

# DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

## Air Quality Control Commission

### REGULATION NUMBER 7

#### CONTROL OF OZONE VIA OZONE PRECURSORS

#### (EMISSIONS OF VOLATILE ORGANIC COMPOUNDS AND NITROGEN OXIDES)

#### 5 CCR 1001-9

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**I. Applicability**

I.A.

I.A.1. The provisions of this regulation shall apply as follows:

I.A.1.a. All provisions of this regulation apply to the Denver 1-hour ozone attainment/maintenance area, and to any nonattainment area for the 1-hour ozone standard.

I.A.1.b. (State Only) All provisions of this regulation apply to any ozone nonattainment area, which includes areas designated nonattainment for either the 1-hour or 8-hour ozone standard, unless otherwise specified in Sections I.A.1.c. and d., below. Colorado's ozone nonattainment or attainment maintenance area maps and chronologies of attainment status are identified in Appendix A of this regulation.

I.A.1.c. The provisions of Section V, VI.B.1 and 2, VII.C., and XVII apply statewide. The Provisions of Section XVII, XVIII and any other section marked by (State Only) are not federally enforceable.

I.A.1.d. The provisions of Sections XII, and XVI apply in the 8-hour Ozone Control Area.

I.A.2. REPEALED

I.A.3. REPEALED

I.B. Sources

I.B.1. New Sources

I.B.1.a. New sources, defined as any sources which either (1) submit a complete permit application on or after October 30, 1989, or (2) if no permit is required, commence operation on or after October 30, 1989, must comply with the provisions of this regulation upon commencement of operation.

I.B.1.b. (State Only) New sources are any sources which commenced construction on or after the date on which the area is first designated as being in nonattainment for ozone and are located in that area, or, if located in the 1-hour ozone nonattainment or attainment maintenance area, by October 30, 1989. New

sources shall comply with the requirements of this regulation by whichever date comes later:

I.B.1.b.(i) (State Only) October 30, 1989, if they are located in what was previously designated as a 1-hour ozone nonattainment or attainment maintenance area;

I.B.1.b.(ii) (State Only) February 1, 2009, if they are located in an 8-Hour Ozone Control Area and outside of the 1-hour ozone nonattainment or attainment maintenance area; or

I.B.1.b.(iii) (State Only) Upon commencement of operation, if located within an ozone nonattainment or attainment maintenance area.

I.B.1.c. This Section I.B.1 does not apply to oil and gas operations subject to Section XII, stationary and portable engines subject to Section XVI, or natural gas actuated pneumatic controllers subject to Section XVIII.

#### I.B.2. Existing Sources

I.B.2.a. Existing sources are (1) those sources for which a complete permit application was submitted prior to October 30, 1989, or (2) those sources, which commenced operation prior to October 30, 1989.

I.B.2.b. (State Only) Existing sources are those sources which commenced construction prior to the date on which the area is first designated as being in nonattainment for ozone and are located in that area, or, if located in the 1-hour ozone nonattainment or attainment maintenance area, by October 30, 1989.

I.B.2.c. Existing sources shall not be required to comply with requirements of this regulation until on and after October 30, 1991. All existing sources shall comply with the requirements set forth in exhibit A, attached to this regulation, until October 30, 1991.

I.B.2.d. (State Only) Existing sources shall be required to comply with requirements of this regulation by whichever date comes later:

I.B.2.d.(i) (State Only) October 30, 1989, if they are located in what was previously designated as a 1-hour ozone nonattainment or attainment maintenance area;

I.B.2.d.(ii) (State Only) February 1, 2009, if they are located in an 8-hour Ozone Control Area and outside of the Denver 1-hour ozone nonattainment or attainment maintenance area; or

I.B.2.d.(iii) (State Only) the date on which the area is first designated as being in nonattainment for ozone, if located within that ozone nonattainment or attainment maintenance area.

I.B.2.e. On and after October 30, 1991, all existing sources shall comply with the requirements of this regulation, and exhibit A shall no longer be applicable.

I.B.2.f. On or before October 30, 1990, all existing sources located in what was previously designated as the 1-hour ozone nonattainment or attainment maintenance area shall submit to the Division a report containing the following:

I.B.2.f.(i) A list of sources of volatile organic compound emissions located at the stationary source. The list shall include a description, potential emissions, and actual emissions of each source.

I.B.2.f.(ii) Identification of each source subject to a Division Reasonably Available Control Technology (RACT) determination, and when a request for that determination will be made.

I.B.2.f.(iii) The owner or operator's expected RACT for each source and a description of how compliance will be achieved. If a source is subject to RACT requirements as stated in previous versions of this regulation, the report need only specify how compliance will be achieved for any revised provisions of the regulation.

I.B.2.g. On or before October 30, 1991, all existing sources shall update and submit the report required under Subparagraph b. above. The updated report shall describe in detail all actions taken to comply with the RACT requirements, and when those actions were taken.

I.B.2.h. This Section I.B.2 does not apply to oil and gas operations subject to Section XII, or stationary and portable engines subject to Section XVI.

I.C. Once a source subject to this regulation exceeds an applicable threshold limit, the requirements of this regulation are irrevocably effective unless the source obtains a federally enforceable permit limiting emissions to levels below the threshold limit by restricting production capacity or hours of operation.

I.D. The owner or operator of a source not required to obtain a permit by provisions of law other than this section may apply for and shall be required to accept a permit as a condition of avoiding RACT requirements. Such permits shall contain only those conditions necessary to ensure the enforcement of the production capacity or hours of operation.

I.E. Materials incorporated by reference in this regulation are available for public inspection during regular business hours at the Commission's Office at 4300 Cherry Creek Drive South, Denver, Colorado. The regulation incorporates the materials as they exist at the date of the promulgation of this regulation and does not include later amendments to or editions of the incorporated materials.

## **II. General Provisions**

### **II.A. Definitions**

II.A.1. "8-Hour Ozone Control Area" means the Counties of Adams, Arapahoe, Boulder (includes part of Rocky Mountain National Park), Douglas, and Jefferson; the Cities and Counties of Denver and Broomfield; and the following portions of the Counties of Larimer and Weld:

II.A.1.a. For Larimer County (includes part of Rocky Mountain National Park), that portion of the county that lies south of a line described as follows: Beginning at a point on Larimer County's eastern boundary and Weld County's western boundary intersected by 40 degrees, 42 minutes, and 47.1 seconds north latitude, proceed west to a point defined by the intersection of 40 degrees, 42 minutes, 47.1 seconds north latitude and 105 degrees, 29 minutes, and 40.0 seconds west longitude, thence proceed south on 105 degrees, 29 minutes, 40.0 seconds west longitude to the intersection with 40 degrees, 33 minutes and 17.4 seconds north

latitude, thence proceed west on 40 degrees, 33 minutes, 17.4 seconds north latitude until this line intersects Larimer County's western boundary and Grand County's eastern boundary.

- II.A.1.b. For Weld County, that portion of the county that lies south of a line described as follows: Beginning at a point on Weld County's eastern boundary and Logan County's western boundary intersected by 40 degrees, 42 minutes, 47.1 seconds north latitude, proceed west on 40 degrees, 42 minutes, 47.1 seconds north latitude until this line intersects Weld County's western boundary and Larimer County's eastern boundary.
- II.A.2. "Denver 1-Hour Ozone Attainment/Maintenance Area" means the Counties of Jefferson and Douglas, the Cities and Counties of Denver and Broomfield, Boulder County (excluding Rocky Mountain National Park), Adams County west of Kiowa Creek, and Arapahoe County west of Kiowa Creek.
- II.A.3. "Capture System" means the equipment used to contain, capture, or transport a pollutant to a control device.
- II.A.4. "Capture System Efficiency (vapor gathering system efficiency)" means the percent by weight of VOC emitted by an operation subject to this regulation, which is captured by the capture system and sent to the control device; i.e.,  $(\text{mass flow of VOC captured})/(\text{mass flow of VOC emitted by the operation}) \times 100\%$ .
- II.A.5. "Carbon Adsorption System" means a device containing adsorbent material, an inlet and outlet for exhaust gases and a system to regenerate the saturated adsorbent.
- II.A.6. "Condenser" means any heat transfer device used to liquify vapors by removing their latent heats of vaporization. Such devices include, but are not limited to, shell and tube, coil, surface, or contact condensers.
- II.A.7. "Control Device" means a carbon adsorber, refrigeration system, condenser, flare, firebox or other device, which will reduce the concentration of VOC in a gas stream by adsorption, combustion, condensation, or other means of removal.
- II.A.8. "Control Device Efficiency" means the percent removal by weight of VOC by a control device; i.e.,  $(\text{mass flow of VOC into control device} - \text{mass flow of VOC out of control device})/(\text{mass flow of VOC into control device}) \times 100\%$ .
- II.A.9. "Gasoline" means a petroleum distillate having a Reid vapor pressure between 208 and 1040 torr (4-20 psi), which is used as fuel for internal combustion engines.
- II.A.10. "Highly Volatile Organic Compound" is defined as a Volatile Organic Compound or mixture of such compounds with a true vapor pressure in excess of 570 torr (11 Psia) at 20 C.
- II.A.11. "Organic Material" means a chemical compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.
- II.A.12. (State Only) "Ozone Nonattainment Area" means any area designated as not in attainment with the ozone National Ambient Air Quality Standard as determined by the Environmental Protection Agency.

- II.A.13. "Petroleum Refinery" means any facility engaged in producing gasoline, aromatics, kerosene, distillate fuel oils, residual fuel oils, lubricants, asphalt, or other products through distillation of petroleum or through redistillation, cracking, rearrangement or reforming of unfinished petroleum derivatives.
- II.A.14. "Reid Vapor Pressure" means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases as determined by the American Society for Testing and Materials, Part 17, 1973, D-323-72 (Reapproved 1977).
- II.A.15. "True Vapor Pressure" means the equilibrium partial pressure exerted by petroleum (or other) liquid. This may be determined by the methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss from Floating Roof Tanks," 1962.
- II.A.16. "Vapor Recovery System" means a system that prevents release to the atmosphere of organic compounds emitted during the operation of any transfer, storage, or processing equipment.
- II.A.17. "Volatile Organic Compound (VOC)" means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, except those listed in Section II.B. as having negligible photochemical reactivity. VOC may be measured by a reference method, an equivalent method, an alternative method, or by procedures specified under 40 CFR Part 60. A reference method, an equivalent method, or an alternative method, however, may also measure nonreactive organic compounds. In such cases, an owner or operator may exclude the compounds listed in Section II.B. when determining compliance with a standard if the amount of such compounds is accurately quantified, and such exclusion is approved by the Division. As a precondition to excluding such compounds as VOC, or at any time thereafter, the Division may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the satisfaction of the Division, the amount of negligible-reactive compounds in the source's emissions.

## II.B. Exemptions

Emissions of the organic compounds listed as having negligible photochemical reactivity in the common provisions definition of Negligibly Reactive Volatile Organic Compound are exempt from the provisions of this regulation.

## II.C. General Emission Limitation

### II.C.1. (State Only) Existing Sources Located in any Ozone Nonattainment Area or Attainment Maintenance Area

II.C.1.a. All existing sources shall comply with the requirements set forth in this regulation.

II.C.1.a.(i) Existing sources of VOC which are not subject to specific emission limitations set forth in this regulation, and which have the potential to emit 100 tons per year or more of VOC, shall utilize Reasonably Available Control Technology (RACT).

II.C.1.a.(ii) The potential to emit of such sources shall be based on design capacity or maximum production rate, whichever is greater, 8760 hours/year operation, and before add-on controls.

II.C.1.a.(iii) Owners or operators of such sources with potential emissions of 100 tons per year or more, but with actual emissions less than 100 tons per year may obtain a federally enforceable permit limiting emissions to actual rates by restricting production capacity or hours of operation, thus avoiding RACT requirements.

The owner or operator of a source not required to obtain a permit by provisions of law other than this section may apply for and shall be required to accept a permit as a condition of avoiding RACT requirements. Such permits shall contain only those conditions necessary to ensure the enforcement of the production capacity or hours of operation.

