another employee.

3.44 Internal Ride Matching: *(ETRIP measure)* The employer provides rideshare matching service, zip code list or assistance in finding commute alternatives for all interested Eligible Employees. Information must be updated semiannually.

3.45 Lunch Delivery: *(ETRIP measure)* Employer-organized lunch delivery at least twice per month available to all Eligible Employees.

3.46 Monetary Incentive: *(ETRIP measure)* The employer, or other funding sources, provides Eligible Employees with cash subsidies, at least on a quarterly basis, for participation in the trip reduction program. This can include, but is not limited to, providing a monetary incentive to Eligible Employees who use alternative transportation a predetermined, minimum number of times per month or pay period.

3.47 Onsite Bicycle Repair: *(ETRIP measure)* Services that would allow a bicycle repair person to repair and/or tune up employee bicycles by appointment when Eligible Employees sign up and agree to pay for said services.

3.48 Onsite Child Care: *(ETRIP measure)* Daycare service provided to Eligible Employees. External child care within ¼ mile of the worksite also qualifies.

3.49 Onsite Food Service: *(ETRIP measure)* Employer provides an onsite area where Eligible Employees can consistently purchase meals, such as a cafeteria or lunch truck service. External food service within ¼ mile of the worksite also qualifies.

3.50 Onsite Break Room and Kitchenette: *(ETRIP measure)* Eating area for employees at the worksite that includes at least a sink and a microwave or conventional stove.

3.51 Onsite Transit Information Center: *(ETRIP measure)* Employer-provided transit information center for general transit information and/or the onsite sale of public transit passes, tickets or tokens to that worksite's Eligible Employees. Information must be verified and updated, as necessary, at least quarterly.

3.52 On-call Employee: An employee who is required to be on-call for at least 50% of their work time per year and the time on-call is subject to the following conditions:

3.52.1 The employee receives monetary compensation for the on-call or standby time; or

3.52.2 Geographic restrictions are placed on employee's movements, and
The extent by which the employee can engage in personal activities during on-call or standby periods is restricted by policy, and
The employee can not trade his or her on-call responsibilities with another employee without prior approval from the employer.

3.53 Part-Time Employee: Any employee who reports to a worksite on a part-time basis for fewer than 32 hours per week.

3.54 Peak Period: The time from 6:00 a.m. through 10:00 a.m. on Monday through Friday, inclusive.

3.55 Personalized Commute Assistance: *(ETRIP measure)* The employer provides personalized assistance such as transit itineraries, carpool matching and personal follow-up to Eligible Employees at least annually. Examples of ways an employer can provide this service to Eligible Employees are:

3.55.1 Organize carpool/vanpool formation meeting(s).
3.55.2 Assist in identifying bicycle and pedestrian routes.
3.55.3 Assist in identifying park and ride lots.
3.55.4 Assist in providing personalized transit routes and schedule information.
3.55.5 Provide personalized follow-up assistance to maintain participation in the commute program.

3.56 Points Program: *(ETRIP measure)* Program where Eligible Employees earn points for each day of participation in the trip reduction program. As defined by the employer, points are redeemed for rewards such as, but not limited to: time off, gift certificates, cash or merchandise.

3.57 Postal Service: *(ETRIP measure)* Stamps for sale onsite and onsite mail pick up for Eligible Employees' personal mail. Post office within ¼ mile of worksite also qualifies.

3.58 Preferential Parking: *(ETRIP measure)* The employer provides preferential parking spaces for use by Eligible Employees when they participate in ridesharing. These spaces must be clearly posted or marked in a manner that identifies them for carpool or vanpool use only. Of all parking spaces available for Eligible Employees (not including spaces reserved for management, visitors, or employer fleet), at least five (5) percent should be permanently designated as carpool/vanpool spaces.

3.59 Prize Drawing: *(ETRIP measure)* Eligible Employees are provided with a chance to win prizes, at least quarterly, for participation in the trip reduction program.

3.60 Production Worker: An employee whose wage and working conditions at a facility are regulated under Industrial Welfare Commission Wage Orders 1-2001 (Manufacturing Industry), 3-2001 (Canning, Freezing, and Preserving Industry), or 8-2001 (Industries Handling Products After Harvest) excluding those whose

job responsibilities are professional, administrative, legal, clerical, sales, or accounting.

3.61 Ride Match Bulletin Board: *(ETRIP measure)* An employer-provided bulletin board available to all Eligible Employees to voluntarily find rideshare partners. May including a map of the surrounding area and push pins.

3.62 Rideshare and Alternative Transportation Bulletin Boards: *(ETRIP measure)* A communication tool that displays materials that publicizes incentives and encourages participation in a rideshare program. The bulletin board should be in a location that would be most likely viewed by the majority of the Eligible Employees. It may be necessary to have more than one bulletin board. The board should be verified and updated, as necessary, at least quarterly.

3.63 Rideshare Agency Registration: *(ETRIP measure)* Provide worksite information to a regional rideshare agency and maintain or update information as appropriate and requested by the regional agency.

3.64 Rideshare Flyer: *(ETRIP measure)* A flyer that provides updates to Eligible Employees on alternative commute modes and incentives offered by the employer to encourage participation in a rideshare program. The flyer would be one page and may include graphics and short summaries to highlight program basics and updates. Must be distributed at least quarterly to all Eligible Employees.

3.65 Rideshare Orientation for New Employees: *(ETRIP measure)* Explanation of alternative transportation modes and if applicable, employer incentives to promote and encourage participation in a rideshare program during the employer's regular orientations for new, Eligible Employees.

3.66 Seasonal Employee: Any employee who is employed for less than 16 consecutive weeks in any fiscal year.

3.67 Shuttles: *(ETRIP measure)* Employers provide a shuttle for daily work commutes between employer worksites or between transportation stations and the worksite.

3.68 SOV: Single-Occupancy Vehicle, a vehicle occupied by one person.

3.69 Staggered Work Schedule: *(ETRIP measure)* The employer selects different start and stop times for departments or individuals within the company to promote ridesharing and accommodate public transit.

3.70 Startup Incentive: *(ETRIP measure)* Designed to reward Eligible Employees who previously commuted via single occupancy vehicle by offering a one-time

or short-term incentive when they begin using ridesharing or alternative transportation on a regular basis.

3.71 Telecommuting Program: *(ETRIP measure)* A system of working at home, offsite, or at a telecommuting center for a full workday. Telecommuting should eliminate the trip to work or reduce the travel distance to the worksite by more than 80 percent. The employer should make telecommuting available to at least 10 percent of its Eligible Employees excluding production workers, and employees who spend 20 percent or less of their work time per week at the worksite. In making telecommuting available to at least 10 percent of applicable employees, the employer can claim ETRIP points for this measure even if the possible participants do not take advantage of the program. Each participant who telecommutes should be allowed to telecommute at least one day per week.

3.72 Tier One Worksite: A worksite with one hundred (100) to two hundred and forty nine (249) Eligible Employees, for at least 16 consecutive weeks during the previous fiscal year.

3.73 Tier Two Worksite: A worksite with two hundred and fifty (250) or more Eligible Employees, for at least 16 consecutive weeks during the previous fiscal year.

3.74 Transit Subsidy: *(ETRIP measure)* Employers pay for all of the cost of commuting by local transit, commuter rail or train for Eligible Employees that use these services. The employer must provide information on the ETRIP regarding the monetary value of the transit subsidy and the frequency of distribution to Eligible Employees.

3.75 Vanpool Subsidy: *(ETRIP measure)* Employers pay for all or part of the cost of commuting by vanpool for Eligible Employees that use these services. The employer must provide information on the ETRIP regarding the monetary value of the vanpool subsidy and the frequency of distribution to Eligible Employees.

3.76 Vehicle Miles Traveled (VMT): The measurement of the total miles traveled by all vehicles in a specified area during a specified time.

3.77 Volunteer: Any individual at a worksite who, of their own free will, provides goods or services without receiving any wages, salary, or other form of financial compensation from the employer for services provided.

3.78 Worksite: A location, structure, building, portion of a building, or grouping of buildings in close proximity in and around which employees work for the same employer. Close proximity means that the individual buildings making up the group of buildings are no more than one mile from a central work location with the largest number of employees reporting, are served by a common circulation or

access system, and are not separated by an impassable barrier to pedestrian travel which may include a freeway, flood control channel, railroad, etc.

4.0 Exemption

An employer with fewer than 100 Eligible Employees at each worksite in the San Joaquin Valley Air Basin is exempt from all provisions of this rule.

5.0 Trip Reduction Requirements

5.1 Employers shall implement an Employer Trip Reduction Implementation Plan (ETRIP) for each worksite with 100 or more Eligible Employees. Employers shall implement an ETRIP to meet the applicable point targets specified in Table 1. Employers subject to California Labor Code Sections 1682 through 1684 or with Eligible Employees (not excluded under Section 3.31) protected by the Migrant and Seasonal Agricultural Worker Protection Act will be required to comply with Phase 1 and Phase 2 point targets only.

5.2 An ETRIP shall include measures from each of the strategies, given in Table 2, to reach the specified point total for each strategy by the implementation deadlines specified in Table 1. Note that ETRIP strategies are initially phased in over a period of three years. The measures chosen to meet the point values specified in Table 1 shall be listed in the ETRIP as described in Section 6.3.

Table 1: ETRIP Point Targets

ETRIP	Tier One Worksite	Tier Two Worksite	Initial Submittal Deadline	Starting Implementation
Total Points Goal	**44**	**66**	**September 1, 2013**	**January 1, 2014**
Minimum points per strategy				
Phase 1: Marketing Strategy	6	10	September 1, 2011	January 1, 2012
Phase 1: Program Support Strategy	6	8	September 1, 2011	January 1, 2012
Phase 2: Services and Facilities Strategy	8	10	September 1, 2012	January 1, 2013
Phase 3: Transportation, Alternative Schedule, and Incentives Strategy	14	20	September 1, 2013	January 1, 2014
Additional Points Needed (from any measure or combination of measures, or from points earned by applying ETRIP measures to Excluded Employees or exempt worksites, as described in Section	*10*	*18*	*September 1, 2013*	*January 1, 2014*

5.3)				

Table 2: Trip Reduction Strategies	
Phase 1: Marketing Strategy *Measures that help increase trip reduction program awareness & accessibility.*	**Point Values**
Healthy Air Living Partner	6
Employer rideshare event	5
Employer rideshare and alternative transportation meetings	5
Employer rideshare and alternative transportation focus group(s)	5
Onsite transit information center	3
Rideshare and alternative transportation bulletin boards	3
Attendance at a marketing class/focus group	3
Employer rideshare newsletter	3
"Best Workplaces for Commuters" Recognition	3
Rideshare flyer	1
CEO communication	1
Employer-adopted policy statement supporting employee ridesharing and alternative transportation	1
Rideshare orientation for new employees	1
Register with a local rideshare agency	1
Other measures approved by the District	Varies
Phase 1: Program Support Strategy *Measures that promote trip reduction program implementation*	**Point Values**
Internal Guaranteed Ride Home Service	
For Production Workers	5
For staff who are not Production Workers (i.e., office staff)	5
Internal ride matching	5
Personalized commute assistance	5
Ride match bulletin board	3
External employee ride matching services	3
External Guaranteed Ride Home Service	3
Other measures approved by the District	Varies
Phase 2: Services and Facilities Strategy *Measures that increase the convenience of program participation.*	**Point Values**
Onsite food service, or within ¼ mile of worksite	7
Onsite child care, or within ¼ mile of worksite	7
Showers and/or Lockers onsite	7
Onsite break room and kitchenette	5

Electric vehicle recharging	5	
Onsite bicycle repair	2	
Onsite ATM	2	
Onsite vending machines	2	
Bicycle racks	2	
Health facilities, or within ¼ mile of worksite	2	
Employer-provided bicycles	2	
Fitness area and/or classes, or within ¼ mile of worksite	2	
Lunch delivery	1	
Check cashing	1	
Direct deposit	1	
Break and/or lunch activities	1	
Dry cleaning	1	
Postal service, or post office within ¼ mile of worksite	1	
Onsite picnic tables	1	
Maps to local conveniences	1	
Other measures approved by the District	Varies	
Phase 3: Transportation, Alternative Schedules, and Incentives Strategy *Measures that provide options to decrease VMT or encourage trip reduction program participation through monetary based incentives.*	**Point Values**	
Compressed work week schedule (can receive credit for one of the following categories, and for only Column A or Column B)	A	B
At least 75% employee participation rate*	15	8
50% - 74% employee participation rate*	12	6
25% - 49% employee participation rate*	9	4
10% - 24% employee participation rate*	6	2
* For a percentage based on all Eligible Employees, use Column A points. For a percentage based on all Eligible Employees except Production Workers, use Column B points.		
Telecommuting program	9	
Comprehensive Vanpool program	8	
Comprehensive Carpool program	8	
Comprehensive Bicycle program	7	
Shuttles	5	
Flex time schedules		
For Production Workers	3	
For staff who are not Production Workers (i.e., office staff)	3	
Staggered work schedules	3	

Monetary incentive	12
Extra time off	7
Vanpool subsidy	5
Transit subsidy	5
Bicycle subsidy	5
Startup incentive	3
Discount Transit Passes	3
Discounted or free meals	3
Preferential parking	1
Points program	1
Prize drawing	1
Other measures approved by the District	Varies

5.3 Points for ETRIP measures applied to Excluded Employees or exempt worksites

5.3.1 An employer can earn prorated ETRIP points for a worksite by applying ETRIP measures to Excluded Employees or exempt worksites. The employer will complete an Extra Points analysis to determine the total points for measures available to these employees.