II.C.1.a.(iv) Such sources with potential emissions of 100 tons per year or more but with actual emissions of less than 50 tons per year, on a rolling 12-month total, may avoid RACT and permit requirements if the following requirements are met:

II.C.1.a.(iv)(A) The owner or operator shall submit revised Air Pollutant Emission Notices (APENs) by April 1 of each year, which demonstrate that the 50 tons per year threshold has not been exceeded.

II.C.1.a.(iv)(B) The owner or operator shall maintain records on site which include monthly VOC use and monthly VOC emissions. The records shall include calculation of total emissions for each rolling 12-month period. The records shall be made available to the Division for inspection upon request.

II.C.1.a.(v) (State Only) Existing sources that are modified – undergo any physical change, or changed in the method of operation of a stationary source which increase VOC or NOx emissions – on or after March 30, 2008, shall utilize RACT control technologies pursuant to Regulation Number 7 and Regulation Number 3, Part B, Section III.D.2. upon recommencing operation.

II.C.1.b. Provided however, that no existing source of VOC emissions employing emission controls on or within the six-month period preceding the effective date of this regulation may reduce its level of control of VOC emissions below that level of control actually achieved, even though such source may otherwise be subject to less stringent control requirements, except that no existing source shall be required to control emissions to an extent greater than that level of control which RACT would achieve.

II.C.1.c. (State Only) Existing sources with potential emissions equal to or greater than 100 tons per year of volatile organic compound emissions shall submit a permit modification application that includes a revised APEN (or APENs) and a RACT analysis, to the Division, as follows:

II.C.1.c.(i) (State Only) By October 30, 1991 if located in what was previously designated as the Denver 1-hour ozone nonattainment or attainment maintenance area; or

II.C.1.c.(ii) (State Only) By April 30, 2009 or within one year after the date on which the area is first designated as being in nonattainment for ozone, whichever comes later, if they are located in the 8-hour Ozone Control Area and outside of the Denver 1-hour ozone nonattainment or attainment maintenance area.

II.C.1.d. (State Only) Existing sources shall utilize RACT pursuant to Regulation Number 7 and Regulation Number 3, Part B, Section III.D.2., by whichever date comes later:

II.C.1.d.(i) (State Only) October 30, 1991, if they are located in what was previously designated as the Denver 1-hour ozone nonattainment or attainment maintenance area;

II.C.1.d.(ii) (State Only) November 21, 2011, if they are located in the 8-hour Ozone Control Area, and outside of the Denver 1-hour ozone nonattainment or attainment maintenance area;

II.C.1.d.(iii) (State Only) Three years after the date on which the area is first designated as being in nonattainment for ozone; or

II.C.1.d.(iv) (State Only) Two years after Division determination of case-by-case RACT pursuant to this Section II.C.1. The Division shall be deemed to have approved the RACT analysis for purposes of this Section II.C.1.d.(iv) if it does not object after eighteen months from having received a complete permit application.

#### II.C.2. New Sources

All new sources shall utilize controls representing RACT, pursuant to Regulation Number 7 and Regulation Number 3, Part B, Section III.D., upon commencement of operation.

II.D. REPEALED

II.E. REPEALED

#### II.F. Provisions for Specific Processes

II.F.1. The Gates Rubber Company Provision - REPEALED

### III. General Requirements for Storage and Transfer of Volatile Organic Compounds

#### III.A. Maintenance and Operation of Storage Tanks and Related Equipment

All storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves shall be maintained and operated to prevent detectable vapor loss except when opened, actuated, or used for necessary and proper activities (e.g. maintenance). Such opening, actuation, or use shall be limited so as to minimize vapor loss.

Detectable vapor loss shall be determined visually, by touch, by presence of odor, or using a portable hydrocarbon analyzer. When an analyzer is used, detectable vapor loss means a VOC concentration exceeding 10,000 ppm. Testing and monitoring shall be conducted as in Section VIII.C.3.

#### III.B. Transfer (excluding Petroleum Liquids)

Except as otherwise provided in this regulation, all volatile organic compounds transferred to any tank, container, or vehicle compartment with a capacity exceeding 212 liters (56 gallons), shall be transferred using submerged or bottom filling equipment. For top loading, the fill tube shall reach within six inches of the bottom of the tank compartment. For bottom-fill operations, the inlet shall be flush with the tank bottom.

III.C. Beer production and associated beer container storage and transfer operations involving volatile organic compounds with a true vapor pressure of less than 1.5 PSIA actual conditions are exempt from the provisions of Section III.B, above.

#### **IV. Storage of Highly Volatile Organic Compounds**

IV.A. Highly volatile organic compounds shall be stored:

IV.A.1. In a pressure tank which is at all times capable of maintaining working pressures sufficient to prevent vapor loss to the ambient air; or

IV.A.2. With methods and/or equipment approved by the Division in writing pursuant to the request of the person owning or operating the storage facility.

IV.B. Vapor loss shall be determined visually, by presence of frost or condensation at the point of leakage, or using a portable hydrocarbon analyzer. When an analyzer is used, vapor loss means a VOC concentration exceeding 10,000 ppm and testing and monitoring procedures shall be conducted as in Section VIII.C.3.

#### **V. Disposal of Volatile Organic Compounds**

V.A. No person shall dispose of volatile organic compounds by evaporation or spillage unless RACT is utilized.

V.B. No owner or operator of a bulk gasoline terminal, bulk gasoline plant, or gasoline dispensing facility as defined in Section VI.C.2., VI.C.3. and XV.A.3., shall permit gasoline to be intentionally spilled, discarded in sewers, stored in open containers, or disposed of in any other manner that would result in evaporation.

#### **VI. Storage and Transfer of Petroleum Liquid**

VI.A. General Requirements

VI.A.1. No person shall build, install, or permit the building or installation of any rotating pump or compressor handling any type of petroleum liquid unless said pump or compressor is equipped with mechanical seals or other equipment of equal efficiency. If reciprocating-type pumps and compressors are used, they shall be equipped with packing glands properly installed, in good working order, and properly maintained so that no detectable emissions occur from the drain recovery systems.

VI.A.2. Definitions

For the purpose of this section, the following definitions apply:

VI.A.2.a. Repealed.

VI.A.2.b. "Crude Oil" means a naturally occurring mixture which consists of hydrocarbons, sulfur, nitrogen or oxygen derivatives of hydrocarbons, and which is a liquid at standard conditions.

- VI.A.2.c. "Custody Transfer" means the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.
- VI.A.2.d. "EFR Tank" means a storage vessel having an external floating roof.
- VI.A.2.e. "External Floating Roof" means a storage vessel cover in an open top tank consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.
- VI.A.2.f. "Liquid-Mounted Seal" means a primary seal mounted in continuous contact with the contained liquid and which occupies an annular space between the inner tank wall and the perimeter of the floating roof.
- VI.A.2.g. "Petroleum Liquid" means crude oil, condensate and any finished or intermediate product manufactured or extracted in a petroleum refinery.
- VI.A.2.h. "Shoe Seal" means a primary seal employing a metallic band (called a shoe) which is held against the vertical inner-wall of the tank, concentric with the perimeter of the floating roof.
- VI.A.2.i. "Vapor Balance System" means a combination of pipes or hoses that create a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.
- VI.A.2.j. "Vapor-Mounted Seal" means a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the liquid surface, the floating roof, and the tank wall (thus excluding shoe seals).
- VI.A.2.k. "Waxy, Heavy Pour Crude Oil" means a crude oil with a pour point of 10°C (50°F) or higher as determined by the American Society for Testing and Materials Standard D97-66, "Test for Pour Point of Petroleum Oils."

## VI.B. Storage of Petroleum Liquid

### VI.B.1. Exemptions

- VI.B.1.a. Tanks or other containers used to store the following liquids are exempt from the provisions of Subparagraphs VI.B.2., and 3. below:
- VI.B.1.a.(i) Diesel Fuels 1-D, 2-D, and 4-D as defined in ASTM D975-78.
  - VI.B.1.a.(ii) Fuel Oils #1, #2, #3, #4, and #5, as defined in ASTM D396-78.
  - VI.B.1.a.(iii) Gas Turbine Fuels 1-GT through 4-GT as defined in ASTM D2880-78.
- VI.B.1.b. The following underground storage facilities are exempt from Subpart VI.B.2. below:

VI.B.1.b.(i) Underground tanks if the annual sum total of the volume of liquid removed from the tank plus the sum of the volume of liquid added to it does not exceed twice the operational volume of the tank (i.e., a maximum of one turnover per year is allowed).

VI.B.1.b.(ii) Subsurface caverns or porous rock reservoirs.

VI.B.1.b.(iii) Horizontal underground tanks storing JP-4 Jet Fuel.

VI.B.2. Storage of petroleum liquid in tanks greater than 151,412 liters (40,000 gallons)

VI.B.2.a. Storage of petroleum liquid in fixed-roof tanks.

VI.B.2.a.(i) The owner or operator of a fixed-roof tank used for storage of petroleum liquids which have a true vapor pressure greater than 33.6 torr (0.65 psia) at 20°C (or, alternatively, a Reid vapor pressure greater than 1.30 pounds - (67.2 torr) but not greater than 570 torr (11.0 psia) at 20°C, and which are stored in any tank or other container of more than 151,412 liters (40,000 gallons) shall ensure that the tank at all times meets the following conditions:

VI.B.2.a.(i)(A) The tank has been equipped with a pontoon-type, or double-deck type, floating roof or an internal floating cover which rests on the surface of the liquid contents and which is equipped with a closure seal or seals to close the space between the edge of the floating roof (or cover) and tank walls; or

VI.B.2.a.(i)(B) The tank has been equipped with a vapor gathering system capable of collecting the petroleum liquid vapors discharged, together with a vapor recovery or disposal system capable of processing such vapors so as to prevent their emission into the atmosphere.

VI.B.2.a.(i)(C) Control devices shall meet the applicable requirements, including recordkeeping, of Subsections IX.A.3.a,b,c, and e, and IX. A.8.a and b.

VI.B.2.a.(i)(D) The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VI.B.2.a.(i)(E) The owner or operator shall maintain records for at least two years of the type, average monthly storage temperature, and true vapor pressure of all petroleum liquids stored in tanks not equipped with an internal floating roof or cover or other control pursuant to Regulation 7.VI.B.2.a.(i)(A) or (B) or 7.II.D.

VI.B.2.a.(ii) No owner or operator of a fixed-roof tank equipped with an internal floating roof or cover shall permit the use of such tank unless:

VI.B.2.a.(ii)(A) The tank is maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials; and

VI.B.2.a.(ii)(B) All openings, except stub drains, are equipped with covers, lids, or seals such that:

VI.B.2.a.(ii)(B)(1) The cover, lid, or seal is in the closed position at all times except when in actual use;

VI.B.2.a.(ii)(B)(2) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;

VI.B.2.a.(ii)(B)(3) and Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

VI.B.2.a.(iii) The operator of a fixed-roof tank equipped with an internal floating roof shall:

VI.B.2.a.(iii)(A) Perform a routine inspection through the tank roof hatches at least once every six months;

VI.B.2.a.(iii)(A)(1) During the routine inspection, the operator shall measure for detectable vapor loss inside the hatch. Detectable vapor loss means a VOC concentration exceeding 10,000 ppm, using a portable hydrocarbon analyzer.

VI.B.2.a.(iii)(B) Perform a complete inspection of the cover and seal whenever the tank is out of service, whenever the routine inspection required in subclause (A) above reveals detectable vapor loss, and at least once every ten years, and shall notify the Division in writing before such an inspection.

VI.B.2.a.(iii)(C) Ensure during inspections that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials; that the cover is floating uniformly on or above the liquid surface; that there are no visible defects in the surface of the cover or liquid accumulated on the cover; and that the seal is uniformly in place around the circumference of the cover between the cover and the tank wall. If these items are not met, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Division in writing. Such a request must document that alternative storage capacity is unavailable and specify a schedule of actions the owner or operator will take that will assure that the items will be repaired or the vessel will be emptied as soon as possible;

VI.B.2.a.(iii)(D) Maintain records for at least two years of the results of all inspections.

VI.B.2.b. Above ground storage tanks used for the storage of petroleum liquid shall have all external surfaces coated with a material which has a reflectivity for

solar radiation of 0.7 or more. Methods A or B of ASTM E424 shall be used to determine reflectivity. Alternatively, any untinted white paint may be used which is specified by the manufacturer for such use.

This provision shall not apply to written symbols or logograms applied to the external surface of the container for purposes of identification provided such symbols do not cover more than 20% of the exposed top and side surface area of the container or more than 18.6 square meters (200 square feet), whichever is less.

VI.B.2.c.           Seals on External Floating Roof Tanks

VI.B.2.c.(i)       General Provisions

VI.B.2.c.(i)(A)   Applicability

This section applies to all petroleum liquid storage vessels equipped with external floating roofs, having capacities greater than 150,000 liters (40,000 gallons) that are located in ozone nonattainment areas.

VI.B.2.c.(i)(B)   Exemptions

VI.B.2.c.(i)(B)(1)   Total Exemption

The following categories of EFR tanks are exempt from the requirement of Subparagraph VI.B.2.c., except for the applicable recordkeeping requirements of Subparagraph VI.B.2.c (ii)(C).

VI.B.2.c.(i)(B)(1)(a)   EFR tanks which store any material whose true vapor pressure as stored never exceeds 67 torr (1.3 psia).

VI.B.2.c.(i)(B)(1)(b)   Tanks less than 1,600,000 liters (10,000 barrels) which are used to store crude oil and condensate prior to custody transfer.

VI.B.2.c.(i)(B)(2)   Limited Exemptions

The following are exempt from both secondary seal and secondary seal inspection requirements but shall meet the equipment/procedure provisions in Subclause (ii)(A), the semi-annual inspection provisions of Subclause (ii)(B), and the record keeping provisions of Subclause (ii)(C).

VI.B.2.c.(i)(B)(2)(a)   Those tanks storing petroleum liquid between 67 and 207 torr (1.3 to 4.0 psia) maximum true vapor pressure (as stored) which are of welded construction and which have one of the following primary seals:

VI.B.2.c.(i)(B)(2)(a)(I)   metallic shoe seal

VI.B.2.c.(i)(B)(2)(a)(II)   liquid mounted, resilient seal

VI.B.2.c.(i)(B)(2)(a)(III)   liquid mounted, liquid filled seal

VI.B.2.c.(i)(B)(2)(b) Any tank storing waxy, heavy-pour crude oil.

VI.B.2.c.(ii) General Requirements

VI.B.2.c.(ii)(A) An operator of an EFR tank storing petroleum liquids with true vapor pressure (as stored) above 67 torr (1.3 psia) shall equip the tank as follows and observe the following procedures:

VI.B.2.c.(ii)(A)(1) Equipment

VI.B.2.c.(ii)(A)(1)(a) Drains: roof drains which are designed to empty directly into the stored product shall be provided with slotted-membrane fabric covers or equivalent covers which cover at least 90 percent of the area of the opening.

VI.B.2.c.(ii)(A)(1)(b) Openings: except for automatic bleeder vents, rim space vents, and leg sleeves, all openings shall be equipped with:

VI.B.2.c.(ii)(A)(1)(b)(I) Projections into the tank which remain below the liquid surface at all times; and

VI.B.2.c.(ii)(A)(1)(b)(II) Covers, seals, or lids.

VI.B.2.c.(ii)(A)(2) Procedures

VI.B.2.c.(ii)(A)(2)(a) Covers, seals and lids shall be kept closed except when the openings are in actual use.

VI.B.2.c.(ii)(A)(2)(b) Automatic bleeder vents shall be kept closed at all times except when the roof is floated off or landed on roof leg supports.

VI.B.2.c.(ii)(A)(2)(c) Rim vents shall be set to open at the manufacturer's recommended setting or, alternatively, only when the roof is being floated off the leg supports.

VI.B.2.c.(ii)(B) Inspections

The operator of an EFR tank subject to this Subparagraph (VI.B.2.c.) shall:

VI.B.2.c.(ii)(B)(1) Perform routine inspections at least once every six months in order to ensure compliance with Part (2) below. The inspections shall include a visual inspection of the secondary seal gap if equipped with a secondary seal.

VI.B.2.c.(ii)(B)(2) Ensure that all seal closure devices meet the following requirements:

VI.B.2.c.(ii)(B)(2)(a) There are no visible holes, tears, or other openings in the seal(s) or seal fabric; and

VI.B.2.c.(ii)(B)(2)(b) The seal(s) are intact and uniformly in place around the circumference of the floating roof and the tank wall.

VI.B.2.c.(ii)(C) Records

VI.B.2.c.(ii)(C)(1) Operators shall:

VI.B.2.c.(ii)(C)(1)(a) Maintain records of the average monthly storage temperature, the Reid vapor pressure of the liquid and the type of liquid stored for all EFR tanks lacking secondary seals and receiving petroleum liquids with a true vapor pressure of 1.0 psi (7.0kPa) or greater; and

VI.B.2.c.(ii)(C)(1)(b) Maintain records of the results of the inspections required herein.

VI.B.2.c.(ii)(C)(2) Copies of all records specified by this Subclause (C) shall be retained by the operator for a minimum of two years after the date on which the record was made.

VI.B.2.c.(iii) Secondary Seal Requirements

VI.B.2.c.(iii)(A) General

No owner or operator of an EFR tank (storing petroleum liquids) not specifically exempted in Subsection VI.B.2.c.(i)(B) above shall store that petroleum liquid unless such vessel is equipped with a continuous secondary seal extending from the rim of the floating roof to the tank wall (i.e., a rim-mounted secondary seal).

VI.B.2.c.(iii)(B) Vapor-Mounted Seals

For EFR tanks required to have a secondary seal and which have a vapor-mounted primary seal:

VI.B.2.c.(iii)(B)(1) An annual inspection shall be made of the total gap area between the secondary seal and the wall of the tank in accordance with the method in (3) below.

VI.B.2.c.(iii)(B)(2) This total gap area shall not exceed 21.2 cm<sup>2</sup>/meter diameter (1.0 in<sup>2</sup>/ft. diameter).

VI.B.2.c.(iii)(B)(3) Method to determine gap area:

VI.B.2.c.(iii)(B)(3)(a) Physically measure the length and width of all gaps around the entire circumference of the secondary seal in each place where a 0.32 cm (1/8 in.) uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and the tank wall; and,

VI.B.2.c.(iii)(B)(3)(b) Sum the area of the individual gaps.

VI.B.3. Storage of petroleum liquid in tanks of or less than 151,412 liters (40,000 gallons) capacity

VI.B.3.a. Tanks or containers used to store liquids with true vapor pressure at 20°C of less than 78 torr (1.5 psia) or greater than 570 torr (11.0 psia) at 20°C are exempt from the provisions of this Paragraph VI.B.3.

VI.B.3.b. The owner or operator of storage tanks at a gasoline dispensing facility (service station) or other facility not addressed in Subsections VI. C.2 OR VI.C.3, which receives and stores petroleum liquid, shall not allow the transfer of petroleum liquid from any delivery vessel into any tank unless the tank is equipped with a submerged fill pipe and the vapors displaced from the storage tank during filling are processed by a vapor control system, if the tank:

VI.B.3.b.(i) Has a rated manufacturer's capacity of 2,082 liters (550 gallons) or more and was installed after November 7, 1973, (except for storage tanks below 550 gallon capacity used exclusively for agricultural use; however, these must have a submerged fill pipe), or

VI.B.3.b.(ii) Has a rated manufacturer's capacity of 7,571 liters (2,000 gallons) or more and was installed before November 7, 1973.

VI.B.3.b.(iii) A vapor balance system shall be deemed "approved" if its design and operation are in accordance with the applicable provisions of Appendices A and B.

VI.B.3.c. Tanks equipped with a submerged fill pipe shall meet the specifications of Appendix B.

VI.B.3.d. The vapor control system shall include one or more of the following:

VI.B.3.d.(i) A vapor-tight line from the storage tank to delivery vessel (i.e. an approved control system).

VI.B.3.d.(ii) A refrigerator-condensation system or equivalent designed to recover at least 90 percent by weight of the organic compounds in the displaced vapor.

VI.B.3.e. The owner or operator shall ensure that operating procedures are used so that gasoline cannot be transferred into the tank unless the vapor control system is in use.

VI.B.3.f. The vapor balance system shall meet the specifications of Appendix B.

VI.B.3.g. The vapor balance system and the vapor control system shall meet the requirements of Section XV.

VI.B.3.h. Control devices shall meet the applicable requirements, including recordkeeping, of Subsections IX.A.3.a,b,c, and e, and IX.A.8.a and b.

VI.B.3.i. The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

## VI.C. Transfer of Petroleum Liquid

### VI.C.1. Exemptions

Transfer operations involving petroleum liquid with true vapor pressures at 20°C of less than 78 torr (1.5 psia) or greater than 570 torr (11.0 psia) shall be exempt from the provisions of this Subsection C.

### VI.C.2. Loading Facilities Classified as Terminals

VI.C.2.a. A terminal is defined as a petroleum liquid storage and distribution facility that has an average daily throughput of more than 76,000 liters of gasoline (20,000 gallons), which is loaded directly into transport vehicles. A rolling, 30-day average of throughput shall be used to determine the applicability of this Subsection VI.C.2.

VI.C.2.b. The owner or operator of a terminal subject to this subsection shall equip the terminal with proper loading equipment and shall follow the loading procedures listed below:

VI.C.2.b.(i) Install dry-break loading couplings to prevent petroleum liquid loss during uncoupling from vehicles.

VI.C.2.b.(ii) Install a vapor collection and disposal system which gathers vapor transferred from vehicles being loaded. The system shall include devices to prevent the release of vapor from vapor recovery hoses not in use.

VI.C.2.b.(iii) Use operating procedures to ensure that petroleum liquid cannot be transferred unless the vapor collection equipment is in use.

VI.C.2.b.(iv) Provide for the prevention of overfilling of transport vehicles with loading pump shut-offs, set stop meters, or comparable equipment.

VI.C.2.b.(v) Operate all recovery and disposal equipment at a back pressure less than the pressure relief valve setting of transport vehicles.

VI.C.2.b.(vi) Prevent the release of petroleum liquid on the ground from transport vehicles. Provision shall be made to remove any undelivered petroleum liquid with closed drainage devices.

VI.C.2.b.(vii) Maintain and operate final recovery and disposal equipment or devices in the vapor control system (i.e., control devices) so as to emit no more than 80 milligrams of volatile organic compounds per liter of gasoline being loaded. Such disposal devices shall be approved by the Division.

VI.C.2.b.(viii) Prevent loading of petroleum liquid into transport vehicles which do not have valid leak-tight certification as required in Section VI.D. No truck shall be loaded unless a valid certification sticker is displayed, or a certification letter is carried in the truck.

VI.C.2.b.(ix) Follow all control procedures to prevent leaks as specified in Section XV.

VI.C.2.c. Control devices shall meet the applicable requirements, including recordkeeping of Subsections IX.A.3.a,b,c, and e, and IX.A.8.a and b.

VI.C.2.d. The applicable methods of 40 CFR 60. 503, or EPA reference methods 1 through 4, 25A, and 25B of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VI.C.2.e. The method set forth in Appendix A of EPA-450/2-77-026, "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals" shall be used to test emission points other than control devices.

### VI.C.3. Loading Facilities Classified as Bulk Plants

VI.C.3.a. A bulk plant is defined as a petroleum liquid storage and distribution facility that has an average daily throughput of 76,000 liters of gasoline (20,000 gallons) or less, which is loaded directly into transport trucks. (As used herein, "bulk plant" does not include service stations nor separate operations within petroleum liquid distribution facilities which pump only into fuel tanks fueling motor vehicles. Both such operations are regulated by Paragraph VI.B.3. of this Regulation). A rolling 30-day average of throughput shall be used to determine the applicability of this regulation.