5.3.2 Extra points are prorated for each ETRIP measure, up to the assigned point value, as specified in the following equation:

Extra Points = (EE ÷ Tier Threshold) x Points for the ETRIP measure

Where EE = the total employees and for whom an ETRIP measure is applied:

(a) who are Excluded Employees or
(b) who work at exempt worksites

Tier Threshold = 100 for Tier 1 Worksites and 250 for Tier 2 Worksites

If (EE ÷ Tier Threshold) is greater than 1.0, substitute 1.0 for (EE ÷ Tier Threshold)

5.3.3 The Extra Points can be applied to a worksite's ETRIP in the "Additional Points Needed" category only (see Section 5.1).

6.0 Administrative Requirements

6.1 Employer Registration

No later than July 1, 2010, or within 180 days after becoming subject to the trip reduction requirements of this rule, whichever is later, employers subject to the trip

reduction requirements of this rule shall submit a complete Employer Registration form to the APCO.

6.1.1 As part of the complete Employer Registration form, employers shall provide the following information:

6.1.1.1 Employer's business name and mailing address.

6.1.1.2 Separate identification of each worksite, including location address.

6.1.1.3 The employer's designated Employee Transportation Coordinator name(s) and telephone number(s) for each worksite.

6.1.1.4 The total number of employees reporting or assigned to each worksite, the total number of Eligible Employees, and the total number of Excluded Employees.

6.1.1.5 The trip reduction measures from Table 2 that are already in place.

6.2 Employee Notification

Employers shall facilitate the participation of employees and employee organizations in the development of Employer Trip Reduction Programs by providing information to its employees explaining the requirements and applicability of this rule to the employer and its worksite(s) prior to or at the time of registration.

6.3 Employer Trip Reduction Implementation Plan (ETRIP)

Employers shall prepare and submit an ETRIP for each worksite to the APCO, according to the schedule in Table 1. Each ETRIP shall be implemented according to the schedule in Table 1 or 30 days after APCO approval, whichever is later. The ETRIP shall be updated as necessary annually thereafter as included in the Annual Report.

6.3.1 The ETRIP shall contain a checklist of the measures chosen from each trip reduction strategy and the point total for each as listed in Section 5.0, according to Table 1 and Table 2.

6.3.2 An employer may submit a single ETRIP that covers multiple worksites when those worksites are using the same ETRIP measures. If worksites are

using differing ETRIP measures, then each worksite should have its own ETRIP.

6.3.3 The plan shall be signed by the highest ranking responsible official of the employer at the worksite or each worksite when a consolidated plan is submitted that covers multiple worksites. The official shall certify that the information provided is correct and that the commitments for the selected measures will be fulfilled according to the implementation schedule in the plan.

6.3.4 Employees shall be notified, in writing, of the content, implementation schedule, and availability of the ETRIP at least ten (10) calendar days prior to the submittal of the ETRIP to the APCO.

6.3.5 Employers shall keep records of steps taken to implement measures chosen to be included in the ETRIP on file for at least five years and shall make the records available to the APCO and United States Environmental Protection Agency (EPA), upon request.

6.3.6 Employers may modify ETRIP as necessary throughout the year and submit those revisions to the APCO within 30 days after implementation.

6.3.7 Failure to implement the measures stated in an APCO-approved ETRIP or failure to comply with the administrative requirements constitutes a violation of this rule.

6.3.8 The APCO shall act on ETRIPs within 45 days of submittal.

6.3.9 An employer shall revise and resubmit to the APCO any disapproved plan within 90 days of the disapproval. Disapproval of a resubmitted plan constitutes a final disapproval. Failure to submit a revised plan or final disapproval of the revised plan is a violation of this rule.

6.3.10 An employer may appeal any APCO disapproval of its ETRIP pursuant to the procedures listed in Regulation V (Procedures Before the Hearing Board).

6.3.11 An employer shall revise and resubmit its ETRIP within 90 days of a final determination that an element of an approved ETRIP violates any provision of law issued by an agency or court with jurisdiction to make such a determination.

6.4 Commute Verification

6.4.1 For the calendar year beginning in January 1, 2014, and at least annually thereafter, employers shall collect information on the modes of transportation used for each Eligible Employee's commutes both to and from work for every day of the Commute Verification Period, as defined in Section 3.0, using either the Mandatory Commute Verification Method or a Representative Survey Method as described below:

6.4.1.1 Mandatory Commute Verification Method: The employer shall distribute Mandatory Commute Verification Forms to all Eligible Employees and require their completion and return by each Eligible Employee. The employer may utilize the example shown in Figure 1, other equivalent forms or electronic methods provided or approved by the APCO.

6.4.1.2 Representative Survey Method: The employer may propose an alternative data collection approach that will collect data from a representative sample of Eligible Employees.

6.4.1.2.1 The employer shall submit its sampling methodology to the District 120 days prior to the start of the calendar year in which the employer intends to use the method.

6.4.1.2.2 The APCO shall notify employers of its approval or disapproval of this method within 60 days of receipt.

Figure 1: Mandatory Commute Verification Form

Commute Verification Form Number: _____ **Date:** _____

Day	Monday		Tuesday		Wednesday		Thursday		Friday	
Worked?	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐
	Arrived to work by	Left work by	Arrived to work by	Left work by	Arrived to work by	Left work by	Arrived to work by	Left work by	Arrived to work by	Left work by
Single occupant vehicle, gas motorcycle, etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Carpool – 2 people	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Carpool – 3+ people	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Vanpool (at least 6 people)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Public transit, bicycle,	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

pedestrian, electric vehicle, telecommute, compressed schedule non-work day										

6.4.2 Employers shall keep commute verification records on file for at least five years and shall make the records available to the APCO and United States Environmental Protection Agency (EPA), upon request.

6.5 Annual Report

No later than March 31, 2015, and by March 31 annually thereafter, the employer shall submit a report to the APCO containing the following information:

6.5.1 The results of the Commute Verification for the previous calendar year, including the number of forms distributed, the number of forms completed and returned, the total number of trips to and from work, and the total number of each commute mode for the Eligible Employees during the Commute Verification period.

6.5.2 The measures implemented as outlined in the ETRIP and, if necessary, any updates to the ETRIP.

6.6 Changes in the Workforce

6.6.1 Employers who meet the applicability level in Section 2.1 after the initial registration deadline of July 1, 2010:

6.6.1.1 Shall register within 180 days to provide the information specified in Section 6.1 and shall notify employees per Section 6.2.

6.6.1.2 Shall conduct Commute Verification in accordance with Section 6.4 starting with the calendar year beginning in January in the first full calendar year after registration with the APCO.

6.6.1.3 Shall submit an ETRIP in accordance with Section 6.3 and the schedule in Table 1 beginning the first full calendar year after registration with the APCO and updated as a part of the Annual Report every calendar year thereafter.

6.6.1.4 Shall submit Annual Reports per Section 6.5 for the first full calendar year following their Employer Registration submission.

6.6.2 Employers who fall below the 100 Eligible Employee level after registering with the District for this rule shall notify the District in writing of their change in status within 90 days of their change in status.

7.0 District Support

The District shall supply Rule 9410 compliance support materials, services, and tools according to Table 4 below. As appropriate, these will be available via the District website and by contacting District offices.

Table 4 Rule Compliance Support Materials to be Provided by the District

District-provided Resource	Corresponding Employer Requirement	Deadline
District webpage and listserv dedicated to Rule 9410	NA	February 1, 2010
Employer Registration Template and online Registration option	Section 6.1	May 1, 2010
Guidance and resources: Marketing and Program Support Strategies	Marketing and Program Support Strategies, Section 5.2	March 1, 2011
Training sessions, organized and facilitated by the District, Marketing and Program Support Strategies	Marketing and Program Support Strategies, Section 5.2	April 1 – December 1, 2011, with public noticing and outreach at least 30 days before the first training session
Electronic ETRIP submittal system	Section 6.3	July 1, 2011
Guidance and resources: Services and Facilities	Services and Facilities Strategy, Section 5.2	March 1, 2012
Training sessions, organized and facilitated by the District, Services and Facilities Strategy	Services and Facilities Strategy, Section 5.2	April 1 – December 1, 2012, with public noticing and outreach at least 30 days before the first training session
Guidance and resources: Transportation and Alternative Schedules Strategy and Incentives Strategy	Transportation, Alternative Schedules and Incentives Strategy, Section 5.2	March 1, 2013
Training sessions, organized and facilitated by the District, Transportation and Alternative Schedules Strategy and Incentives Strategy	Transportation, Alternative Schedules and Incentives Strategy, Section 5.2	First training to be held by April 1, 2013, with public noticing and outreach at least 30 days before the first training session
Commute Verification Methods templates and online reporting options	Sections 6.4 and 6.5	September 1, 2013

Annual Report guidance, resources, and online reporting system	Section 6.5	September 1, 2014

8.0 Compliance Schedule

Employers shall comply with the requirements of this rule according to the deadlines indicated for the above sections and summarized in Table 5 below.

Table 5: Compliance Deadline Summary Table

Requirement	Worksites subject to Trip Reduction Requirements in 2010	Worksites subject to Trip Reduction Requirements after July 1, 2010
Employer Registration	By July 1, 2010 (Section 6.1)	Within 180 days of becoming subject to the Trip Reduction Requirements. (Section 6.6.1.1)
Employer Trip Reduction Plan (ETRIP)	Submit by September 1, 2011, September 2012, and September 2013; and implement by January 1, 2012, January 1, 2013, and January 1, 2014, respectively. (See Table 1) Submit revisions as necessary in the Annual Report starting March 31, 2015 and every calendar year thereafter (Section 6.3)	Submit every calendar year by January 1 starting in the first full calendar year after registration with the APCO and implement within 120 days. Include revisions in the Annual Report thereafter. (Section 6.6.1.3)
Commute Verification	Once per year, every calendar year starting January 1, 2014 (Section 6.4)	Once per year every calendar year starting with the calendar year beginning in January in the first full calendar year after registration with the APCO. (Section 6.6.1.2)
Annual Report of previous year's Commute Verification results and ETRIP	Submit every March 31 starting in 2015 (Section 6.5)	Submit every March 31 after the first full calendar year of Commute Verification (Section 6.6.1.4)

RULE 9510 INDIRECT SOURCE REVIEW (ISR) (Adopted December 15, 2005; Amended December 21, 2017, but not in effect until March 21, 2018)

1.0 Purpose

The purposes of this rule are to:

1.1 Fulfill the District's emission reduction commitments in the PM10 and Ozone Attainment Plans.

1.2 Achieve emission reductions from the construction and use of development projects through design features and on-site measures.

1.3 Provide a mechanism for reducing emissions from the construction of and use of development projects through off-site measures.

2.0 Applicability

2.1 Effective on and after March 1, 2006, this rule shall apply to any applicant that seeks to gain a final discretionary approval for a development project, or any portion thereof, which upon full build-out will include any one of the following:

2.1.1 50 residential units;

2.1.2 2,000 square feet of commercial space;

2.1.3 25,000 square feet of light industrial space;

2.1.4 100,000 square feet of heavy industrial space;

2.1.5 20,000 square feet of medical office space;

2.1.6 39,000 square feet of general office space;

2.1.7 9,000 square feet of educational space;

2.1.8 10,000 square feet of government space;

2.1.9 20,000 square feet of recreational space; or

2.1.10 9,000 square feet of space not identified above.

2.2 Except as specified in Section 2.3, this rule shall apply to any applicant that seeks to gain approval from a public agency for a large development project, which upon full build-out will include any one of the following:

2.2.1 250 residential units;

2.2.2 10,000 square feet of commercial space;

2.2.3 125,000 square feet of light industrial space;

2.2.4 500,000 square feet of heavy industrial space;

2.2.5 100,000 square feet of medical office space;

2.2.6 195,000 square feet of general office space;

2.2.7 45,000 square feet of educational space;

2.2.8 50,000 square feet of government space;

2.2.9 100,000 square feet of recreational space; or

2.2.10 45,000 square feet of space not identified above.

2.3 Section 2.2 shall not apply if any of the following are true:

2.3.1 Final discretionary approval for the large development project has been received prior to March 1, 2006; or

2.3.2 The large development project requires or required a discretionary approval and is subject to the rule under Section 2.1; or

2.3.3 Prior to March 21, 2018, the applicant received project-level building permits, a conditional use permit, or similar approvals for the particular large development project; or

2.3.4 The large development project qualifies as a Grandfathered Large Development Project.

2.4 Effective on and after March 1, 2006, this rule shall apply to any transportation or transit development project where construction exhaust emissions equal or exceed two (2.0) tons of NOx or two (2.0) tons of PM10.

2.5 Projects on Contiguous or Adjacent Property

2.5.1 Residential projects with contiguous or adjacent property under common ownership of a single entity in whole or in part, that is designated and zoned for the same development density and land use, regardless of the number of tract maps, and has the capability to accommodate more than fifty (50) residential units when determining applicability of the rule under Section 2.1, or more than 250 residential units when determining applicability of the rule under Section 2.2, are subject to this rule.

2.5.2 Nonresidential projects with contiguous or adjacent property under common ownership of a single entity in whole or in part, that is designated and zoned for the same development density and land use, and has the capability to accommodate development projects emitting more than two (2.0) tons per year of operational NOx or PM10 when determining applicability of the rule under Section 2.1, or more than ten (10.0) tons per year of operational NOx or PM10 when determining applicability of the rule under Section 2.2, are subject to this rule. Single parcels where the individual building pads are to be developed in phases must base emissions on the potential development of all pads when determining the applicability of this rule.

3.0 Definitions

3.1 APCO: as defined in Rule 1020 (Definitions).

3.2 APCO-Approved Model: any computer model that estimates construction, area source and/or operational emissions of NOx and PM10 from potential land uses, using the most recent approved version of relevant ARB emissions models and emission factors, and has been approved by the APCO and EPA.

3.3 Air Impact Assessment (AIA): the calculation of emissions generated by the project and the emission reductions required by the provisions set forth in this rule. The AIA must be based solely on the information provided to the APCO in the AIA application, and must include all information listed in Section 5.6, et seq.

3.4 Air Impact Assessment (AIA) Application: the aggregate of documentation supporting the development of an AIA. This includes, but is not limited to, the information listed in Section 5.0, et seq.

3.5 Air Resources Board (ARB or CARB): as defined in Rule 1020 (Definitions).

3.6 Applicant: any person or entity that undertakes a development project.

3.7 Area Source: any multiple non-mobile emissions sources such as water heaters, gas furnaces, fireplaces, wood stoves, landscape equipment, architectural coatings, consumer product, etc., that are individually small but can be significant when combined in large numbers.

3.8 Baseline Emissions: the unmitigated NOx or PM10 emissions as calculated by the APCO-approved model.

3.9 Construction: any excavation, grading, demolition, vehicle travel on paved or unpaved surfaces, or vehicle exhaust that occurs for the sole purpose of building a development project.

3.10 Construction Baseline: the sum of baseline NOx or exhaust PM10 for the duration

of construction activities for a project, or any phase thereof, in total tons.

3.11 Construction Emissions: any NOx or exhaust PM10 emissions resulting from the use of internal combustion engines related to construction activity, which is under the control of the applicant through ownership, rental, lease agreements, or contract.

3.12 Contiguous or Adjacent Property: a property consisting of two or more parcels of land with a common point or boundary, or separated solely by a public roadway or other public right-of-way.

3.13 Development Project: any project, or portion thereof, that is subject to an approval by a public agency, and will ultimately result in:

- the construction of a new building, facility, or structure; or
- the reconstruction of a building, facility, or structure for the purpose of increasing capacity or activity.

3.14 Discretionary Approval: a decision by a public agency that requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular development project, as distinguished from situations where the public agency merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations.

3.15 District: the San Joaquin Valley Unified Air Pollution Control District as defined in Rule 1020 (Definitions).

3.16 Emission Reduction Measure: an activity taken or conditions incorporated in a project to avoid, minimize, reduce, eliminate, or compensate emissions estimated to occur from new development projects.

3.16.1 On-Site Emission Reduction Measure: any feature activity, device, or control technology of a project, which is incorporated into the design of that project or through other means, which will avoid, minimize, reduce or eliminate the project's emissions. All on-site emission reductions achieved beyond District or state requirements shall count towards the mitigated baseline. City, County and other public agency requirements may also be credited towards emission reductions.

3.16.2 Off-Site Emission Reduction Measure: any feature, activity, or emission reduction project used, undertaken, or funded to compensate for a project's emission that is not part of the development project.

3.17 Grandfathered Large Development Project: a large development project that meets the following to the satisfaction of the APCO:

3.17.1 The large development project must be identified by the applicant and be a particular and defined large development project meeting at least one of the land use categories in Section 2.2; and

3.17.2 The applicant provides written confirmation from the public agency responsible for project-level building permits, conditional use permits, or similar approvals, that the large development project identified under Section 3.17.1 has received a land-use entitlement and requires no discretionary approval prior to starting construction; and

3.17.3 Prior to March 21, 2018, and in reliance upon the land use entitlement, the applicant has entered into binding agreements or contractual obligations for the large development project identified under Section 3.17.1, which cannot be canceled or modified without substantial loss to the applicant, for designing, developing, or constructing the large development project.

3.18 Indirect Source: any facility, building, structure, or installation, or combination thereof, which attracts or generates mobile source activity that results in emissions of any pollutant, or precursor thereof, for which there is a state ambient standard, as specified in Section 1.1.

3.19 Land Use: any facility, building, structure, installation, activity, or combination thereof, and the purpose, for which it is arranged, designed, intended, constructed, erected, moved, altered or enlarged on, or for which it is or may be occupied or maintained. Land use can be identified in the following categories:

3.19.1 Commercial: any facility, building, structure, installation, activity or combination thereof, that offers goods and services for sale. This can include but is not limited to wholesale and retail stores, food establishments, hotels or motels, and movie theatres.

3.19.2 Educational: any facility, building, structure, installation, activity or combination thereof, whose purpose is to develop knowledge, skill, and character. This can include but is not limited to: schools, day care centers, libraries, and churches.

3.19.3 General Office: any facility, building, structure, installation, activity or combination thereof, where the affairs of a non-medical business are conducted.

3.19.4 Governmental: any facility, building, structure, installation, activity or combination thereof, where the affairs of an entity that exercises authority over a country, or any subdivision thereof, are carried on.

3.19.5 Industrial: any facility, building, structure, installation, activity or combination thereof that creates, collects, extracts, packages, modifies, and/or distributes goods.

3.19.5.1 Light Industrial: usually employs fewer than 500 persons, with an emphasis on activities other than manufacturing and typically

have minimal office space. Typical light industrial activities include: print plants, material testing labs, and assemblers of data processing equipment. Light Industrial tends to be free-standing.

3.19.5.2 Heavy Industrial: also categorized as manufacturing facilities. Heavy Industrial usually has a high number of employees per industrial plant.

3.19.6 Medical Office: any facility, building, structure, installation, activity or combination thereof, where the affairs of a business related to the science and art of diagnosing, treating, and preventing diseases are carried on.

3.19.7 Recreational: any facility, building, structure, installation, activity or combination thereof, where individuals may relax or refresh the body or the mind. This can include but is not limited to: parks, fitness clubs, and golf courses.

3.19.8 Residential: any facility, building, structure, installation, activity or combination thereof, which provides a living space for an individual or group of individuals.

3.20 Mitigation: synonym of on-site emission reduction measure. For the purposes of this rule, mitigation is all on-site emission reductions achieved beyond District or state requirements. City, County and other public agency requirements may be counted as mitigation, and credited towards emission reductions for the mitigated baseline.

3.21 Mitigated Baseline: the NOx or PM10 emission generated by a project after on-site emission reduction measures have been applied.

3.22 Mobile Emissions: the NOx or PM10 emissions generated by motorized vehicles.

3.23 Monitoring and Reporting Schedule (MRS): a form listing on-site emission reduction measures committed to by the applicant that are not enforced by another public agency along with the implementation schedule and enforcement mechanism for each measure. The Construction Equipment Schedule constitutes a MRS for the construction phase of a development project. The format of the MRS shall be provided by the District.

3.24 NOx: any oxides of nitrogen.

3.25 Off-Site Emission Reduction Fee (Off-Site Fee): a fee to be paid by the applicant to the District for any emission reductions required by the rule that are not achieved through on-site emission reduction measures. Off-Site Fees shall only apply to off-site emission reductions required, and shall only be used for funding off-site emission reduction projects.

3.26 Off-Site Emission Reduction Fee Deferral Schedule (FDS): a payment schedule requested by the applicant and approved by the District for Off-Site Emission Reduction Fees that ensures contemporaneous off-site emission reductions for the development project. Fee payment shall be made prior to the issuance of a building permit. The District shall provide the FDS format.

3.27 On-Site Emission Reduction Checklist (On-Site Checklist): the list provided by the District that identifies potential on-site emission reduction measures. Project applicants must identify those measures that will be implemented and those that will not. There is no minimum required to be selected for implementation.

3.28 Operational Baseline: the baseline NOx or PM10 emissions, including area source and mobile emissions, calculated by the APCO-approved model, for the first year of buildout for that project, or any phase thereof, in tons per year.

3.29 Operational Emissions: for the purposes of this rule, the combination of area and mobile emissions associated with an indirect source.

3.30 Phase: a defined portion or stage of a development project.

3.31 PM10 (or PM-10): as defined in Rule 1020 (Definitions).

3.32 Public Agency: any federal, state, local, or special agency that exercises discretionary powers on development activities within the San Joaquin Valley Air Basin.

3.33 San Joaquin Valley Air Basin (SJVAB): as defined in Rule 1020 (Definitions).

3.34 Transit Development Project: any project solely intended to create a passenger transportation service, local, metropolitan or regional in scope that is available to any person who pays a prescribed fare. Examples of transit development projects include: transportation by bus, rail, or other conveyance, either publicly or privately owned, which is provided to the public or specialty service on a regular or continuing basis. Also known as "mass transit," "mass transportation," or "public transportation."

3.35 Transportation Development Project: any project solely intended to create a new paved surface that is used for the transportation of motor vehicles, or any structural support thereof. Examples of transportation development projects include: streets, highways and any related ramps, freeways and any related ramps, and bridges. This does not include development projects where traffic surfaces are a portion of the project, but not the main land-use.

3.36 Vehicle Trip: a trip by a single vehicle regardless of the number of persons in the vehicle, which is one way starting at one point and ending at another. A 'round trip' is counted as two separate trips.

4.0 Exemptions

4.1 Transportation development projects shall be exempt from the requirements in Sections 6.2 and 7.1.2.

4.2 Transit development projects shall be exempt from the requirements in Sections 6.2 and 7.1.2.

4.3 Development projects that have a mitigated baseline below two (2.0) tons per year of NOx and two (2.0) tons per year of PM10 shall be exempt from the requirements in Sections 6.0 and 7.0.

4.4 The following shall be exempt from the requirements of this rule:

4.4.1 Reconstruction of any development project that is damaged or destroyed, or is retrofitted solely for seismic safety, and is rebuilt to essentially the same use and intensity.

4.4.2 Transportation development projects that consist solely of:

4.4.2.1 A modification of existing roads subject to District Rule 8061 that is not intended to increase single occupancy vehicle capacity, or,

4.4.2.2 Transportation control measures included in a District air quality attainment plan.

4.4.3 A development project on a facility whose primary functions are subject to Rule 2201 (New and Modified Stationary Source Review Rule) or Rule 2010 (Permits Required), including but not limited to the following industries:

4.4.3.1 Aggregate Mining or Processing;

4.4.3.2 Almond Hulling, Canning Operations, Food Manufacturing, Grain Processing and Storage, Vegetable Oil Manufacturing, and Wineries;

4.4.3.3 Animal Food Manufacturing;

4.4.3.4 Confined Animal Facilities;

4.4.3.5 Coatings and Graphic Arts;

4.4.3.6 Cotton Ginning Facilities;

4.4.3.7 Energy Production Plants;

4.4.3.8 Ethanol Manufacturing;

4.4.3.9 Gas Processing and Production, Oil Exploration, Production, Processing, and Refining;

4.4.3.10 Glass Plants;

4.4.3.11 Solid Waste Landfills;

4.4.3.12 Petroleum Product Transportation and Marketing Facilities.

5.0 Application Requirements

Any applicant subject to this rule shall submit an Air Impact Assessment (AIA) application no later than applying for a final discretionary approval with the public agency. Nothing in this rule shall preclude an applicant from submitting an AIA application prior to filing an application for a final discretionary approval with the public agency. It is preferable for the applicant to submit an AIA application as early as possible in the process for that final discretionary approval.

Any applicant for a large development project subject to this rule under Section 2.2 shall submit an AIA application no later than applying for, or otherwise seeking to gain, approval from a public agency for the project. An applicant for a large development project subject to this rule under Section 2.2 who has applied for, or otherwise sought to gain, approval from a public agency for the project prior to March 21, 2018 shall submit an AIA application prior to April 20, 2018.

The AIA application shall be submitted on a form provided by the District and shall contain the following information:

5.1 Applicant name and address;

5.2 Detailed project description including, but not limited to:

5.2.1 Site Size;

5.2.2 Site Plans;

5.2.3 Proposed Project Schedule;

5.2.4 Associated Project;

5.2.5 If residential, the number and type of dwelling units;

5.2.6 If commercial, the type, square footage and loading facilities;

5.2.7 If industrial, the type, estimated employment per shift, and loading facilities;

5.2.8 Amount of off-street parking provided for non-residential projects;

5.3 On-site Emission Reduction Checklist (On-Site Checklist): The District shall provide an On-Site Checklist that includes quantifiable on-site measures that reduce operational NOx and/or PM10 emissions.