VI.C.3.b. The owner or operator of a bulk storage plant subject to this subsection shall install an approved vapor balance system to return vapors to the incoming transport trucks during the filling of tanks controlled under Paragraph VI.B.3. (A vapor balance system shall be deemed "approved" if its design and operation is in accord with the provisions of Appendix C of this Regulation.)

VI.C.3.c. The owner or operator of a bulk plant which serves storage tanks which are required to collect and recover vapor as prescribed in Paragraph VI.B.3. shall:

VI.C.3.c.(i) Install and operate vapor collection and return equipment on any transport vehicles used to deliver to controlled tanks, and

VI.C.3.c.(ii) Install and operate vapor collection and return equipment at loading facilities to collect vapors during loading of tank compartments of outbound transport trucks and return these vapors to the bulk plant storage tanks, using an approved vapor balance system.

VI.C.3.c.(iii) Assure that transport trucks and loading facilities conform to the applicable provisions of C.2. and C.4. of this Section VI.

VI.C.3.d. The owner or operator of a bulk plant which serves only storage tanks exempted from the provisions of Subparagraph VI.B.3.b. by reason of their small size or location in an attainment area shall load outbound transport trucks using equipment that provides for top loading of the petroleum liquid into the vehicle tank compartments through an extended fill tube which reaches within 15.24 cm (6 in.) of the bottom of the tank compartment.

VI.C.3.e. The owner or operator of a bulk plant subject to this subsection shall ensure that petroleum liquid cannot be transferred unless the vapor collection equipment is in use.

VI.C.3.f. The owner or operator of a bulk plant subject to this subsection shall follow all procedures to prevent leaks as specified in Section XV.

#### VI.C.4. Transport Vehicles

VI.C.4.a. Rail cars shall be loaded only at facilities which allow for the following:

VI.C.4.a.(i) A submerged fill pipe which reaches within 15.24 cm (6 in.) of the bottom of the tank.

VI.C.4.a.(ii) Vapor collection and/or disposal equipment designated and operated to recover vapors displaced during the loading of the rail car.

VI.C.4.a.(iii) A vapor-tight seal around the tank car hatch and the loading equipment.

VI.C.4.b. The owner or operator of petroleum transport trucks which serve locations required to be equipped with vapor recovery equipment shall load only at facilities capable of disposing of collected vapors. The owner or operator shall assure that such vehicles possess the proper equipment and that work practices are followed so that:

VI.C.4.b.(i) Dry-break loading and unloading nozzles are used and are compatible with those required at loading facilities.

VI.C.4.b.(ii) Vapor recovery hoses are connected at all times during unloading or loading of petroleum distillate.

VI.C.4.b.(iii) Transport trailers and vehicle tanks are operated and maintained to prevent detectable hydrocarbon vapor loss during loading, transport and delivery.

VI.C.4.b.(iv) Compartment dome lids are closed and locked during transfers of petroleum liquid. Such lids may be opened for the purpose of certifying the accuracy of a delivery only prior to and after such delivery.

VI.C.4.b.(v) Hoses, couplings, and valves are maintained to prevent dripping, leaking, or other liquid or vapor loss during loading or unloading.

#### VI.D. Control of Volatile Organic Compound Leaks from Gasoline Transport Trucks

##### VI.D.1. General Provisions

VI.D.1.a. Applicability

This subsection is applicable to all gasoline transport trucks equipped for gasoline vapor collection which receive or dispense gasoline at terminals, bulk plants, or gasoline dispensing facilities located in the nonattainment areas.

VI.D.1.b. Definitions

For the purpose of this subsection, the following definitions apply:

VI.D.1.b.(i) "Gasoline Transport Truck" means a tank truck or tank trailer equipped with a storage tank and used for the transport of gasoline from

sources of supply to stationary storage tanks of gasoline dispensing facilities (e.g., service stations), bulk gasoline plants, or gasoline terminals.

VI.D.1.b.(ii) "Vapor Collection System" means a vapor transport system which uses direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into a vessel being unloaded or into a vapor control system or vapor holding tank.

VI.D.1.b.(iii) "Vapor Control System" means a system that is designed to control the release of volatile organic compounds displaced from a vessel during transfer of gasoline.

#### VI.D.2. Provisions for Specific Processes

VI.D.2.a. No terminal operator, when monitoring the gasoline loading operation and no owner or operator of a gasoline transport truck shall allow a gasoline transport truck subject to this Subsection VI.D. to be filled with a VOC with Reid Vapor Pressure of 4.0 or greater unless the gasoline tank truck:

VI.D.2.a.(i) Is tested annually according to the test procedure referenced in Appendix E. Testing shall be completed prior to the onset of the summer ozone season (test October through April). In addition, the visual inspection detailed in Appendix E, Part B, shall be performed at least once every six months. Trucks which have not been previously certified (new gasoline transport trucks) may be tested May through September as set forth in VI.D.4.d.(iv).

VI.D.2.a.(ii) Sustains a combined absolute pressure change of no more than 5.6 torr (3 inches of H<sub>2</sub>O) in five-minute test periods when pressurized to a gauge pressure of 33.6 torr (18 inches of H<sub>2</sub>O), then evacuated to a gauge pressure of minus 11.2 torr (minus 6 inches of H<sub>2</sub>O), during the testing required in Subparagraph a.(i), above (i.e., the sum of the absolute pressure change determined by the pressure test plus the absolute pressure change determined by the vacuum test shall not exceed 3 inches of water); and

VI.D.2.a.(ii)(A) Sustains a leak rate of no more than 5.6 torr (3 inches H<sub>2</sub>O) in five minutes when the internal vapor valves are tested according to procedures in Part E., Appendix E.

VI.D.2.a.(ii)(b) Passes a retest within twenty (20) days if it does not meet the criteria of a.(ii) and (iii) above.

VI.D.2.a.(ii)(C) At all times carries an unexpired certification sticker (pursuant to Subparagraphs D.4.c. and d.).

#### VI.D.2.b. Monitoring

VI.D.2.b.(i) The Division may, at any time, monitor a gasoline tank truck vapor collection system, or vapor control system, by the method referenced in Subparagraph D.3.c to confirm continued compliance with Subparagraph 2.a. above.

VI.D.2.b.(ii) Within fifteen (15) days after an exceedance is detected a tank shall pass:

VI.D.2.b.(ii)(A) A pressure/vacuum test per Appendix E; or

VI.D.2.b.(ii)(B) A test with combustible gas detector using procedures referenced in Subparagraph 3.c such that no leak over 60% of the propane lower explosive limit (LEL) exists.

#### VI.D.3. Testing and Monitoring

VI.D.3.a. The owner or operator of a gasoline transport truck shall at their own expense, demonstrate compliance with Paragraph 2, by methods of Appendix E. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing or gasoline transport truck maintenance.

VI.D.3.b. The owner or operator of a gasoline transport truck subject to this regulation must notify the Division of the date and location of a certification test at least forty-eight (48) hours before an anticipated test date, except that for the first truck tested by a given transport company and for the first test by a given testing facility, five (5) days notice must be given the Division: or alternatively, a designated individual within the Division may orally waive the above notice requirements and allow a shorter notice period before the test.

VI.D.3.c. Monitoring to confirm the continuing existence of leak tight conditions shall be consistent with the procedures described in Appendix B. of "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," EPA-450/2-78-051.

#### VI.D.4. Recordkeeping and Reporting

VI.D.4.a. The owner or operator of a gasoline transport truck subject to this Subsection D. shall maintain records of all certification testing and repairs. The records shall identify the gasoline transport truck, the date of the test or repairs and, if applicable, the type of repair and the date of retest. The written record shall include entries of any pre-test repairs, adjustments, or modifications. These shall also include the part name, number, and vendor name of any part removed and of any part installed. The records shall be maintained in legible, readily available form for at least two (2) years after the date the testing or repair was completed and shall be made available to the Division for inspection upon request.

VI.D.4.b. The records of certification tests required by Subparagraph 2.a. of this Subsection D. shall, as a minimum, contain all of the following entries:

VI.D.4.b.(i) The gasoline transport truck/tank identification number;

VI.D.4.b.(ii) The following data for each test trial:

VI.D.4.b.(ii)(A) The initial test pressure and the time of the reading.

VI.D.4.b.(ii)(B) The final test pressure and the time of the reading.

VI.D.4.b.(ii)(C) The initial test vacuum and the time of the reading.

VI.D.4.b.(ii)(D) The final test vacuum and the time of the reading.

VI.D.4.b.(ii)(E) For the vapor valve test, the initial test-pressure and time of reading; and

VI.D.4.b.(ii)(F) The final test-pressure and the time of the reading.

VI.D.4.b.(iii) The size of each of the compartments within the tank and whether such compartment was manifolded or was tested separately during pressure and vacuum tests.

VI.D.4.b.(iv) At the top of each report page shall be the company name and the date and location of the test results recorded on that page; and

VI.D.4.b.(v) Name and title of the person conducting the test.

VI.D.4.c. The owner or operator of a gasoline transport truck subject to this regulation must annually certify to the Division that the gasoline transport truck has been tested by an applicable method referenced in Paragraph 3. The application for certification shall include:

VI.D.4.c.(i) The name and address of the company and the name and telephone number of responsible company representative over whose signature the certification is submitted; and,

VI.D.4.c.(ii) A copy of the information recorded to comply with Subparagraph 4.b. above.

VI.D.4.d. Certification

VI.D.4.d.(i) Except as stated in Paragraphs (ii), (iii), and (iv) below, upon receipt of an application for certification that meets the above requirements, the Division shall issue a sticker and a letter of certification to be valid for 380 days after the most recent, successfully completed pressure/vacuum test, except that the expiration date shall not fall within the months of May through September. The certification shall be valid for less than 380 days if necessary to remain within the allowable test period of October through April.

VI.D.4.d.(ii) Owners or operators of gasoline transport trucks with certificates that expire May 1, 1990 (1991) through July 31, 1990 (1991) shall renew their certificates in March or April, 1990 (1991).

VI.D.4.d.(iii) Owners or operators of gasoline transport trucks with certificates that expire August 1, 1990 (1991) through September 30, 1990 (1991) shall renew their certificates in October or November 1990 (1991). Certificates which expire August 1, 1990 (1991) through September 30, 1990 (1991) shall be valid until November 30, 1990 (1991).

VI.D.4.d.(iv) Owners or operators of previously uncertified trucks (new gasoline transport trucks) subject to this subsection may obtain initial certification May 1 through September 30, if necessary. Certification for such trucks certified May 1 through July 31 shall be valid for 270 days. Certification for such trucks certified August 1 through September 30

shall be valid for 430 days. All expiration dates for such certificates shall fall within the allowable testing period of October through April.

VI.D.4.d.(v) This certification shall be revoked if monitoring detects an exceedance which is not corrected within fifteen (15) days of initial detection, or if the exceedance is judged so severe as to warrant immediate revocation (i.e., no seal is maintained during transfer).

VI.D.4.e. The certification letter shall be kept with the tank or at the transport company office at all times and shall be shown to Division personnel upon their request. Copies of all records and reports required by the provisions of this Subsection D. shall be made available to the Division upon oral or written request. The tank shall at all times prominently display a valid sticker when containing gasoline in the ozone nonattainment area.

## **VII. Crude Oil**

### **VII.A. General Exemptions**

VII.A.1. Storage tanks of 151,412 liters (40,000 gallons) or less used to store crude oil are exempt from the provisions of this section.

VII.A.2. Storage tanks with capacities of less than 1,590 cubic meters (10,000 barrels) used to store crude oil and condensate prior to lease custody transfer are exempt from the provisions of this Regulation Number 7 other than Sections XII and XVII.

### **VII.B. Equipment**

Pumps and compressors handling crude oil shall be subject to the provisions of Subsection VI.A.

### **VII.C. Storage**

Except as provided in VII.A.2. above, crude oil stored in tanks greater than 151,412 liters (40,000 gallons) shall be subject to the provisions of Subparagraph B.1.b. and Paragraph B.2. of Section VI.