5.3.1 The applicant shall identify measures voluntarily selected and how those measures will be enforced. On-Site measures must be fully enforceable through permit conditions, development agreements, or other legally binding instrument entered into by the applicant and the public agency; or, if the measure is not a requirement by another public agency, by a MRS contract with the District. Enforcement mechanisms can include:

5.3.1.1 Applicable local ordinance or section of a regulation that requires the measure, if any,

5.3.1.2 A District approved MRS, as identified in Section 5.4 below.

5.3.2 The applicant shall also include justification for those measures not selected.

5.3.3 All selected on-site measures, regardless of enforcement mechanism, shall count towards on-site emission reductions.

5.4 Monitoring and Reporting Schedule (MRS): The District shall provide a standardized MRS format. The applicant shall include in the AIA application a completed proposed MRS for on-site emission reduction measures selected that are not subject to other public agency enforcement, and the timeline for submittal of the construction equipment schedule. A proposed MRS shall outline how the measures will be implemented and enforced, and will include, at minimum, the following:

5.4.1 A list of on-site emission reduction measures included;

5.4.2 Standards for determining compliance, such as funding, record keeping, reporting, installation, and/or contracting;

5.4.3 A reporting schedule;

5.4.4 A monitoring schedule;

5.4.5 Identification of the responsible entity for implementation;

5.4.6 Provisions for failure to comply;

5.4.7 Applicants proposing on-site emission reduction measures that require ongoing funding, shall provide evidence in the proposed MRS of continued funding, including, but not limited to:

5.4.7.1 Bonds; or

5.4.7.2 Community Service Districts; or

5.4.7.3 Contracts.

5.4.8 The schedule for submitting a construction equipment schedule.

5.5 Off-Site Fee Deferral Schedule (FDS): The District shall provide a standardized Fee Deferral Schedule form. The payment schedule must provide assurance that reductions from off-site emission reduction projects can be obtained reasonably contemporaneous with emissions increases associated with the project and shall, at minimum, include the following:

5.5.1 Identification of the person or entity responsible for payment;

5.5.2 Billing address;

5.5.3 Total required off-site operational emissions for the development project and any phase thereof;

5.5.4 Total required off-site construction emissions for the development project and any phase thereof;

5.5.5 Year of build-out, and any phase thereof;

5.5.6 Any applicable milestones;

5.5.7 Payment schedule not to exceed or go beyond the issuance of a building permit. For development projects with multiple phases, the payment schedule shall connect fee deadlines for off-site emission reductions required by each phase prior to the issuance of building permits for those phases.

5.5.8 The cost of reductions corresponding to the payment schedule;

5.5.9 Applicable project termination and delay clauses; and

5.5.10 Provisions for failure to comply.

5.6 Air Impact Assessment (AIA): An AIA shall be produced for the project from the project specific information identified in the AIA application. An AIA may be produced by or for the applicant. If an AIA is not provided by the applicant, the District shall perform the AIA during the AIA application review period. The AIA shall meet the following requirements:

5.6.1 The analysis of the proposed project shall be conducted according to the information provided in the application;

5.6.2 The analysis shall employ an APCO-approved model or calculator and include detailed documentation and reasons for all changes to the default input values;

5.6.3 If the AIA is conducted by or for the applicant, a hard copy and an electronic copy of all model runs conducted for the project and each phase thereof, shall be submitted;

5.6.4 The applicant shall include any other information and documentation that supports the calculation of emissions and emissions reductions;

5.6.5 The AIA shall quantify construction and operational NOx and PM10 emissions associated with the project. This shall include the estimated construction and operational baseline emissions, and the mitigated emissions for each applicable pollutant for the development project, or each phase thereof;

5.6.6 The AIA shall quantify the Off-Site Fee, if applicable.

6.0 General Mitigation Requirements

6.1 Construction Equipment Emissions

6.1.1 The exhaust emissions for construction equipment greater than fifty (50) horsepower used or associated with the development project shall be reduced by the following amounts from the statewide average as estimated by the ARB:

6.1.1.1 20% of the total NOx emissions, and

6.1.1.2 45% of the total PM10 exhausts emissions.

6.1.2 An applicant may reduce construction emissions on-site by using less-polluting construction equipment, which can be achieved by utilizing add-on controls, cleaner fuels, or newer lower emitting equipment.

6.2 Operational Emissions

6.2.1 NOx Emissions

Applicants shall reduce 33.3%, of the project's operational baseline NOx emissions over a period of ten years as quantified in the approved AIA as specified in Section 5.6.

6.2.2 PM10 Emissions

Applicants shall reduce of 50% of the project's operational baseline PM10 emissions over a period of ten years as quantified in the approved AIA as specified in Section 5.6.

6.3 The requirements listed in Sections 6.1 and 6.2 above can be met through any combination of on-site emission reduction measures or off-site fees.

7.0 Off-site Emission Reduction Fee (Off-Site Fee) Calculations and Fee Schedules

7.1 Off-site Fee Calculations

7.1.1 Construction Activities

7.1.1.1 NOx Emissions

The applicant shall pay to the District a monetary sum necessary to offset the required construction NOx emissions not reduced on-site. The off-site fee shall be calculated as follows:

$$CN\ OF = \sum_{i=1}^{n} \left[NACE_i - (0.8 \times NSEE_i)\right] \times CNR_i$$

Where,

CN OF = Construction NOx Off-Site Fee, in dollars

i = each phase

n = last phase

NACE = Actual Estimated Equipment NOx Emissions, as documented in the APCO approved Air Impact Assessment application, in total tons

NSEE = Statewide Average Equipment NOx Emissions, as calculated by the APCO, in total tons

CNR = Cost of NOx Reductions identified in Section 7.2.1 below, in dollars per ton. The cost of emissions reductions, in dollars per ton, shall be based on the applicable rate at the time the invoice is issued.

7.1.1.2 PM10 Emissions

The applicant shall pay a monetary sum necessary to offset the required construction PM10 exhaust emissions not reduced on-

site. The off-site fee shall be calculated as follows:

$$CPM\ OF = \sum_{i=1}^{n} \left[PMACE_i - (0.55 \times PSEE_i)\right] \times CPR_i$$

Where,

CPM OF = Construction PM10 Off-Site Fee, in dollars

i = each phase

n = last phase

PMACE = Actual Estimated Equipment PM10 Emissions, as documented in the APCO approved AIA application, in total tons

PSEE = Statewide average Equipment PM10 Emissions, as calculated by the APCO, in total tons

CPR = Cost of PM10 Reductions identified in Section 7.2.2 below, in dollars per ton. The cost of emissions reductions, in dollars per ton, shall be based on the applicable rate at the time the invoice is issued.

7.1.2 Operational and Area Source Activities

7.1.2.1 NOx Emissions

The applicant shall pay a monetary sum necessary to offset the excess NOx emissions not reduced on-site. The off-site fee shall be calculated as follows:

$$NOxOF = \sum_{i=1}^{n} \left[\left(\frac{NEB_i \times 7.5}{3}\right) - (NEB_i \times 7.5 \times NAPOR_i)\right] \times CNR_i$$

Where,

NOx OF = Operational NOx Off-Site Fee, in dollars

i = each phase

n = last phase

NEB = Estimated Baseline Emissions, of Operational NOx, as documented in the APCO approved AIA application, in tons per year

NAPOR = NOx Actual Percent of On-Site Reductions, as documented in the APCO approved air impact assessment application, as a fraction of one, calculated as (NEB-NOx

Mitigated Baseline)/NEB

CNR = Cost of NOx Reductions identified in Section 7.2.1 below, in dollars per ton. The cost of emissions reductions, in dollars per ton, shall be based on the applicable rate at the time the invoice is issued.

7.1.2.2 PM10 Emissions

The applicant shall pay a monetary sum necessary to offset the excess PM10 emissions not reduced on-site for a period of ten years. The off-site fee shall be calculated as follows:

$$PM10OF = \sum_{i=1}^{n} [(PMMB - 0.5PEB_i)(10)] \times CPR_i$$

Where,

PM10 OF = Operational PM Off-Site Fee, in dollars

i = each phase

n = last phase

PEB = Estimated Baseline Emissions, of Operational PM10, as documented in the APCO approved AIA application, in tons per year

PMMB = Mitigated Baseline Emissions, as documented in the APCO approved AIA application, in tons per year

CPR = Cost of PM10 Reductions, identified in Section 7.2.2 below, in dollars per ton. The cost of emissions reductions, in dollars per ton, shall be based on the applicable rate at the time the invoice is issued.

7.2 Fee Schedules

7.2.1 The costs of NOx reductions are as follows:

Year	Cost of NOx Reductions ($/ton)
2006	$4,650.00
2007	$7,100.00
2008 and beyond	$9,350.00

7.2.2 The costs of PM10 reductions are as follows:

Year	Cost of PM10 Reductions ($/ton)
2006	$2,907.00
2007	$5,594.00
2008 and beyond	$9,011.00

7.3 The applicant shall pay the Off-Site Fees in full by the invoice due date or prior to generating emissions associated with the project or any phase thereof, whichever occurs first.

7.4 The applicant shall receive credit for any off-site emission reduction measures that have been completed and/or paid for, prior to December 15, 2005, if the following conditions have been met:

7.4.1 The prior off-site emission reduction measures were part of an air quality mitigation agreement with the APCO; or

7.4.2 The applicant demonstrates to the satisfaction of the APCO that the off-site emission reduction measures result in real, enforceable, and surplus reductions in emissions.

7.5 Refund: If a project is terminated or is cancelled, the building permit or use permit expires, is cancelled, or is voided, no construction has taken place, and the use has never occupied the site, the applicant is entitled to a refund of the unexpended Off-Site fees paid less any administrative costs incurred by the APCO. The applicant must provide a written request for the refund, with proof of the project termination, within thirty (30) calendar days of the termination. Proof of project termination can include a confirmation from a local agency of permit cancellation.

7.6 The APCO may adjust the cost of reductions according to the following process:

7.6.1 An Analysis shall be performed that details:

7.6.1.1 The cost effectiveness of projects funded to date;

7.6.1.2 The rule effectiveness of achieving the required emission reductions to date;

7.6.1.3 The availability of off-site emission reduction projects;

7.6.1.4 The cost effectiveness of those projects.

7.6.2 The APCO shall provide a draft revised cost effectiveness based on the analysis.

7.6.3 The process shall include at least one public workshop.

8.0 Administrative Process

8.1 Completeness of the AIA application: The APCO shall determine whether the application is complete and contains the necessary information no later than ten (10) calendar days after receipt of the application, or after such longer time as agreed to by both the applicant and the APCO.

8.1.1 Should the application be deemed incomplete, the APCO shall notify the applicant in writing of the decision and shall specify the additional information required. Resubmittal of any portion of the application begins a new ten (10) day calendar period for the determination of completeness by the APCO.

8.1.2 Completeness of an application or resubmitted application shall be evaluated on the basis of the information requirements set forth in the District Rules and Regulations as they exist on the date on which the application or resubmitted application is received.

8.1.3 The APCO shall notify the applicant in writing that the application is deemed complete.

8.2 Public Agency Review of the proposed project: The APCO shall forward a copy of the AIA application, including the MRS (if applicable) to the relevant public agencies for review. The public agencies may review and comment at any time on the provisions of the MRS. Comments received by the APCO shall be forwarded to the applicant. The proposed MRS may be modified, if necessary, based on the input from the public agency. If any changes result from their comments, the APCO shall make the appropriate changes and provide the applicant a revised Off- Site Fee, if applicable. No section or provision within this rule requires action on the part of the public agency.

8.3 APCO Evaluation of the AIA Application: The AIA application shall be evaluated for content.

8.3.1 If the applicant submits an AIA, the APCO will evaluate the modeling inputs and calculations.

8.3.2 If the applicant does not submit an AIA, the APCO will complete an AIA from the information contained in the AIA application.

8.3.3 The APCO may, during the evaluation of the application, request

clarification, amplification, and any correction as needed, or otherwise supplement the information submitted in the application. Any request for such information shall not count towards the time the APCO has to provide notice of approval or disapproval. The clock shall resume once the APCO has received the requested information.

8.4 AIA Approval: The APCO shall notify the applicant in writing of its decision regarding the AIA application and its contents within thirty (30) calendar days after determination of an application as complete and provide the following in writing to the applicant, the public agency, all interested parties as identified by the developer, and make available to the public.

8.4.1 APCO approval determination of the AIA application;

8.4.2 The required emission reductions;

8.4.3 The amount of on-site emission reduction achieved;

8.4.4 The amount of off-site emission reduction required, if applicable;

8.4.5 The required Off-Site Fee if applicable;

8.4.6 A statement of tentative rule compliance;

8.4.7 A copy of the final MRS, if applicable; and

8.4.8 An approved FDS, if applicable.

8.5 Off-Site Fee: After the APCO approves the AIA application and its contents; the APCO shall provide the applicant with an estimate for the projected off-site fees, if applicable. The applicant shall pay the off-site fee in accordance with Section 7.3.

8.6 Fee Deferral Schedule: In the event that the applicant had not previously submitted FDS in the AIA application, but desires one, the applicant shall ensure that the proposed FDS is submitted to the APCO no later than fifteen (15) calendar days after receipt of the AIA Approval. The District shall have fifteen (15) calendar days to approve the FDS request.

8.7 MRS Compliance: After the APCO approves the AIA application and its contents; the APCO shall enact the MRS contract, if applicable. The applicant is responsible for implementation and/or maintenance of those measures identified within the MRS. Upon completion of Monitoring and Reporting, the District shall provide to the applicant, the public agency, and make available to the public, an MRS Compliance letter.

8.7.1 Operational On-Site Measures: On-site emission reduction measures that are active operational measures, such as providing a service, must be

implemented for 10 years after buildout of the project, if applicable.

8.7.2 Construction Equipment Schedule: The construction equipment schedule shall be submitted to the District if identified in the MRS prior to the start of construction, but not to exceed the issuance of a grading permit, if applicable.

8.8 In the event the applicant significantly changes the AIA application or any portion thereof during the Administrative Process, the APCO shall re-start the evaluation process pursuant to Section 8.3.

9.0 Changes to the Project

9.1 Changes Proposed By The Applicant

9.1.1 The applicant may substitute equivalent or more effective on-site emission reduction measures upon written approval from the APCO.

9.1.2 Changes in the project or to the build-out schedule that increase the emissions associated with the project shall require submission of a new AIA application. A new AIA shall be conducted and the off-site fees shall be recalculated in accordance with the applicable provisions of this rule. The APCO shall notify the applicant of the new off-site fees, the difference of which shall be payable by the due date specified on the billing invoice.

9.1.3 If a project, or portion thereof, changes ownership, the seller shall inform the District of the change in ownership by filing a "Change of Developer" form with the District prior to the buyer generating emissions associated with the project.

9.2 Changes Required By The Public Agency or Any Court Of Law

Project changes that result in an increase in the emissions shall require submission of a new AIA application within 60 days of said changes, or prior to the start of project construction, whichever is less. A new AIA shall be conducted and the off-site fees shall be recalculated in accordance with the applicable provisions of this rule.

10.0 APCO Administration of the Off-Site Fee Funds

10.1 The District shall establish and maintain separate accounts for NOx and for PM10 for funds collected under this rule. Any off-site fees collected by the District shall be deposited into these accounts.

10.2 The District shall utilize monies from the accounts to fund quantifiable and enforceable Off-Site projects that reduce surplus emissions of NOx and PM10 in an expeditious manner.

10.2.1 The District shall set forth funding criteria for each category of off-site projects that may be funded by this rule.

10.2.2 The District shall ensure that the emission reductions calculations for the off-site projects are accurate.

10.2.3 If the off-site project involves the replacement of existing equipment, the District shall inspect the existing equipment.

10.2.4 The District shall enter into a binding contract with the applicant of the off-site project, which will, at minimum, require an annual report from the applicant that includes information necessary to ensure that emissions reductions are actually occurring.

10.2.5 The District shall conduct inspections on the off-site project to verify that the project is installed or implemented and operating for the life of the contract.

10.2.6 The District may substitute NOx reductions for PM10 in a 1.5 to 1 ratio.

10.3 Any interest that accrues in the off-site account(s) shall remain in the account, to be used in accordance with Section 10.2 above.

10.4 The District shall prepare an annual report that will be available to the public regarding the expenditure of those funds, and shall include the following:

10.4.1 Total amount of Off-Site Fees received;

10.4.2 Total monies spent;

10.4.3 Total monies remaining;

10.4.4 Any refunds distributed;

10.4.5 A list of all projects funded;

10.4.6 Total emissions reductions realized; and

10.4.7 The overall cost-effectiveness factor for the projects funded.

RULE 9610 STATE IMPLEMENTATION PLAN CREDIT FOR EMISSION REDUCTIONS GENERATED THROUGH INCENTIVE PROGRAMS (Adopted June 20, 2013)

1.0 Purpose

The purpose of this rule is to provide an administrative mechanism for the District to receive credit towards State Implementation Plan requirements for emission reductions achieved in the San Joaquin Valley Air Basin through incentive programs administered by the District, NRCS, or ARB.

2.0 Definitions

2.1 APCO: the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District, or any person authorized to act on behalf of the APCO.

2.2 ARB: the California state Air Resources Board as established by California Health and Safety Code Section 39510, or any person authorized to act on its behalf.

2.3 Carl Moyer Program: the Carl Moyer Memorial Air Quality Standards Attainment Program; a State of California funded incentive program as defined by California Health and Safety Code Sections 44275– 44299.2.

2.4 Case-by-Case Determination: alternative procedures approved by ARB for specific projects, as authorized under the Carl Moyer Program Guidelines.

2.5 Contract: a legally binding agreement signed by the District, NRCS, or ARB and the Grantee to fund an incentive project for the purpose of reducing emissions. Contracts shall include provisions for ensuring that the emissions reductions occur, including, but not limited to, actions that the Grantee must take to achieve the emission reductions for the project, project specific deadlines, inspection and monitoring requirements, and non-performance remedies.

2.6 Cost Effectiveness: the amount of incentive funding expended per ton of emissions reduced, as defined by the applicable incentive program guidelines.

2.7 District: the San Joaquin Valley Unified Air Pollution Control District.

2.8 Enforceable: for purposes of this rule, emission reductions are enforceable if the incentive program includes provisions for ensuring the following:

2.8.1 The emission reductions are independently and practicably verifiable through inspections, monitoring, and/or other mechanisms;

2.8.2 Incentive program violations are defined through legally binding contracts, including identifying the party or parties responsible for ensuring that emission reductions are achieved;

2.8.3 Grantees are obligated to provide all records needed to demonstrate that emission reductions are achieved; and

2.8.4 The public has access to all emissions-related information for reductions claimed in the annual demonstration report, as outlined in Section 4.0.

2.9 EPA: the United States Environmental Protection Agency.

2.10 EQIP: Environmental Quality Incentives Program; a voluntary program administered by the NRCS that provides financial and technical assistance to agricultural producers to plan and implement conservation practices that address natural resource concerns, including the improvement of combustion systems from stationary agricultural irrigation pump engines and mobile agricultural equipment.

2.11 Funding Source: a source of funding used to implement incentive programs, including, but not limited to, federal, state, and local sources. Examples of funding sources include Carl Moyer Program funds and Proposition 1B – Goods Movement Emission Reduction Program funds.

2.12 Grantee: a person, business, association, public agency, or other entity that enters into a contract with the District, NRCS, or ARB to reduce emissions under an incentive program.

2.13 Implementation Date: for the purposes of this rule, the date which new or replacement equipment, vehicles, or practices funded through incentive programs are put into service.

2.14 Incentive Program: a program that reduces emissions by promoting the adoption of lower emitting equipment, vehicles, or practices through the distribution of financial incentives to a Grantee.

2.15 Incentive Program Guidelines: administrative procedures, quantification methodologies, eligibility criteria, cost effectiveness criteria, reporting practices, and/or other procedures and methodologies used to implement incentive programs, as identified in Section 3.0.

2.16 Inspection: for purposes of this rule, a physical inspection by the APCO of the equipment, vehicle, or practice under contract as part of an incentive project.

2.17 NRCS: the United States Department of Agriculture Natural Resources Conservation Service.

2.18 Permanent: for purposes of this rule, emission reductions are permanent if actions are taken to physically destroy or permanently disable existing or baseline equipment or vehicles, or to permanently amend practices to ensure the reduction of emissions for the duration of the project life.

2.19 Project: for purposes of this rule, actions taken to reduce emissions through incentive programs, as contracted between the Grantee and the District, NRCS, or ARB using incentive program guidelines at the time of contracting. Such actions include, but are not limited to, replacements, retrofits, new purchases, new practices, and repower.

2.20 Project Life: for purposes of this rule, the period of time over which an incentive program project achieves SIP-creditable emission reductions. Project life shall not exceed the useful life of equipment, vehicles, or practices funded through incentive programs, and may vary across incentive programs and project types.

2.21 Project Type: for purposes of the annual demonstration report required by this rule, the project type is identified as the type of equipment, vehicle, or practice, and the action taken.

2.22 Proposition 1B: the Goods Movement Emission Reduction Program; a State of California funded incentive program as codified in California Health and Safety Code Section 39625 et seq.

2.23 Quantifiable: for purposes of this rule, emission reductions are quantifiable if they can be reliably determined through the use of well-established, publicly available emission factors and calculation methodologies.

2.24 SIP: the State Implementation Plan; a plan which provides for implementation, maintenance, and enforcement of National Ambient Air Quality Standards promulgated by EPA.

2.25 SIP-Creditable Emission Reduction: for purposes of this rule, reductions of emissions achieved through incentive programs that are Surplus, Quantifiable, Enforceable, and Permanent, as those terms are defined in this rule.

2.26 SIP Shortfall: for purposes of this rule, an instance when a commitment made pursuant to Section 7.0 in an adopted SIP to achieve a certain amount of SIP-creditable emission reductions is not achieved.

2.27 Surplus: for purposes of this rule, emission reductions are surplus when they are not otherwise required by any federal, state, or local regulation, or other legal mandate, and are in excess of the baseline emission inventories underlying a SIP attainment demonstration.

2.28 Valley: the San Joaquin Valley Air Basin including Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties, and the San Joaquin Valley Air Basin portion of Kern County.

3.0 Incentive Program Guidelines

3.1 The District shall quantify emission reductions under this rule in accordance with the following specific incentive program guidelines that provide for SIP-creditable emission reductions:

3.1.1 ARB Carl Moyer Program Guidelines for incentive projects funded by either the Carl Moyer Program or non Carl Moyer funding sources, for the following project types:

3.1.1.1 On-Road Heavy-Duty Vehicle

3.1.1.1.1 New Vehicle Purchase (Chapter 1, approved 11/17/2005; Chapter 3, approved 2008; or Chapter 4, approved 4/28/2011);

3.1.1.1.2 Repower (Chapter 1, approved 11/17/2005; Chapter 3, approved 2008; or Chapter 4, approved 4/28/2011); or

3.1.1.1.3 Retrofit (Chapter 1, approved 11/17/2005; Chapter 3, approved 2008; or Chapter 4, approved 4/28/2011).

3.1.1.2 On-Road Heavy-Duty Vehicles Fleet Modernization/Replacement (Chapter 2, approved 11/17/2005; Chapter 4, approved 3/27/2008; or Chapter 5, approved 4/28/2011).

3.1.1.3 Off-Road Compression-Ignition Equipment

3.1.1.3.1 Repower (Chapter 5, approved 11/17/2005; Chapter 5, approved 3/27/2008; or Chapter 7, approved 4/28/2011);

3.1.1.3.2 Replacement (Chapter 4, approved 3/27/2008; or Chapter 9, approved 4/28/2011); or

3.1.1.3.3 Retrofit (Chapter 5, approved 11/17/2005; Chapter 5, approved 3/27/2008; or Chapter 7, approved 4/28/2011).

3.1.1.4 Portable and Stationary Agricultural Sources

3.1.1.4.1 Repower (Chapter 10, approved 11/17/2005; Chapter 10, approved 3/27/2008; or Chapter 10, approved 4/28/2011);

3.1.1.4.2 New purchase of electric motor (Chapter 10, approved 11/17/2005; Chapter 10, approved 3/27/2008; or Chapter 10, approved 4/28/2011); or

3.1.1.4.3 Retrofit (Chapter 10, approved 11/17/2005; Chapter 10, approved 3/27/2008; or Chapter 10, approved 4/28/2011).

3.1.2 NRCS Conservation Practice Standard 372 - Combustion System Improvement (approved September 2010); Conservation Practice Standard 723 – Combustion System Air Emission Management (approved May 2009); NRCS General Manual, Title 450, Part 401 – Conservation Practice Standards (approved October 18, 2009); NRCS General Manual, Title 450, Part 407 – Documentation, Certification, and Spot Checking (approved October 17, 2009); Conservation Practice Standard 372 Specification (approved September 2010); NRCS Interim Conservation Practice Standard 723 – Combustion System Air Emission management (approved May 2009); NRCS Combustion System Improvement 372 Operation and Maintenance; and associated NRCS Program Combustion System Improvement of Mobile Engines Guidelines (December 2011; updated May 2012) for incentive projects funded by EQIP funds.

3.1.3 ARB Proposition 1B Goods Movement Emission Reduction Program Guidelines for Heavy-Duty Diesel Trucks repower, replacement, PM retrofit, or PM + NOx retrofit incentive projects funded by Proposition 1B funds or non-Proposition 1B funds. Applicable ARB Proposition 1B Goods Movement Emission Reduction Program Guidelines are the 2013 Proposition 1B: Goods Movement Emission Reduction Program Guidelines (Appendix A, approved 01/25/2013); the 2010 Proposition

1B: Goods Movement Emission Reduction Program Guidelines (Appendix A, approved 03/25/2010); and the 2008 Proposition 1B: Goods Movement Emission Reduction Program Guidelines (Appendices A or B, approved 02/28/2008).

3.2 Subject to sections 3.2.1 and 3.2.2 below, the District may quantify emission reductions under this rule in accordance with incentive program guidelines not specifically identified in Section 3.1, provided the District submits to EPA, pursuant to Section 7.0, a demonstration that each such guideline provides for SIP-creditable emission reductions. Incentive program guidelines subject to these procedures may include ARB Carl Moyer Program Guidelines, NRCS Combustion System Improvement Conservation Practice Standard 372 and associated NRCS Program Combustion System Improvement of Mobile Engines Guidelines, and ARB Proposition 1B Goods Movement Emission Reduction Program Guidelines.