## **VIII. Petroleum Processing and Refining**

### **VIII.A. Wastewater (Oil/Water) Separators**

#### **VIII.A.1. Definitions**

VIII.A.1.a. "Forebays" mean the primary sections of a wastewater separator.

VIII.A.1.b. "Wastewater (oil/water) separator" means any device or piece of equipment which utilizes the difference in density between oil and water to remove oil and associated chemicals from water, or any device, such as a flocculation tank, clarifier, etc., which removes petroleum derived compounds from wastewater.

VIII.A.2. The owner or operator of any wastewater (oil/water) separators at a petroleum refinery shall:

VIII.A.2.a. Equip the forebays and separator sections of the wastewater separators with one or more of the following emission control devices, ensuring that such device is properly installed, in good working order and properly maintained:

VIII.A.2.a.(i) a solid cover with all openings sealed and the liquid contents totally enclosed.

VIII.A.2.a.(ii) a pontoon-type or double-deck type floating roof, or internal floating cover. The floating roof or cover must rest on the surface of the liquid contents and be equipped with a closure seal or seals to close the space between the edge of the floating roof (or cover) and the wall(s) of the compartment.

VIII.A.2.a.(iii) a vapor recovery system consisting of a vapor gathering device capable of collecting the volatile organic compound vapors discharged and a vapor disposal device capable of processing such volatile organic vapors so as to prevent their emission into the atmosphere.

VIII.A.2.a.(iii)(A) Control devices shall meet the applicable requirements, including recordkeeping, of Subsections IX.A.3.a,b,c, and e, and IX.A.8.a and b.

VIII.A.2.a.(iii)(B) The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VIII.A.2.b. Equip all openings in covers, separators, and forebays with lids or seals such that the lids or seals are in the closed position at all times except when in actual use. Access for gauging and sampling shall be minimized.

## VIII.B. Emissions from Petroleum Refineries

### VIII.B.1. Definitions

VIII.B.1.a. "Firebox" means the chamber or compartment of a boiler or furnace in which materials are burned but does not mean the combustion chamber of an incinerator.

VIII.B.1.b. "Turnaround" means the procedure of shutting a refinery unit down after a run to do necessary maintenance and repair work and then putting the unit back on stream.

### VIII.B.2. Process unit turnarounds

The owner or operator of a petroleum refinery shall develop and submit to the Division for approval a detailed procedure for minimization of volatile organic compound emissions during process unit turnaround. As a minimum, the procedure shall provide for:

VIII.B.2.a. Depressurization venting of the process unit or vessel to a vapor recovery system, or to a flare or firebox which assures at least 90% combustion efficiency;

VIII.B.2.b. No emission of volatile organic compounds from a process unit or vessel until its internal pressure is 17.2 psia or less; and

VIII.B.2.c. Recordkeeping of the following items. Records shall be kept for at least two years and shall be made available to the Division for review upon request.

VIII.B.2.c.(i) Every date that each process unit is shut down,

VIII.B.2.c.(ii) The approximate vessel volatile organic compound concentration when the volatile organic compounds were first discharged to the atmosphere, and

VIII.B.2.c.(iii) The approximate total quantity of volatile organic compounds emitted to the atmosphere.

#### VIII.B.3. Venting of blowdown systems and safety pressure relief valves

All blowdown systems, process equipment vents, and pressure relief valves shall be vented to a vapor recovery system, or to a flare or firebox which assures at least 90% combustion efficiency.

#### VIII.B.4. Vacuum-Producing Systems

VIII.B.4.a. The owner or operator of any vacuum-producing system at a petroleum refinery shall not permit the emission of any noncondensable volatile organic compounds from the condensers, hot wells or accumulators of the system. This emission limit shall be achieved by:

VIII.B.4.a.(i) Venting the noncondensable vapors to a flare or other combustion device, or,

VIII.B.4.a.(ii) Compressing the vapors and adding them to the refinery fuel gas.

VIII.B.5. All sampling, testing, and measuring ports, hatches, and access openings shall be kept in a closed sealed position except during actual sampling or access.

VIII.B.6. Control devices shall meet the applicable requirements, including recordkeeping, of Subsections IX.A.3.a, b, c, and e, and IX.A.8.a and b.

VIII.B.7. The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60, shall be used to determine the efficiency of control devices.

### VIII.C. Petroleum Refinery Equipment Leaks

#### VIII.C.1. Definitions

For the purpose of this subsection, the following definitions apply:

VIII.C.1.a. "Accessible Component" means a component which can be reached, if necessary, by safe and proper use of portable ladders such as are acceptable to OSHA, as well as by built-in ladders and walkways. "Accessible" also includes components which can be reached by the safe use of an extension on the monitoring probe.

VIII.C.1.b. "Component" means any piece of equipment, which has the potential to leak volatile organic compounds when tested in the manner described in Paragraph 3. These sources include, but are not limited to, pumping seals, compressor seals, seal oil degassing vents, pipeline valves, flanges and other connections, pressure relief devices, process drains, and open ended pipes. Excluded from these sources are valves which are not externally regulated.

VIII.C.1.c. "Gaseous Service" means equipment which processes, transfers or contains a volatile organic compound or mixture of volatile organic compounds in the gaseous phase.

VIII.C.1.d. "In Heavy VOC Liquid Service" means that the piece of equipment is not in gaseous service or in light VOC liquid service.

VIII.C.1.e. "In Light Liquid VOC Service" Equipment is in light liquid service if the following conditions apply:

VIII.C.1.e.(i) the true vapor pressure of one or more of the components is greater than 0.3 kPa at 20°C. True vapor pressures may be obtained from standard reference texts or may be determined by ASTM D-2879.

VIII.C.1.e.(ii) the total concentration of the pure components have a true vapor pressure greater than 0.3 kPa at 20°C, is equal to or greater than 20 percent by weight; and

VIII.C.1.e.(iii) the fluid is a liquid at operating conditions.

VIII.C.1.f. "Refinery Unit" means a set of components which are a part of a basic process operation, such as, distillation, hydrotreating, cracking, or reforming of hydrocarbons.

VIII.C.1.g. "Water Draw" means a routinely used valve or system employing a valve which allows non-VOC material (usually water) to be separated from VOC.

#### VIII.C.2. Provisions for Specific Processes

VIII.C.2.a. The owner or operator of a petroleum refinery complex subject to this regulation shall:

VIII.C.2.a.(i) Develop a monitoring program consistent with the provisions in Paragraph 3.

VIII.C.2.a.(ii) Conduct a monitoring program consistent with the provisions in Subparagraph 4.a.

VIII.C.2.a.(iii) Record all leaking components which have a voc concentration exceeding 10,000 ppm when tested according to Paragraph 3., and place an identifying tag on each component consistent with the provisions in clause 4.a (iii).

VIII.C.2.a.(iv) Repair and retest leaking components, as defined in clause (iii) above, as soon as possible, but no later than fifteen (15) days after the leak is found, excepting those specified in (v) and (vi) below.

VIII.C.2.a.(v) Identify all leaking components (as defined in clause (iii) above), which cannot be repaired until the unit is shut down for turnaround, and repair and retest as in clause (iv) when the unit is back on stream.

VIII.C.2.a.(vi) When a component leak cannot be fixed within fifteen (15) working days solely because parts are not available, the following shall be noted in an "awaiting parts log:"

VIII.C.2.a.(vi)(A) component identification and tag number

VIII.C.2.a.(vi)(B) date part was ordered

VIII.C.2.a.(vi)(C) date part was received

VIII.C.2.a.(vi)(D) date repair was made

VIII.C.2.b. Except for safety pressure relief valves, no owner or operator of a petroleum refinery shall install or operate a valve at the end of a pipe or line containing volatile organic compounds unless the pipe or line is sealed with a second valve, a blind flange, a plug, or a cap. The sealing device may be removed only when a sample is being taken or when the valve is otherwise in use.

VIII.C.2.c. The Division, at its discretion, may require early unit turnaround based on the number and severity of tagged leaks awaiting turnaround provided:

VIII.C.2.c.(i) The requirement does not exceed reasonable available control technology due to cost per ton of emissions reduction achieved by the early turnaround or other reasonable analysis.

VIII.C.2.c.(ii) The Division provides the owner or operator of a petroleum refinery with written notification at least 180 days before requiring an early turnaround. The owner or operator will have 30 days from the date of the Division's notification to contest the requirement by submitting a demonstration that the requirement is beyond reasonable available control technology. If no demonstration is made, it will be assumed the requirement is reasonable. If a demonstration is submitted by the owner or operator, the Division will either approve the demonstration or disapprove the demonstration with a justification regarding the disapproval within 30 days of the date the demonstration is submitted to the Division.

VIII.C.2.c.(iii) The requirement is not contested by the owner or operator. Should the requirement be contested, the requirement for early unit turnaround will be delayed until 180 days after the demonstration discussed in item (ii) above is disapproved by the Division.

VIII.C.2.d. Piping valves and pressure relief valves in gaseous VOC service shall be marked in some manner that will be readily obvious to both refinery personnel performing monitoring and the Division, to identify them as components which are monitored quarterly.

### VIII.C.3. Testing and Monitoring Procedures

Testing and calibration procedures to determine compliance with this regulation shall be consistent with EPA reference method 21 of 40 CFR Part 60. The reference compound may be methane or hexane. A leak is defined as a reading of 10,000 ppmv of the reference compound.

### VIII.C.4. Monitoring, Recordkeeping, Reporting

#### VIII.C.4.a. Monitoring

VIII.C.4.a.(i) The owner or operator of a petroleum refinery subject to this regulation shall conduct a monitoring program consistent with the following provisions:

VIII.C.4.a.(i)(A) Monitor yearly by the method referenced in Paragraph 3., above, all:

- VIII.C.4.a.(i)(A)(1) Pump seals; and
- VIII.C.4.a.(i)(A)(2) Piping valves in light liquid VOC service; and
- VIII.C.4.a.(i)(A)(3) Process drains; and
- VIII.C.4.a.(i)(A)(4) Heat-exchanger body flanges; and
- VIII.C.4.a.(i)(A)(5) Other accessible flanges in VOC service.
- VIII.C.4.a.(i)(A)(6) Components in heavy liquid VOC service are exempt from requirements of this subclause (A).

VIII.C.4.a.(i)(B) Monitor quarterly by the method referenced in Paragraph 3., above, all:

- VIII.C.4.a.(i)(B)(1) Compressor seals; and
- VIII.C.4.a.(i)(B)(2) Piping valves in gaseous service; and
- VIII.C.4.a.(i)(B)(3) Pressure relief valves in gaseous service.

VIII.C.4.a.(i)(C) Monitor at least weekly by visual methods all pump seals.

VIII.C.4.a.(i)(D) Monitor within 24 hours with a VOC detector and make record of any component from which VOC liquids are observed leaking.

VIII.C.4.a.(i)(E) Components in heavy liquid VOC service shall be monitored by the method referenced in Paragraph 3. above within five days if evidence of a potential leak is found by visual, audible, olfactory, or any other detectable method.

VIII.C.4.a.(ii) Inaccessible valves and flanges shall be monitored annually or, as a minimum, at unit shutdown using the procedures of VIII.C.2.a (v). Pressure relief devices which are connected to an operating flare header or vapor recovery device, storage tank valves, and valves that are not externally regulated are exempt from the monitoring requirements in Paragraph (i) of this section.

VIII.C.4.a.(iii) The owner or operator of a petroleum refinery, upon the detection of a leaking component as defined in clause 2.a (iii), shall affix a weatherproof and readily visible tag, bearing an identification number

and the date the leak is located, to the leaking component. This tag shall remain in place until the leaking component is repaired. In addition, the owner or operator shall log the leak (including those leaks immediately repaired), per the requirements of Regulation Number 7, Section VIII.C.4.b.(i)-(iii).

VIII.C.4.b. Recordkeeping

VIII.C.4.b.(i) The owner or operator of a petroleum refinery shall maintain a leaking components monitoring log which shall contain at a minimum, the following data:

VIII.C.4.b.(i)(A) The name of the process unit where the component is located.