3.2.1 Incentive program guidelines developed by the District to reduce emissions from mobile sources shall be developed in consultation with ARB.

3.2.2 Notwithstanding Sections 3.1 or Section 3.2, no case-by-case determination may be used to quantify emission reductions under this rule unless such determination is reviewed through a public process and submitted to EPA in accordance with Section 7.0.

3.3 The District shall develop and maintain a Manual of Procedures that includes all incentive program guidelines used to achieve SIP-creditable emission reductions from incentive programs, pursuant to Section 3.0. The Manual of Procedures shall:

3.3.1 Be made publically available on the District's website and maintained on an ongoing basis as incentive program guidelines are adopted; and

3.3.2 Include a description of how the incentive program guidelines ensure that incentive program emission reductions are SIP-creditable.

4.0 Annual Demonstration Report

The APCO shall annually prepare a report that demonstrates the quantity of SIP-creditable emission reductions. This report shall include the following elements, and shall be prepared and submitted to ARB and EPA through a public process in accordance with Section 5.0.

4.1 Description of incentive program guidelines used by the District, NRCS, or ARB to implement the incentive programs generating claimed SIP-creditable emission reductions, a description of how the guidelines ensure that the claimed emission

reductions are SIP-creditable, and a list of any guidelines that are being used for the first time under this rule.

4.2 SIP-creditable emission reductions generated through incentive programs, as implemented in the preceding year(s), summarized by pollutant, years that the emission reductions are occurring (project life), cost effectiveness, funding amount, incentive program guideline, and project type.

4.3 Adjustments to SIP-creditable emission reductions claimed in prior annual demonstration reports shall be reported in the annual demonstration report the year that the adjustments are made with a discussion explaining the cause for the adjustments. Adjustments to emission reductions claimed in prior annual demonstration reports may be the result of, but are not limited to, updated project information received during the course of project implementation or the adoption of new local, state, or federal requirements that might affect the surplus nature of emission reductions achieved by incentive programs.

4.4 Identification of SIP commitment(s) identified in District adopted SIP(s) (by year, pollutant, and magnitude), which the District has satisfied, in whole or in part, through SIP-creditable emission reductions. Such commitments include, but are not limited to, emission reduction commitments adopted to meet Clean Air Act requirements concerning the demonstration of attainment, Reasonable Further Progress, Rate of Progress, contingency measures, and long-term measures as defined by the federal Clean Air Act Section 182(e)(5) ("black box" reductions). The District shall identify and quantify SIP commitment shortfalls, if any, and remedies for addressing said shortfalls.

4.5 Project Information

Reported project information shall include the following information for incentive projects achieving SIP-creditable emission reductions, as applicable:

4.5.1 Unique project identification number, as established by the District, NRCS, or ARB;

4.5.2 Project location;

4.5.3 Project type;

4.5.4 Project life;

4.5.5 Implementation date of project;

4.5.6 Funding amount provided by District, NRCS, or ARB;

4.5.7 Incentive program guideline(s) used to implement the project, including revision date;

4.5.8 Quantified emission reductions per year, and aggregated over the project life, by pollutant; and

4.5.9 Description of both the baseline and the new equipment, vehicles, or practices, including the following for each, as applicable:

4.5.9.1 Make and model of equipment or vehicle;

4.5.9.2 Equipment or vehicle rating or horsepower;

4.5.9.3 Model year; and

4.5.9.4 Historical and projected annual usage.

4.5.10 Additional project details, as necessary to demonstrate the SIP-creditable emission reductions claimed in the annual demonstration report.

4.6 Project Monitoring and Enforcement

The annual demonstration report shall include a summary of monitoring and enforcement activities conducted during the reporting period for incentive projects for which SIP-creditable emission reductions are being claimed, as follows:

4.6.1 Identification of project audits, usage reports, inspections, and other project monitoring activities; and

4.6.2 List of actions taken to enforce emission reductions associated with contract requirements, including the following:

4.6.2.1 Identification of projects that do not satisfy contractual requirements; and

4.6.2.2 Identification of enforcement actions and remedies, including penalties, additional contractual requirements, or other actions.

4.7 Incentive Program Evaluation

The District shall perform a retrospective assessment of the performance of its incentive program to evaluate overall incentive program performance and develop recommendations for future enhancements to incentive program implementation.

This assessment shall include a summary of the public process to receive comments on the draft report, as required by Section 5.0.

5.0 Annual Demonstration Report Process

5.1 The APCO shall submit the annual demonstration report and information described in Section 4.0 to ARB and EPA no later than August 31 of each year.

5.2 The APCO shall release the draft annual demonstration report to the public and present it to the District Governing Board prior to submittal to ARB and EPA for concurrence.

5.3 Previously submitted annual demonstration reports shall be made available on the District's website.

6.0 Recordkeeping Requirements

6.1 All documents created and/or used in implementing the requirements of Section 4.0 shall be kept and maintained as required by the applicable incentive program guidelines. Consistent with the California Public Records Act and other related requirements, such records shall be made available for public review. Information regarding the process for the public review of such records shall be included in the annual demonstration report.

6.2 Records related to implementation of the NRCS Program Combustion System Improvement of Mobile Engines incentive program are prohibited from mandatory disclosure, pursuant to the Federal Food Security Act of 1985 (7 U.S.C. § 608d(2)).

7.0 Use of Projected Incentive Program Reductions in SIPs

Where the District intends to rely on projections of SIP-creditable emission reductions under this rule to satisfy a federal Clean Air Act SIP requirement (e.g., attainment, Reasonable Further Progress, Rate of Progress, contingency measures, or long-term measures as defined by the federal Clean Air Act Section 182(e)(5) ("black box" reductions)), the District shall identify specific amounts of SIP-creditable emission reductions for a particular year or years in the relevant SIP. Each SIP submission in which the District relies on such projections shall contain a demonstration that the applicable incentive program guideline(s) continues to provide for SIP-creditable emission reductions and shall contain an enforceable commitment that:

7.1 Identifies incentive program guidelines, as specified in Section 3.0, used to generate projected SIP-creditable emission reductions;

7.2 Identifies emission reductions not to exceed the amount projected to be achieved through the use of secured or reasonably anticipated incentive program funding and the estimated availability of emission reductions projects and willing participants, based on historical participation and estimates of remaining equipment;

7.3 Is specifically adopted by the District as a part of the SIP and accounted for in the annual demonstration report as SIP-creditable emission reductions are achieved through provisions of this rule; and

7.4 States that if either the District or EPA finds that there is a SIP shortfall for a particular year, the District will adopt and submit to EPA, by specified dates, substitute rules and measures that will achieve equivalent emission reductions as expeditiously as practicable and no later than any applicable implementation deadline in the Clean Air Act or EPA's implementing regulations.

Table 2-1: Accelerated Reductions by Crop Category

Crop Category or Material	District 2020 Report Recommendation	CARB Staff Recommendation	District Supplement Recommendation
Vineyard Removals	Effective 2022, based on case-by-case evaluation, where alternatives are available, prohibit burning of projects >15 acres per location per year <15 acre projects allowed to burn	Introduce prohibition on burning at large agricultural operations, including for <15 acre removal projects, effective 2022. Phase in prohibitions for small agricultural operations while providing a longer transition time than for larger operations.	**Spur-Pruned (Cordon)** 1) Effective January 1, 2022, Prohibit burning at agricultural operations >2,000 acres 2) Effective January 1, 2023, prohibit burning at agricultural operations >1,000 acres 3) Effective January 1, 2024, prohibit burning at agricultural operations >250 acres 4) Effective January 1, 2025, prohibit all vineyard removal open burns **Cane-Pruned** 1) Effective January 1, 2022, Prohibit burning at agricultural operations >500 acres 2) Effective January 1, 2023, prohibit burning at agricultural operations >250 acres 3) Effective January 1, 2024, prohibit burning at agricultural operations >100 acres 4) Effective January 1, 2025, prohibit all vineyard removal open burns
Citrus Orchard Removals	Effective January 1, 2021: 1) Prohibit burning at agricultural operations with total citrus acreage at all sites >500 acres 2) Prohibit burning of removals >40 acres at a single location per year	Accelerate the phase-out timeline: • Pull forward 2022 recommendation to be effective September 1, 2021 • Pull forward 2023 recommendation to be effective January 1, 2022	Effective January 1, 2021: 1) Prohibit burning at agricultural operations with total citrus acreage at all sites >500 acres 2) Prohibit burning of removals >40 acres at a single location per year

Crop Category or Material	District 2020 Report Recommendation	CARB Staff Recommendation	District Supplement Recommendation
	3) Maintain case-by-case determination for removals 15-40 acres at agricultural operations ≤500 acres Effective January 1, 2022: 1) Lower acreage threshold to >200 acres 2) Lower removal size threshold to >30 acres 3) Maintain case-by-case for removals 15-30 acres at agricultural operations ≤200 acres Effective January 1, 2023, prohibit all citrus removal open burns except removal projects ≤15 acres	Introduce prohibition on burning of ≤15 acre removal projects at large agricultural operations, effective 2022. Phase in prohibitions for small agricultural operations while providing a longer transition time than for larger operations.	3) Maintain case-by-case determination for removals 15-40 acres at agricultural operations ≤500 acres Effective September 1, 2021: 1) Lower agricultural operation acreage threshold to >200 acres 2) Lower removal size threshold to >30 acres 3) Maintain case-by-case for removals 15-30 acres at agricultural operations ≤200 acres Effective January 1, 2022, prohibit all citrus removal open burns except removal projects ≤15 acres
≤ 15 Acre Orchard Removals	Continue to permit burning	Introduce prohibition on burning of ≤15 acre removal projects at large agricultural operations, effective 2022. Phase in prohibitions for small agricultural operations while providing a longer transition time than for larger operations.	Effective January 1, 2022, prohibit burning at agricultural operations >500 acres Effective January 1, 2023, prohibit burning at agricultural operations >200 acres Effective January 1, 2024, prohibit burning at agricultural operations >100 acres Effective January 1, 2025, prohibit all orchard removal open burns
Surface Harvested Prunings (Almond/Walnut/Pecan)	Effective January 1, 2021, prohibit surface harvested pruning open burns >20 acres	Concur with District 2020 Report Recommendations	Effective January 1, 2021, prohibit surface harvested pruning open burns >20 acres

Crop Category or Material	District 2020 Report Recommendation	CARB Staff Recommendation	District Supplement Recommendation
	Effective January 1, 2022, prohibit open burning ≤20 acres at agricultural operations >200 acres Effective January 1, 2023, lower agricultural operation threshold to >50 acres		Effective January 1, 2022, prohibit open burning ≤20 acres at agricultural operations >200 acres Effective January 1, 2023, lower agricultural operation threshold to >50 acres Effective January 1, 2025, prohibit all surface harvested pruning open burns
Raisin Trays	Prohibit effective January 1, 2024	Concur with District 2020 Report Recommendations	CARB concurrence provided, no proposed changes
Rice Stubble	Effective January 1, 2021, prohibit open burning of 75 percent of rice stubble per year of the total acreage of rice farmed by the operator	Decrease percentage of acreage that can be burned from 25 percent to 20 percent, effective January 1, 2021	Effective January 1, 2021, prohibit open burning of 80 percent of rice stubble per year of the total acreage of rice farmed by the operator
Residual Rice Stubble and Spot Burning	Prohibit effective January 1, 2021	Concur with District 2020 Report Recommendations	CARB concurrence provided, no proposed changes
Rice Field Levees and Banks	Continue to permit burning	Concur with District 2020 Report Recommendations	CARB concurrence provided, no proposed changes
Apple/Pear/Quince Prunings and Orchard Removals	Continue to permit burning	Concur with District 2020 Report Recommendations	CARB concurrence provided, no proposed changes
Weed Abatement (Ponding and Levee Banks)	Continue to permit burning	Concur with District 2020 Report Recommendations	CARB concurrence provided, no proposed changes
Diseased Beehives	Continue to permit burning	Concur with District 2020 Report Recommendations	CARB concurrence provided, no proposed changes

BEFORE THE GOVERNING BOARD OF THE SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

IN THE MATTER OF: APPROVE SUPPLEMENTAL REPORT AND RECOMMENDATIONS ON AGRICULTURAL BURNING) **RESOLUTION NO.** 21-06-12

WHEREAS, the San Joaquin Valley Unified Air Pollution Control District (District) is a duly constituted unified district, as provided in the California Health and Safety Code (CH&SC) sections (§§) 40150 to 40161; and

WHEREAS, said District is authorized by CH&SC § 40702 to make and enforce all necessary and proper orders, rules, and regulations to accomplish the purpose of Division 26 of the CH&SC; and

WHEREAS, pursuant to Section 107 of the Federal Clean Air Act (CAA) and pursuant to § 39608 of the CH&SC, the San Joaquin Valley (Valley) has been classified as a nonattainment area for the national health-based air quality standards for ozone and particulate matter with aerodynamic diameter of 2.5 micrometers or less (PM2.5); and

WHEREAS, CH&SC § 41855.5 prohibits the District from issuing permits for the open burning of certain agricultural materials through a phase-in schedule, except as provided in CH&SC § 41855.6, and requires the District to regulate the burning of diseased crops and establish best management practices for the control of other weeds and maintenance; and

WHEREAS, CH&SC § 41855.6 authorizes the District to continue to issue burn permits for agricultural materials or crops if the District determines all of the following: (a) that there is no economically feasible alternative means of eliminating the waste, (b) that there is no long-term federal or state funding commitment for the continued operation of biomass facilities in the San Joaquin Valley or development of alternatives to burning, (c) that the continued issuance of permits for a specific category or crop will not cause or substantially contribute to a violation of an applicable federal ambient air quality

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standard, and (d) the California Air Resources Board (CARB) concurs with the District's determinations; and

WHEREAS, the District has addressed the first three phases of the burn prohibition deadlines in prior amendments to District Rule 4103 (Open Burning); and adopted the *2020 Staff Report and Recommendations on Agricultural Burning* on December 17, 2020 to revisit previously adopted postponements for orchard removals of citrus, apple, pear, and quince crops; orchard removal of less than 15 acres at a single location; prunings from apple, pear, and quince crops; weed abatement affecting waterways (ponding and levee banks); vineyard removals; raisin trays; surface harvested prunings from almond, walnut, and pecan crops; and rice straw burning; and

WHEREAS, the District addressed the CH&SC §§ 41855.5 and 41855.6 requirements in the approval of a comprehensive report, *2020 Staff Report and Recommendations on Agricultural Burning*, required under Section 6.3 of the April 15, 2010, amended version of Rule 4103 to satisfy the requirements from CH&SC §§ 41855.5 and 41855.6 by presenting the District's findings and recommendations for specified agricultural materials.