VIII.C.4.b.(i)(B) The type of component (e.g., valve, seal).

VIII.C.4.b.(i)(C) The tag number of the component.

VIII.C.4.b.(i)(D) The date on which a leaking component is discovered.

VIII.C.4.b.(i)(E) The date on which a leaking component is repaired.

VIII.C.4.b.(i)(F) The date and instrument reading found during the recheck procedure subsequent to repairing a leaking component.

VIII.C.4.b.(i)(G) A record of the calibration of the monitoring instrument.

VIII.C.4.b.(i)(H) Those leaks that cannot be repaired until turnaround.

VIII.C.4.b.(i)(I) The total number of components checked and the total number of components found leaking.

VIII.C.4.b.(i)(J) The total number of components subject to Section VIII.C.2.a (v) which upon retest were still leaking as defined in Paragraph 3 above.

VIII.C.4.b.(ii) Copies of the monitoring log shall be retained by the owner or operator for a minimum of two (2) years after the date on which the record was made or report prepared.

VIII.C.4.b.(iii) Copies of the monitoring log shall be made available to the Division upon oral or written request.

VIII.C.4.c. Reporting

The owner or operator of a petroleum refinery, upon the completion of each yearly and/or quarterly monitoring procedure, shall:

VIII.C.4.c.(i) Submit a report to the Division by the 15th day of February, May, August, and November that lists all leaking components that were located during the previous three (3) calendar months (quarter), but not repaired within fifteen (15) working days, all leaking components awaiting unit turnaround, the total number of components inspected, and the total number of components found leaking.

VIII.C.4.c.(ii) Submit a signed statement with the report attesting to the fact that, with the exception to those leaking components listed in clause 4.b.(i)(H), all monitoring and repairs were performed as stipulated in the monitoring program.

## **IX. Surface Coating Operations**

### IX.A. General Provisions

#### IX.A.1. Definitions

IX.A.1.a. "Coating" means a protective, functional or decorative film applied in a thin layer to a surface. This term often applies to paints such as lacquers or enamels, but is also used to refer to films applied to paper, plastics, or foils.

IX.A.1.b. "Coating Applicator" means an apparatus used to apply a surface coating.

IX.A.1.c. "Coating Line" means an operation which includes both (1) a coating applicator and (2) device(s) and/or area(s) to accomplish one or more of the following processes: flash-off, drying, curing, heat-setting and/or polymerization.

IX.A.1.d. "Coating Solids" means that portion of a surface coating, which remains after volatile components have escaped.

IX.A.1.e. "Final Repair Application" means that application of surface coating specifically intended to repair damage and imperfections in existing surface coats.

IX.A.1.f. "Finished Coating Solids" means those coating-solids that remain on a coated substance after completion of all production processes.

IX.A.1.g. "Flash-off Area" means the space between the application area and the oven.

IX.A.1.h. "Prime Coat" (also termed "primer") means the first film of coating applied in a multiple-coat operation.

IX.A.1.i. "Single Coat" means a single film of coating applied directly to the metal substrate, omitting the primer application.

IX.A.1.j. "Surface Coating" means a liquid, liquifiable, or mastic composition which is converted to a solid (or semi-solid) protective, decorative, or adherent film or deposit after application as a thin layer or by impregnation.

In a machine which has both coating and printing units, all units shall be considered as performing a printing operation. Such a machine is subject to the standards governing graphic arts, and thus is not covered by coating standards.

IX.A.1.k. "Surface Coating Oven" means a chamber within which heat is used to bake, cure, polymerize, and/or dry a surface coating.

IX.A.1.l. "Topcoat" means the final film of coating applied in a multiple-coat operation.

#### IX.A.2. Abbreviations

IX.A.2.a. Kg/lc shall be the abbreviation for: kilograms of solvent VOC per liter of coating (minus water and "exempt" solvents, as defined in Section II.B.).

IX.A.2.b. Lb/gc shall be the abbreviation for: (avoirdupois) pounds of solvent VOC per gallon of coating (minus water and "exempt" solvents, as defined in Section II.B.).

#### IX.A.3. Test Methods and Procedures

IX.A.3.a. The owner or operator of any VOC source required to comply with this section shall, at their own expense, demonstrate compliance using EPA reference method 24 of 40 CFR Part 60 for surface coatings, and reference method 25 and reference methods I through 4 for add-on controls.

IX.A.3.b. The test protocol should be in accordance with the requirements of the Air Pollution Control Division Compliance Test Manual and shall be submitted to the Division for review and approval at least thirty (30) days prior to testing. No test shall be conducted without prior approval from the Division.

IX.A.3.c. The Division may use independent tests to verify test data submitted by the source operator or owner. The test methods shall be those listed in subclause a above and the Division test results shall take precedence.

IX.A.3.d. The Division may accept, instead of the testing required in this subsection, a certification by the manufacturer of the composition of the coatings if supported by actual batch formulation records. The owner or operator of the VOC source required to comply with this section shall obtain certification from the coating manufacturer(s) that the test method(s) used for determination of VOC content meet the requirements specified in Subsection IX.A.3.a. The owner or operator shall have this certification readily available to Division personnel, in order to allow the results to be used in the daily compliance calculations specified in Subsection IX.A.10.

IX.A.3.e. The performance of add-on control device equipment shall be established with the required test methods of IX.A.3.a at equipment startup, and after major modification to the control equipment. Baseline operating parameters shall be established during the satisfactory (i.e. in-compliance) operation of the control equipment, including operation during all anticipated ranges of process throughput. During subsequent process operation, the owner or operator shall maintain the operating conditions of the add-on controls as close to these baseline conditions as possible. If serious operational problems with an add-on control system are evidenced from the daily monitoring required by Subsection IX.A.8.b. (such problems may be indicated by changes from baseline conditions), repeat performance tests may be required by the Division, as necessary.

#### IX.A.4. Sampling

To determine compliance with applicable surface coating standards, samples shall be taken from the coating as freshly delivered to the reservoir of the coating applicator.

#### IX.A.5. Alternative compliance methods for processes and operations

For each process specified in Sections IX.B through IX.N, the emission limits designated for that process shall be achieved by:

- IX.A.5.a. use of coatings with proportions of VOC less than or equal to the maximums specified by the applicable subsection of this regulation; or
- IX.A.5.b. use of the specified equipment and procedures prescribed by the applicable subsection of this regulation; or
- IX.A.5.c. use of an alternative means of control which satisfies the requirements of 5.e and f below and Section II.D; or
- IX.A.5.d. use of crossline averaging. The emission trading requirements of Regulation 3.V. shall be met. In addition, the following requirements apply:
- IX.A.5.d.(i) The actual reduction shall be equivalent to the actual reduction that would be achieved on a line-by-line basis.
- IX.A.5.d.(ii) Credit shall not be received for downtime, however, credit is allowed for enforceable production limits.
- IX.A.5.d.(iii) Crossline averaging shall be used only across lines in the same control technique guidance group.
- IX.A.5.d.(iv) The emission trading policy shall be met on a daily weighted average.
- IX.A.5.d.(v) Sources subject to best available control technology (BACT) and lowest achievable emission rate (LAER) requirements shall not use cross line averaging.
- IX.A.5.d.(vi) VOC emissions shall be expressed as lbs/gallons solids to determine reduction over baseline (lb VOC/lb solids for graphic arts).
- IX.A.5.d.(vii) Organisol and plastisol coatings shall not be used to bubble emissions from vinyl surface or automobile topcoating operations.
- IX.A.5.d.(viii) Before crossline averaging may be used, the control methodology shall be approved as a revision to the State Implementation Plan.
- IX.A.5.e. The design, operation and efficiency of any capture system used in conjunction with any emission control system shall be certified in writing by the source owner or operator and approved by the Division. Unless the capture system meets the requirements for a total enclosure as specified in the New Source Performance Standard for the Magnetic Tape Manufacturing Industry, 53FR38892, October 3, 1988, or unless Division approved material balance techniques are used to adequately determine overall VOC capture and destruction/recovery efficiency, the efficiency of the capture system shall be determined by test methods approved as a revision to the State Implementation Plan. Testing for capture efficiency shall be performed on a case-by-case basis as required by the Division. The requirements of Subsections IX.A.3.e and IX.A.8.b. shall apply to the capture and control device system. When capture and control device efficiency must be independently determined, the overall VOC emission reduction rate equals the (percent capture efficiency X percent control device efficiency )/100.

IX.A.5.f. Sources which use add-on controls, crossline averaging, or an approved alternative control strategy instead of low solvent technology to meet the applicable emission limit shall meet the equivalent VOC emission limit, on the basis of solids applied (lb VOC/gal solids applied, or lb VOC/lb solids applied, for graphic arts sources). Appendix F sets forth the procedure for converting emission limits and lists equivalent limits for various coating operations.

IX.A.5.g. Owners or operators of sources which use a carbon adsorption system shall provide for the proper disposal or reuse of all VOC recovered.

#### IX.A.6. Exemptions

IX.A.6.a. The requirements of this Section IX do not apply to sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance, provided;

IX.A.6.a.(i) the operation of the source is not an integral part of the production process; and

IX.A.6.a.(ii) the emissions from the source do not exceed 363 kilograms (800 lbs.) in any calendar month; and

IX.A.6.a.(iii) the exemption is approved in writing by the Division.

IX.A.6.b. The requirements of Sections IX.C, D,E,F,G,H,I,L and M are not applicable to sources whose actual emissions, including fugitive emissions, before add-on controls, are less than 6.8 kilograms (15 lbs.) per day and less than 1.4 kilograms (3 lbs.) per hour. Emissions from all sources within the same control technique guidance group shall be totaled to determine actual emissions.

#### IX.A.7. Fugitive emission control

IX.A.7.a. Control techniques and work practices shall be implemented at all times to reduce VOC emissions from fugitive sources. Control techniques and work practices include, but are not limited to:

IX.A.7.a.(i) tight-fitting covers for open tanks;

IX.A.7.a.(ii) covered containers for solvent wiping cloths;

IX.A.7.a.(iii) proper disposal of dirty cleanup solvent.

IX.A.7.b. Emissions of organic material released during clean-up operations, disposal, and other fugitive emissions shall be included when determining total emissions, unless the source owner or operator documents that the VOCs are collected and disposed of in a manner that prevents evaporation to the atmosphere.

#### IX.A.8. Recordkeeping, Reporting, and Monitoring

IX.A.8.a. If add-on control equipment is used, continuous monitors of the following parameters shall be installed, calibrated, and operated at all times that the associated control equipment is operating:

IX.A.8.a.(i) exhaust gas temperature of all incinerators;

- IX.A.8.a.(ii) temperature rise across a catalytic incineration bed;
- IX.A.8.a.(iii) breakthrough of VOC on a carbon adsorption unit;
- IX.A.8.a.(iv) any other monitoring and/or recording device, maintenance and/or control-media-replacement schedule(s) specified on a case-by-case basis by the Division.

IX.A.8.b. If add-on control equipment is used, in addition to the requirements of Subsection IX.A.8.a, the following information and any other necessary information, as determined applicable for each source by the Division, shall be monitored and recorded daily in order to assure continuous compliance. The substitution of continuous recordings for daily recording may be allowed by the Division.

- IX.A.8.b.(i) For the capture system: fan power use, duct flow, duct pressure.
- IX.A.8.b.(ii) For carbon adsorbers: bed temperature, bed vacuum pressure, pressure at the vacuum pump, accumulated time of operation, concentration of VOC in the outlet gas, solvent recovery.
- IX.A.8.b.(iii) For refrigeration systems: compressor discharge and suction pressures, condenser fluid temperature, solvent recovery.
- IX.A.8.b.(iv) For incinerator systems: exhaust gas temperature, temperature rise across a catalytic incinerator bed, flame temperature, accumulated time of incinerator.

IX.A.8.c. Recordkeeping procedures shall follow the guidance in "Recordkeeping Guidance Document for Surface Coating Operations and the Graphic Arts Industry," July 1989, EPA 340/1-88-003.