WHEREAS, the California Air Resources Board (CARB), pursuant to CH&SC § 41855.6 requirements, adopted the *San Joaquin Valley Agricultural Burning Assessment* and Resolution 21-4 on February 25, 2021, which provided concurrence with the District's 2020 Report through August 31, 2021, and established additional criteria for concurrence beyond August 31, 2021, including mandating the near-complete phase-out of agricultural open burning by January 1, 2025.

WHEREAS, the District is addressing the requirements of CARB's *San Joaquin Valley Agricultural Burning Assessment* and Resolution 21-4 by adopting the *Supplemental Report and Recommendations on Agricultural Burning* (Supplement).

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. The Governing Board hereby approves the Supplement, attached hereto and

incorporated herein by this reference, as required by CARB's *San Joaquin Valley Agricultural Burning Assessment* and Resolution 21-4.

2. The Governing Board hereby finds that the cost effectiveness requirements of CH&SC § 40728.5 and socioeconomic impact analysis requirements of CH&SC § 40920.6 do not apply to this action. The Supplement determinations do not implement Best Available Retrofit Control Technology or strengthen the emission limitations established by the CH&SC §§ 41855.5 and 41855.6.

3. In connection with said determinations and based on the evidence and information presented at the hearing upon which its decision is based, the Governing Board makes the following findings:

a. Implementation of said determinations from the Supplement will reduce emissions of PM2.5, oxides of nitrogen (NOx), volatile organic compounds (VOC), and oxides of sulfur (SOx);

b. The estimated emission reductions will benefit San Joaquin Valley public health by reducing unhealthful ambient concentrations of ozone and particulate matter;

c. Techniques and technologies that are economically feasible for specific crop types are available and currently in use in the San Joaquin Valley;

d. Complying with said determinations are not expected to constitute an undue burden on affected industries;

e. Implementation of said determinations will advance longstanding commitments by the District to implement every feasible measure for the reduction of ozone and particulate matter precursors.

4. The Governing Board finds that, because this report will not cause either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment, the proposed actions do not constitute a project under the provisions of the California Environmental Quality Act (CEQA) Guidelines § 15378. Furthermore, the proposed actions are exempt for actions taken by regulatory agencies, as authorized

by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment (CEQA Guidelines § 15308) (Actions by Regulatory Agencies for Protection of the Environment) and exempt from CEQA per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines § 15061 (b)(3)).

5. Pursuant to § 15062 of the CEQA guidelines, the Executive Director/Air Pollution Control Officer is directed to file a Notice of Exemption with the County Clerks of each of the counties in the District.

6. The Executive Director/Air Pollution Control Officer is hereby directed to forward a copy of this Resolution and the Supplement to CARB for their concurrence, and CARB and U.S. EPA for inclusion in the State Implementation Plan.

7. The Executive Director/Air Pollution Control Officer is hereby authorized to make minor changes in the Supplement that are necessary to make technical clarifications or corrections, or to satisfy CARB and U.S. EPA requirements, provided that there are no significant changes to the recommendations in the Supplement.

8. The Governing Board Chair, with Executive Director/APCO recommendation, is hereby authorized to execute agreements to fund early demonstration or pilot projects for alternatives to open agricultural burning, per specific approval criteria, in an amount up to $500,000.

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THE FOREGOING was passed and adopted by the following vote of the Governing Board of the San Joaquin Valley Unified Air Pollution Control District this 17th day of June 2021, to wit:

AYES: Chiesa, Fugazi, Lewis, Mendes, Pacheco-Werner, Preciado, Reyes, Rickman, Sherriffs, Shuklian, Wheeler, Pedersen

NOES: None

ABSENT: Bessinger, Couch, Pareira

SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL DISTRICT

By _____
Craig Pedersen, Chair
Governing Board

ATTEST:
Clerk to the Governing Board

By _____
Michelle Franco

State of California
Air Resources Board

San Joaquin Valley Agricultural Burning Assessment

Resolution 21-4

February 25, 2021

Agenda Item No.: 21-1-6

Whereas, sections 39600 and 39601 of the Health and Safety Code authorize the California Air Resources Board (CARB or Board) to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

Whereas, the Legislature in Health and Safety Code section 39602 has designated CARB as the air pollution control agency for all purposes set forth in federal law;

Whereas, CARB is responsible for preparing the State Implementation Plan (SIP) for attaining and maintaining the National Ambient Air Quality Standards (NAAQS or standards) as required by the federal Clean Air Act (the Act) (42 U.S.C. section 7401 et seq.), and to this end is directed by Health and Safety Code section 39602 to coordinate the activities of all local and regional air pollution control and air quality management districts (districts) necessary to comply with the Act;

Whereas, sections 39515 and 39516 of the Health and Safety Code provide that any power, duty, purpose, function or jurisdiction of the Board may be delegated to the CARB Executive Officer as the Board deems appropriate;

Whereas, the districts have primary responsibility for controlling air pollution from non-vehicular sources and for adopting control measures, rules, and regulations to attain the standards within their boundaries, under sections 39002, 40000, 40001, 40701, 40702, and 41650 of the Health and Safety Code;

Whereas, CARB has responsibility for ensuring that the districts meet their responsibilities under the Act, under sections 39002, 39500, 39602, and 41650 of the Health and Safety Code;

Whereas, the San Joaquin Valley Air Basin (San Joaquin Valley) includes Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, Tulare, and western Kern Counties;

Whereas, the San Joaquin Valley Air Pollution Control District (District) was established under section 40002 of the Health and Safety Code as the air pollution control district responsible for carrying out these non-vehicular and attainment responsibilities in the San Joaquin Valley;

Whereas, pursuant to Health and Safety Code section 41856, CARB was directed to develop guidelines for the regulation and control of agricultural burning for each air basin in the State;

Whereas, on March 23, 2000, CARB adopted the Smoke Management Guidelines for Agricultural and Prescribed Burning (Regulation) requiring districts to adopt, implement, and enforce a Smoke Management Program consistent with the Regulation;

Whereas, on November 18, 2002, CARB approved the District's Revised Smoke Management System as meeting the requirements of the Regulation;

Whereas, the agricultural industry underpins the San Joaquin Valley economy and generates large amounts of woody biomass in the course of its operations;

Whereas, open burning is historically the most common and cost-effective disposal method for these agricultural materials not only in the San Joaquin Valley, but also across the State;

Whereas, the San Joaquin Valley faces immense air quality challenges, particularly in reducing fine particulate matter (PM2.5) pollution to protect the health of San Joaquin Valley residents, including from open burning of agricultural materials;

Whereas, in 2003, Senate Bill 705 (Florez, Chapter 481, Statutes of 2003) was enacted, adding sections 41855.5 and 41855.6 to the Health and Safety Code to prohibit the burning of specified categories of agricultural waste in the San Joaquin Valley;

Whereas, pursuant to section 41855.5 of the Health and Safety Code, the District was directed to stop issuing permits to burn specified categories of agricultural waste within the District by specified dates: field crops, prunings, and weed abatement commencing June 1, 2005; orchard removals commencing June 1, 2007; and other materials, vineyard removals, and surface harvested prunings commencing June 1, 2010;

Whereas, the District has amended its open agricultural burning rule (Rule 4103) to phase out burning of many crop categories and materials since 2005 in accordance with section 41855.5 of the Health and Safety Code;

Whereas, the District and the agricultural industry have made significant strides to advance technology and transition from open burning of agricultural materials to less polluting alternatives such as soil incorporation, though a multi-year drought and the closure of biomass plants impeded even greater transformation;

Whereas, section 41855.6 of the Health and Safety Code allows the District to postpone the prohibition commencement dates set forth in section 41855.5 of the Health and Safety Code for any crop category or material described if all of the following applies:

a) The District determines that there is no economically feasible alternative means of eliminating the waste;
b) The District determines that there is no long-term federal or State funding commitment for the continued operation of biomass facilities in the San Joaquin Valley or development of alternatives to burning;
c) The District determines that the continued issuance of permits for that specific category or crop will not cause, or substantially contribute to, a violation of an applicable federal ambient air quality standard;
d) CARB concurs with the District's determinations pursuant to section 41855.5 of the Health and Safety Code;

Whereas, in accordance with section 41855.6 of the Health and Safety Code, in 2005, 2007, 2010, 2012, and 2015, CARB concurred with the District's previous determinations that it was necessary to postpone burn prohibitions for certain crop categories and materials;

Whereas, the District prepared the 2020 Staff Report and Recommendations on Agricultural Burning (2020 Report), which includes new restrictions on specified crop categories, including vineyard removals; citrus orchard removals; residual rice stubble and rice stubble spot burning; raisin trays; and prunings of almond, walnut, and pecan crops;

Whereas, in the 2020 Report, in accordance with section 41855.6 of the Health and Safety Code, the District determined that:

(a) For certain specified crop categories and materials, there is no economically feasible alternative means of eliminating the waste;
(b) There is no long-term federal or State funding commitment for the continued operation of biomass facilities in the San Joaquin Valley or development of alternatives to burning; and
(c) Continued issuance of permits for burn postponement categories or crops will not cause, or substantially contribute to, a violation of an applicable federal ambient air quality standard;

Whereas, because of these determinations, the 2020 Report includes a request for CARB concurrence with postponements for specified crop categories and materials;

Whereas, the 2020 Report was made available for public review on November 24, 2020, adopted by the District Governing Board following a public hearing on December 17, 2020, and forwarded to CARB for concurrence to postpone the burn prohibition for certain crop categories and materials as specified in the 2020 Report on December 18, 2020;

Whereas, CARB's concurrence with the District's 2015 recommendations expired December 31, 2020;

Whereas, CARB did not have sufficient to time to assess the information in the 2020 Report prior to the previous concurrence expiring on December 31, 2020;

Whereas, to ensure an effective public process for considering the District's recommendations, on January 3, 2021, the CARB Executive Officer provided concurrence in certain cases to prevent economic loss to farmers for a limited period beginning January 3, 2021, and ending February 24, 2021;

Whereas, the 2020 Report includes a request for sustained State funding support of approximately $15 million per year for alternative, cleaner methods of eliminating agricultural waste;

Whereas, the District is at the forefront of developing and deploying alternatives to agricultural burning;

Whereas, the District established the Alternatives to Open Agricultural Burning Incentive Program (Incentive Program) in November 2018, which provides grants to commercial agricultural operations located within the District to chip, shred, or mulch woody agricultural material as an alternative to the open burning of these materials;

Whereas, the District has executed $18 million in grants under the Incentive Program since its launch, providing for the treatment of approximately 33,000 acres and avoidance of burning of 900,000 tons of agricultural materials;

Whereas, the 2020 Report includes recommendations for State bioenergy policy, including State incentives for developing advanced bioenergy conversion projects; a Clean Biomass Collaborative partnership with the District, CARB, the U.S. Environmental Protection Agency, and other entities; and a State strategy for addressing biomass plant challenges;

Whereas, CARB staff supports the District's efforts to reduce agricultural burning as described in its 2020 Report but recommends, as set forth in the Staff Recommendations San Joaquin Valley Agricultural Burning Assessment (Staff Recommendations) released for public review on February 5, 2021, the near-complete phase-out of agricultural burning by January 1, 2025;

Whereas, CARB Staff Recommendations provide several recommendations to assist the District to improve readiness to reduce burning at the pace needed to meet the 2025 target, including an acceleration of the ongoing transition to sustainable practices starting with large agricultural operations, which are better able to absorb the costs of alternatives such as soil incorporation, while allowing more time for smaller agricultural operations to adjust;

Whereas, CARB conducts its California Environmental Quality Act (CEQA) review according to a certified regulatory program approved pursuant to Public Resources Code section 21080.5 of CEQA;

Whereas, CARB staff has reviewed the proposed action and determined it is exempt from CEQA under CEQA Guidelines section 15308—Actions Taken by Regulatory Agencies for Protection of the Environment—because the proposed action would better protect the public from the health impacts due to exposure to air emissions from agricultural waste burning and would not generate significant adverse environmental impacts; and

Whereas, CARB staff has further determined the proposed action is exempt from CEQA under CEQA Guidelines section 15061(b)(3) because the action recommends actions already analyzed by the District, and the proposed delegation of authority to the CARB Executive Officer for further concurrences as described below does not create an environmental impact.