#### IX.A.9. Required and Prohibited Acts

- IX.A.9.a. No owner or operator of a source of VOCs subject to this section shall operate, cause, allow or permit the operation of the source, unless:
  - IX.A.9.a.(1) For each category of surface coating as specified in Sections IX.B. through IX.M, the owner or operator of a surface coating line or facility subject to that section does not cause, allow or permit the discharge into the atmosphere of any VOCs in excess of the specified emission limit, calculated as delivered to the coating applicator or as applied to the substrate, whichever is greater.

#### IX.A.10. Compliance Calculation Procedures

- IX.A.10.a. Compliance with this section shall be determined on a daily basis. Sources may request a revision to the State Implementation Plan for longer times for compliance determination.
- IX.A.10.b. Compliance calculation procedures shall follow the guidance in "Procedure for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84/019. In addition, for add-on controls or other compliance alternatives, calculation procedures shall follow the guidance of Section IX.A.5.f of this regulation.

IX.A.11. The requirements of Subsections IX.A.1 through IX.A.10 of this regulation apply to each category of surface coating as specified in Sections IX.B through IX.M. The requirements of IX.A. 7 through 10 apply to the category of IX.N.

IX.A.12. The Division shall approve utilization of alternative compliance methods to the following sources pursuant to this Section IX.

IX.A.12.a. Lexmark International, Inc. shall be allowed to utilize the alternative compliance method of crossline averaging for processes and operations within the Manufactured Metal Parts and Metal products (Subgroup L) and within the Plastic Film Coating Operations (Subgroup J). The emission trading requirements of Regulation Number 3, Part A, Section V shall be met, and utilization of the alternative compliance method shall be subject to the following generic conditions, which shall be written and specifically described as enforceable permit terms and conditions in its permits:

IX.A.12.a.(i) The alternative compliance method shall result in an actual reduction that is equivalent to the actual reduction that would otherwise be achieved on a line-by-line basis pursuant to this Regulation Number 7.

IX.A.12.a.(ii) Credit shall not be received for downtime; however, credit is allowed for emission reductions from enforceable production limits.

IX.A.12.a.(iii) Cross line averaging shall be used only across lines of the same control technique guidance group. Lexmark shall use cross line averaging between Metal Parts and Metal Products lines or between Plastic Film Coating lines. Lexmark shall not use cross line averaging where the emissions from Plastic film coating lines are averaged with Metal Parts and Metal Products lines.

IX.A.12.a.(iv) The emission trading policy set forth in Regulation Number 3, V, Part A, shall be met on a daily weighted average.

IX.A.12.a.(v) Sources subject to Best Available Control Technology (BACT), and Lowest Achievable Emission Rate (LAER) shall not use cross line averaging.

IX.A.12.a.(vi) To determine reduction over baseline, VOC emissions shall be expressed according to Regulation Number 7, Section IX.(A).(5).(f), as lbs/gallons solids.

IX.A.12.a.(vii) Monthly records shall be kept at the source to verify ongoing compliance with these conditions. The recordkeeping format shall be approved by the Division.

IX.A.12.a.(viii) An annual report demonstrating ongoing compliance with this regulation and all permit terms shall be filed with the Division. The report format shall be approved by the Division and specifically described in the permit.

IX.A.12.a.(ix) The Division shall issue a permit with Federally enforceable terms and conditions to Lexmark limiting Lexmark's alternative compliance method emissions to those allowable under Subpart L or J as appropriate, of this Regulation Number 7.

IX.A.12.a.(x) Commercial and Product quality control laboratory equipment are exempt from APEN filing and construction permit requirements under Regulation Number 3, Part A. II. D. 1(i), and Regulation Number 3 Part B, III.D.1.a; and from construction permit requirements under Regulation Number 3, Part B, III.D.1(i). Qualifying sources shall be exempt from Reg 7 IX. A. 6.

IX.A.12.a.(xi) Nothing in the alternative compliance method is intended to relax any emissions limitation of this Regulation Number 7.

IX.B. Automobile and Light-Duty Truck Assembly Plants

IX.B.1. Definitions

IX.B.1.a. "Application Area" means the area where the surface coating is applied by spraying, dipping or flow coating.

IX.B.1.b. "Automobile" means a passenger motor-vehicle or a derivative of same, capable of seating twelve (12) or fewer passengers, and having at least two driven wheels.

IX.B.1.c. "Automobile Assembly Facility" means a facility where parts (including assembled or partially assembled components) of automobiles are received, and finished automobiles are produced, partially or wholly by an assembly line.

IX.B.1.d. "Light-Duty Truck" means any motor vehicle rated at 8,500 pounds (3,855 kilograms) gross vehicle weight or less, and having at least two driven wheels, which is designed primarily for purposes of transportation of property or is a derivative of such vehicles. It includes, but is not limited to, pickup trucks, vans, and window vans rated at 8,500 pounds gross vehicular weight or less.

IX.B.1.e. "Light-Duty Truck Assembly Facility" means a facility where parts (including assembled or partially assembled components) of light-duty trucks are received, and finished light-duty trucks are produced, partially or wholly by an assembly line.

IX.B.2. Applicability

This subsection applies to all assembly and subassembly lines in an automobile or light-duty truck assembly facility, including those for frames, small parts, wheels, and main body parts. This subsection applies only to the manufacture of new vehicles.

IX.B.3. Emission Limitations

	Kg/lc	Lb/gc
Prime application, flashoff area, and oven	0.23	1.9
Topcoat application area, flashoff area, and oven	0.34	2.8

Final repair application, flashoff area and oven            0.58                            4.8

IX.B.4. Coatings other than primer, surfacer (guidecoat), topcoat and final repair shall be considered under the miscellaneous metal parts Subsection IX.L.

IX.B.5. For topcoat application, if a complying coating is not used to meet the emission limit of Subsection IX.B.3, then:

IX.B.5.a.            the alternate method shall meet an emission limit of 15.1 lb VOC/gal. solids deposited on the coated part; and

IX.B.5.b.            compliance shall be determined on a daily weighted average basis.

IX.B.6. Topcoat operation shall include all spray booths, flash-off areas and ovens in which topcoat is applied, dried and cured, except for final offline repair.

### IX.C. Can Coating Operations

#### IX.C.1. Definitions

IX.C.1.a.            "Can Coatings" means any coatings containing organic materials and applied -- or intended for application -- by spray, roller, or other means onto the inside and/or outside surfaces of formed cans and components of cans.

IX.C.1.b.            "End Sealing Compound" means a substance which is coated onto can ends and which functions as a seal when the end is assembled onto the can.

IX.C.1.c.            "Exterior Base Coat" means a coating applied to the exterior of a can to provide protection to the metal and/or to provide background for any lithographic or printing operation.

IX.C.1.d.            "Interior Base Coat" means the initial coating applied to the interior surface of a can by roller coater or spray.

IX.C.1.e.            "Interior Body Spray" means a coating sprayed onto the interior surface of the can body to provide a protective film between the can and its contents.

IX.C.1.f.            "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, provide gloss, protect against abrasion, enhance product quality, and protect against corrosion.

IX.C.1.g.            "Three-Piece Can Side Seam Spray" means a coating sprayed onto the interior and/or exterior of a can body seam on a three-piece can to protect the exposed metal.

IX.C.1.h.            "Two-Piece Can Exterior End Coat" means a coating applied to the exterior of the bottom end of a two-piece can.

#### IX.C.2. Applicability

This subsection applies to coating applicator(s), and oven(s) of sheet can or end coating lines involved in sheet basecoat (exterior and interior) and over varnish, two-and three-piece can

interior body spray, two-piece can exterior end (spray or roll coat), three-piece can side-seam spray, and end sealing compound operations.

IX.C.3. Emission Limitations

Can Coating	Kg/lc	Lb/gc
Sheet base coat (exterior and interior) and overvarnish two-piece can exterior (base coat and overvarnish)	0.34	2.8
Two and three-piece can interior body spray, two-piece can exterior end (spray or roll coat)	0.51	4.2
Three-piece can side-seam spray	0.66	5.5
End sealing compound	0.44	3.7
Any additional coats	0.51	4.2

IX.D. Coil Coating Operations

IX.D.1. Definitions

IX.D.1.a. "Coil Coating" means any surface coating applied by spray, roller, or other means onto one or both surfaces of flat metal sheets or strips that come in rolls or coils.

IX.D.1.b. "Quench Area" means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

IX.D.2. Applicability

This subsection applies to the coating applicator(s), oven(s), and quench area(s) of coil coating operations involved in primer, intermediate, top-coat or single-coat operations.

IX.D.3. Emission Limitations:

Coil Coating	Kg/lc	Lb/gc
Any coat (primer, intermediate coat, topcoat, single coat)	0.31	2.6

IX.E. Fabric Coating Operations

IX.E.1. Definitions

IX.E.1.a. "Fabric Coating" means the process of coating or impregnating the full, usable surface of a fabric web or sheet to impart properties that are not initially present such as strength, stability, water or acid repellency, or appearance. "Fabric Coating" excludes those processes normally included under fabric finishing (e.g. dyeing, treating for stain and wrinkle resistance, etc.).

IX.E.2. Applicability

This subsection applies to fabric coating lines which includes, but is not limited to, coaters and drying ovens.

IX.E.3. Emission Limitations

	Kg/lc	Lb/gc
Fabric Coating Line	0.35	2.9

IX.F. Large Appliance Coating Operations

IX.F.1. Definition

IX.F.1.a. "Large Appliances" includes doors, cases, lids, panels, interior support parts, and any other large (greater than one square decimeter (15.5 square inches)) coated surfaces of residential and commercial washers, dryers, ovens, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, and all other products under SIC Code 363 according to the "Standard Industrial Classification Manual", Executive Office of the President, Office of Management and Budget, designated by convention of the industry as large appliances.

IX.F.2. Applicability

This subsection applies to all large appliance coating lines.

IX.F.3. Emission Limitations

	Kg/lc	Lb/gc
Large Appliance Coating Line; prime, single or topcoat application area, flashoff area, and oven	0.34	2.8

IX.G. Magnet Wire Coating Operations

IX.G.1. Definition

IX.G.1.a. "Magnet Wire Coating" means those operations which apply a coating of electrically insulating varnish or enamel (or similar substance) to wire which is known as "magnet wire." Magnet wire is usually copper or aluminum, and is used for electric motors, generators, transformers, magnets, and related products.

IX.G.2. Applicability

This subsection applies to, but is not limited to, coaters and drying ovens of magnet wire coating operations.

IX.G.3. Emission Limitations

	Kg/lc	Lb/gc
Magnetic wire coating operation	0.20	1.7

IX.H. Metal Furniture Coating Operations

IX.H.1. Definitions

IX.H.1.a. "Metal Furniture" means furnishings commonly considered furniture, for domestic, business, and/or institutional use, which have one or more essential, major components made of metal. "Metal furniture" includes, but is not limited to, tables, chairs, wastebaskets, beds, desks, lockers, shelving, cabinets, room dividers, clothing racks, chests of drawers, and sofas.

IX.H.1.b. "Metal Furniture Coating" means applying a "surface coating" to "metal furniture" as defined above. It excludes coating of non-metal components.

IX.H.2. Applicability

This subsection applies to all metal furniture coating lines.

IX.H.3. Emission Limitations

	Kg/lc	Lb/gc
Metal Furniture Coating Line: All coats (including prime, single, and topcoat)	0.36	3.0

IX.I. Paper Coating Operations

IX.I.1. Definition

"Paper Coating" means impregnating or applying a uniform layer of "surface coating" to paper. It includes, but is not limited to, the production of: coated, glazed, decorated, and varnished paper; carbon and pressure-sensitive copy papers; paper adhesive-labels and tapes; blue-print;

photographic and copier paper. It also includes coating of metal foil such as gift wrap and packaging. Paper coating does not include impregnation using a batch dipping process.

IX.I.2. Applicability

This subsection applies to paper coating lines, which includes, but is not limited to, coaters and drying ovens.