Now, therefore, be it resolved, that CARB commits to partner with the District to improve readiness to reduce burning at the pace needed to meet the 2025 target in the CARB Staff Recommendations of a near-complete phase-out of agricultural burning in the Valley, including by holding a summit on non-burning alternatives, developing outreach materials and programs, establishing a Clean Biomass/Bioenergy Collaborative across State agencies, pursuing additional incentive funding from State and federal sources, and encouraging the use of woody biomass in low-carbon biofuel uses.

Be it further resolved that the Board finds that partnerships among the District, CARB, other State and federal agencies, the agricultural industry, and Valley residents and other stakeholders will be key to improve the economic feasibility of alternative methods of eliminating agricultural waste so it is more accessible for all crop types and materials.

Be it further resolved that the Board finds that, to realize a near-complete phase-out of agricultural burning, there are opportunities at the federal and State level to develop long-term funding for these alternatives beyond current commitments.

Be it further resolved that the Board recognizes that incentive funding for alternatives should be prioritized to provide support for small farms to transition away from open burning.

Be it further resolved that the Board recognizes the need for a period of transition over the next six months to start addressing the economic feasibility of alternatives to open burning and develop additional State and Federal funding commitments for alternative methods of disposal.

Be it further resolved that the Board expects that the District's Smoke Management System will continue to operate in such a way as to avoid violations of air quality

standards throughout the transition to near-complete phase-out of agricultural burning.

Be it further resolved that the Board hereby concurs with the District's determinations under Health and Safety Code section 41855.6 for burn prohibition postponements, as set forth in the District's 2020 Report, through August 31, 2021.

Be it further resolved that the Board delegates the Executive Officer the authority to provide concurrence as necessary beyond this initial period through January 1, 2025, provided that the District implements the CARB Staff Recommendations as provided in Attachment A and any additional criteria included in this resolution..

Be it further resolved that the Board supports the District developing and making available to CARB by August 31, 2021, a transparent and measurable reduction plan with reduction benchmarks for near-complete phase-out of open burning.

Be it further resolved that the CARB Executive Officer shall provide annual status reports to the Board on the phase down and will return to the Board with recommendations in the event that implementation issues arise.

Be it further resolved that the Board reserves the right to withdraw its concurrence for any category of agricultural waste or crop if the Board determines that the criteria specified in section 41855.6 of the Health and Safety Code are not met.

I hereby certify that the above is a true and correct copy of Resolution 21-4 as adopted by the California Air Resources Board.

Ryan Sakazaki

Ryan Sakazaki, Board Clerk

June 18, 2021

Mr. Samir Sheikh
Executive Director/Air Pollution Control Officer
San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, California 93726
samir.sheikh@valleyair.org

Dear Mr. Sheikh:

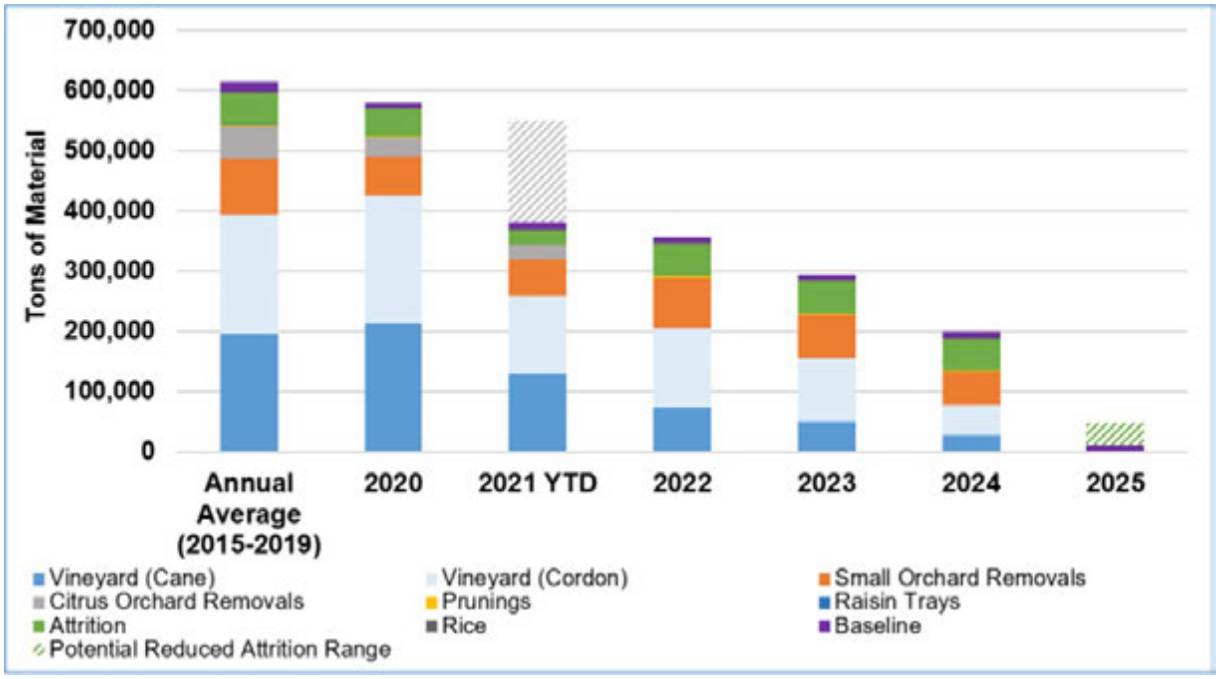
On February 25, 2021, with adoption of Resolution 21-4 and consistent with the requirements in Health and Safety Code sections 41855.5 and 41855.6, the California Air Resources Board (CARB or Board) provided concurrence with the San Joaquin Valley Air Pollution Control District's (District) 2020 Staff Report and Recommendations on Agricultural Burning through August 31, 2021. The Board also authorized the CARB Executive Officer to provide concurrence as necessary beyond the initial period, provided that the District implemented the recommendations provided in the CARB Staff Recommendations: San Joaquin Valley Agricultural Burning Assessment (CARB Staff Recommendations) and any additional criteria included in Resolution 21-4.

On June 17, 2021, the San Joaquin Valley Air Pollution Control District approved the Supplemental Report and Recommendations on Agricultural Burning (District Supplemental Report) updating the District's strategy to reduce emissions from open agricultural burning. I appreciate the close collaboration with District staff over the last several months as the District developed the Supplemental Report.

CARB's recommendations and the District's fulfilment of those recommendations in the District Supplemental Report are summarized below.

1. CARB recommended accelerated phase-out timelines by crop type, starting with large agricultural operations. The District Supplemental Report includes detailed, crop-specific phase-out schedules for removals of cordon and cane-pruned vineyards, citrus orchard removals, <15 acre orchard removals, and almond/walnut/pecan prunings, beginning with the largest agricultural operations first, consistent with CARB direction.
2. CARB recommended that the District set a clear ton target for the near-complete phase-out of burning by January 1, 2025, to help provide certainty for reductions in the amount of agricultural material burned and to help the District send a clear signal that the market is moving towards more sustainable alternatives to open burning. Resolution 21-4 further specified that the District should produce a transparent and measurable reduction plan with reduction benchmarks. The District Supplemental Report establishes this target and benchmarks based on the crop-specific reduction strategy described above. Figure 2-9 in the District Supplemental Report (reproduced below) clearly shows the projected annual open burn tonnage in woody material being

open burned in the Valley from the phase-out schedule detailed above, illustrating a steady decline in burning over time.



3. CARB recommended the District take a number of actions, in partnership with CARB, to improve readiness to reduce burning at the pace needed to meet the 2025 target of a near-complete phase-out of agricultural burning in the Valley. These actions included:
    a. Holding a summit on non-burning alternatives;
    b. Developing outreach materials and programs with UC Cooperative Extension to identify alternatives to vineyard and orchard removals;
    c. Pursuing a Clean Biomass/Bioenergy Collaborative across state agencies;
    d. Pursuing additional incentive funding from State and federal sources; and
    e. Encouraging the use of woody biomass in low-carbon uses.

The District Supplemental Report describes how the District and CARB have pursued these actions:

a. Summit: In September of 2021, CARB will host, with assistance from the District, a two-day Summit focusing on solutions to overcome the challenges associated with implementation of alternatives to open agricultural burning. The Summit will advance the understanding of available and potential new biomass/bioenergy technologies, including advantages and disadvantages of each, and anticipated implementation roadblocks and solutions.
b. Outreach: The District has developed program advertisements, promotional videos, infographics, social media, radio/television, and other outreach materials to complement extensive and ongoing conversations with affected stakeholders, including numerous meetings with agricultural representatives

and grower cooperatives. In fall of 2021, the District will coordinate with the agricultural community to host a series of educational workshops, webinars, and pop-up events to further educate affected growers about upcoming prohibitions to open burning, and available alternatives. The District also committed to ongoing work with Valley communities to effectively communicate requirements and available tools to report complaints.

c. Clean Biomass Collaborative: In consultation with the District, CARB has established a Clean Biomass Collaborative to help better understand and promote alternatives to open burning of agricultural biomass. The Collaborative will seek input from a broad range of stakeholders to characterize current and potential biomass/bioenergy technology options and evaluate them for their viability as alternatives to open agricultural burning.
d. Incentive funding: CARB and the District recognize the critical need for funding to support the transition to costly new and emerging alternatives. The 2021-22 May Revision to the Governor's Budget included funding for sustainable agriculture, including $150 million in funding for "Incentives for Alternatives to Agricultural Burning in the San Joaquin Valley" and $100 million in funding for the California Department of Food and Agriculture Healthy Soils Program. Additionally, the Senate's Agriculture Budget Plan released May 4, 2021, included $180 million over a three-year period ($60 million per year) to support the deployment of alternatives to open burning. AB 128, passed by the Legislature on June 14, 2021, signals the intent of the Legislature to provide $703,418,000 from the General Fund and $42,582,000 from the Air Pollution Control Fund for an agriculture package, which is expected to include funding for incentives for alternatives to agricultural burning. CARB is prepared to execute a grant agreement to provide these funds to the District as soon as the funds are appropriated. The District intends to prioritize incentive funding for small agricultural operations through its Alternatives to Agricultural Open Burning Incentive Program, consistent with CARB direction in Resolution 21-4 to provide support for small farms.
e. Low-carbon uses: The conversion of agricultural residue into liquid and gaseous fuels is another alternative to burning which could also support the State's climate change mitigation efforts. As part of California's effort to reduce greenhouse gas emissions, CARB has adopted a Low Carbon Fuel Standard (LCFS) which sets a decreasing carbon intensity for California's transportation fuel pool and helps support the deployment of a range of low-carbon and renewable fuel alternatives like renewable diesel, biodiesel, alternative jet fuel, renewable natural gas, and others. These low-carbon fuels will be critical to decarbonizing our transportation sector over the coming years, particularly for areas that will be hard to electrify like agricultural equipment, marine, and other off-road equipment.

4. CARB recommended the District consider seeking to raise the per acre penalty for burning conducted pursuant to a Stipulated Order of Abatement (SOA) that was granted in 2015 by the District Hearing Board to allow orchard removal burns. The District Supplemental Report describes that the SOA process is not currently being

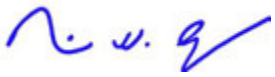
used by growers for orchard removals, but that the District will nevertheless consider potential enhancements, including an additional increase in the SOA penalty amount, or working with the Hearing Board to sunset the current SOA.

CARB has reviewed the District Supplemental Report and has determined the District has responded to the CARB Staff Recommendations and that the District Supplemental Report meets the requirements provided for in Resolution 21-4 for continued concurrence beyond the limited concurrence period ending on August 31, 2021. Therefore, CARB is providing concurrence with the District Supplemental Report through December 31, 2024.

I also want to acknowledge and appreciate the District's plans to provide more information this summer to the public regarding authorized agricultural burning during the phase-out transition period. Providing information to communities and residents about planned agricultural burns is an important component of public outreach.

CARB looks forward to continuing to work closely with the District to ensure the successful transition to sustainable alternatives to open agricultural burning in the San Joaquin Valley. If you have any questions, please contact me at (916) 322-7077 or via email at *richard.corey@arb.ca.gov*, or contact Ms. Edie Chang, Deputy Executive Officer, at (916) 445-4383 or via email at *edie.chang@arb.ca.gov*.

Sincerely,



Richard W. Corey, Executive Officer

cc: Edie Chang, Deputy Executive Officer