IX.I.3. Emission Limitations

	Kg/lc	Lb/gc
Paper Coating Line	0.35	2.9

IX.J. Plastic-Film Coating Operations

IX.J.1. Definition

IX.J.1.a. "Plastic-Film Coating" means applying a uniform layer of "surface coating" to a flexible web or sheet of thin plastic substance, excluding all rubbers and vinyls\* (polyvinyl chloride) except for the following two categories of vinyl products: (1) vinyl tapes and (2) vinyls coated with an adhesive or pressure-sensitive coating. It includes, but is not limited to: plastic typewriter ribbons, photographic film, adhesive tapes, and magnetic recording tapes. (\*see Subsection K.)

IX.J.2. Applicability

This subsection applies to, but is not limited to, coaters and drying ovens of plastic-film coating lines.

IX.J.3. Emission Limitations

	Kg/lc	Lb/gc
Plastic-Film Coating Line	0.35	2.9

IX.K. Vinyl Coating Operations

IX.K.1. Definition

"Vinyl Coating" means applying a uniform layer, decorative or protective topcoat to a vinyl (polyvinyl chloride) coated fabric or vinyl sheet. It includes printing of same. Excluded are\*: (1) the coating of same with adhesive or pressure-sensitive coatings and (2) vinyl tapes. (\*see Subsection J).

IX.K.2. Application

This subsection applies to vinyl coating lines which includes, but is not limited to, coaters and drying ovens.

IX.K.3. Emission Limitations

	Kg/lc	Lb/gc
Vinyl Coating Line	0.45	3.8

IX.L. Manufactured Metal Parts and Metal Products

IX.L.1. General Provisions

IX.L.1.a. Applicability

This subsection applies to the application area(s), flashoff area(s), oven(s), and drying areas including (but not limited to) air and forced air drier(s) used in the surface coating of the metal parts and products listed below. This section applies to prime coat, top coat, and single coat operations. This section is applicable to surface coating of manufactured metal parts and metal products which include:

IX.L.1.a.(i) Large farm machinery (harvesting, fertilizing, and planting machines, tractors, combines, etc.);

IX.L.1.a.(ii) Small-farm, lawn and garden machinery (lawn and garden tractors, lawn mowers, rototillers, etc.);

IX.L.1.a.(iii) Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.);

IX.L.1.a.(iv) Commercial machinery (office equipment, computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);

IX.L.1.a.(v) Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);

IX.L.1.a.(vi) Fabricated metal products (metal covered doors, frames, etc.);

IX.L.1.a.(vii) Furniture hardware made of metal for use with non-metal furniture; and

IX.L.1.a.(viii) Any other industrial category which coats metal parts or products under the standard industrial classification code of major group 33 (primary metal industries), major group 34 (fabricated metal products), major group 35 (non-electric machinery), major group 36 (electrical machinery), major group 37 (transportation equipment), major group 38 (miscellaneous instruments), and major group 39 (miscellaneous manufacturing industries), according to the "Standard Industrial Classification Manual" Executive Office of the President, Office of Management and Budget.

IX.L.1.b. Exemptions

IX.L.1.b.(i) This Subsection L is not applicable to the surface coating of the following metal parts and products inasmuch as these are previously covered in Subsections IX.B., C., D., F, G, and H., respectively:

IX.L.1.b.(i)(A) Automobiles and light-duty trucks

IX.L.1.b.(i)(B) Metal cans

IX.L.1.b.(i)(C) Flat metal sheets and strips in the form of rolls or coils

IX.L.1.b.(i)(D) Large appliances

IX.L.1.b.(i)(E) Magnet wire for use in electrical machinery

IX.L.1.b.(i)(F) Metal furniture

IX.L.1.b.(ii) This Subsection L is not applicable to the following special purpose coatings:

IX.L.1.b.(ii)(A) Division-approved exemptions for high performance coatings on a case-by-case basis.

IX.L.1.b.(ii)(B) Full exterior repainting of automobiles and light-duty trucks if fewer than 18 vehicles are painted per day.

IX.L.1.c. Definitions

For the purpose of this subsection, the following definitions apply:

IX.L.1.c.(i) "Air Dried Coating" means coatings which are dried by the use of air or forced warm air at temperatures up to 90°C (194°F);

IX.L.1.c.(ii) "Clear Coat" means a coating, which lacks color and opacity or a coating which is transparent;

IX.L.1.c.(iii) "Coating Application System" means all operations and equipment which apply, convey, and dry a surface coating, including, but not limited to, spray booths, flow coaters, flashoff areas, air dryers and ovens;

IX.L.1.c.(iv) "Extreme Environmental Conditions" means exposure to any of the following: temperatures consistently above 95°C, detergents, abrasive and scouring agents, solvents, and corrosive environments;

IX.L.1.c.(v) "Extreme Performance Coatings" means coatings designed for extreme environmental conditions.

IX.L.2. Provisions for Specific Processes

IX.L.2.a. No owner or operator of a facility or operation engaging in the surface coating of manufactured metal parts or metal products may operate a coating application system subject to this regulation that emits VOC in excess of:

IX.L.2.a.(i) Clear coatings:

0.52 kg/1c(4.3 lb/gc)

IX.L.2.a.(ii) Extreme Performance Coatings:

0.42 kg/1c (3.5 lb/gc)

IX.L.2.a.(iii) Air-Dried Coatings

0.42 kg/1c (3.5 lb/gc)

IX.L.2.a.(iv) Other coatings and systems:

0.36 kg/1c (3.0 lb/gc) delivered to a coating applicator for all other coatings and coating application systems.

IX.L.2.b. If more than one emission limitation in Subparagraph 2.a. applies to a specific coating, then the least stringent emission limitation shall be applied.

IX.L.2.c. Pioneer Metal Finishing, Inc., a surface coating operation, is authorized pursuant to Regulation Number 3, Part A, Section V and Regulation Number 7, Section II.D.1.a to use up to twenty (20) tons of certified emission reduction credits of volatile organic compounds (VOC) as an alternative compliance method to satisfy the surface coating emission limitations of Regulation Number 7 in accordance with and upon demonstration of the conditions set forth below:

IX.L.2.c.(i) Certified emission reduction credits for VOCs (methanol) to be used in this transaction were formerly owned by the Coors Brewing Company, registered and issued in Emissions Reduction Credit Permit 91AR120R on July 25, 1994;

IX.L.2.c.(ii) Those emission reduction credits were originally obtained by Coors from Verticel, a company that produced honeycomb packaging material and was located within five miles of the PMF facility;

IX.L.2.c.(iii) The use of these VOC emission reduction credits identified above shall be used to satisfy VOC limitations of certain specified surface coatings in excess of Control Technique Guidance as specified in Regulation Number 7, Section IX.L.2.a and Section IX.A.6.b, and applicable to the Pioneer Metal finishing operations;

IX.L.2.c.(iv) Such emission reduction credits identified above will be used by PMF to achieve compliance with Regulation Number 7 to compensate for ozone precursor emission of VOCs from non-compliant coatings which meet the emission trading requirements of Regulation Number 3. In order to satisfy the photochemical reactivity equivalency requirement of VOC trades, the methanol VOC ERCs will be reduced on a ratio of 1.1:1 for VOCs of toluene, ethylbenzene, xylene and ketones emitted from non-compliant coatings. All other VOCs involved in this transaction are considered to be of the same degree of photochemical reactivity;

IX.L.2.c.(v) The requirement in Regulation Number 3, Part A, Section V.F.2 shall not apply to this transaction;

- IX.L.2.c.(vi) This transaction is only valid within the Denver/Boulder nonattainment area as described at 40 CFR 81, Subchapter C-Air Programs, Subpart C-Section 107 Attainment Status Designations, Section 81.306;
- IX.L.2.c.(vii) This transaction shall be calculated upon a pound for pound basis and averaged over a maximum 24-hour period.
- IX.L.2.c.(viii) This transaction shall be effective upon approval by the U.S. Environmental Protection Agency as a revision to the Colorado State Implementation Plan and after issuance of a State Construction Permit incorporating, but not limited to, the conditions and requirements of the Section;
- IX.L.2.c.(ix) This transaction may not be used to satisfy any current or future requirements of NSPS, BACT, LAER, or MACT requirements of HAPs which may apply to PMF, except that this transaction may be used to satisfy control technique guidance or RACT requirements contained in Regulation Number 7 which are applicable to PMF;
- IX.L.2.c.(x) This transaction shall not interfere with any applicable requirement concerning attainment and reasonable further progress in the Colorado State Implementation Plan or any other applicable requirements of the Clean Air Act;
- IX.L.2.c.(xi) This transaction shall be registered and enforced through a State Construction Permit issued to Pioneer Metal Finishing, Inc. containing, but not limited to the conditions and limitations set forth in this Section;
- IX.L.2.c.(xii) Such state Construction Permit issued to Pioneer Metal Finishing, Inc. shall specify, among other, things the necessary monitoring, recordkeeping and reporting requirements to insure that the emission reduction credits are applied in accordance with the conditions and requirements of this Section;
- IX.L.2.c.(xiii) The state Construction Permit shall allow a daily maximum limitation of 160 lbs. of VOC emissions from non-compliant surface coatings and an annual limitation of 40,000 lbs. of non-compliant VOC emissions. The annual limitation shall be calculated on a 12-month rolling total calculated on the first day of each month using the previous 12 months.
- IX.L.2.c.(xiv) The state Construction Permit shall limit the VOC-HAP emissions to less than ten (10) per year of any one HAP or twenty-five (25) tons per year of any combination of HAP emissions; and
- IX.L.2.c.(xv) PMF will maintain records of daily and monthly totals of non-compliant surface coatings used in its operation and report such usages on an annual basis to the Division or as otherwise requested.

## IX.M. Flat Wood Paneling Coating.

### IX.M.1. Definitions

- IX.M.1.a. "Class II Hardboard Paneling Finish" means finishes which meet the specifications of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.
- IX.M.1.b. "Coating Application System" means all operations and equipment which apply, convey, and dry a surface coating, including, but not limited to, spray booths, flow coaters, conveyers, flashoff areas, air dryers and ovens.
- IX.M.1.c. "Hardboard" is a panel manufactured primarily from inter-felted ligno-cellulosic fibers which are consolidated under heat and pressure in a hot press.
- IX.M.1.d. "Hardboard Plywood" is plywood whose surface layer is a veneer of hardwood.
- IX.M.1.e. "Natural Finish Hardwood Plywood Panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.
- IX.M.1.f. "Printed Interior Panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.
- IX.M.1.g. "Thin Particleboard" is a manufactured board 1/4 inch or less in thickness made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure.
- IX.M.1.h. "Tileboard" means paneling that has a colored waterproof surface coating.

#### IX.M.2. Applicability

This subsection applies to all flat wood manufacturing and surface finishing facilities that manufacture printed interior panels made of hardwood plywood and thin particle board; natural finish hardwood plywood panels, or hardboard paneling with Class II finishes. This subsection does not apply to the manufacture of exterior siding, tileboard, or particleboard used as a furniture component.

#### IX.M.3. Emission Limitations

- IX.M.3.a. 2.9 kg per 100 square meters of coated finished product (6.0 lb/1,000 sq. ft) from printed interior panels, regardless of the number of coats applied;
- IX.M.3.b. 5.8 kg per 100 square meters of coated finished product (12.0 lb/1,000 sq. ft.) from natural finish hardwood plywood panels, regardless of the number of coats applied; and
- IX.M.3.c. 4.8 kg per 100 square meters of coated finished product (10.0 lb/1,000 sq. ft.) from Class II finishes on hardboard panels, regardless of the number of coats applied.

### IX.N. Manufacture of Pneumatic Rubber Tires

#### IX.N.1. Definitions

- IX.N.1.a. "Bead Dipping" means the dipping of an assembled tire bead into a solvent-based cement.
- IX.N.1.b. "Green Tires" means assembled tires before holding and curing have occurred.
- IX.N.1.c. "Green Tire Spraying" means the spraying of green tires, both inside and outside, with release compounds which help remove air from the tire during molding and prevent the tire from sticking to the mold after curing.
- IX.N.1.d. "Pneumatic Rubber Tire Manufacture" means the production of pneumatic rubber, passenger type tires on a mass production basis.
- IX.N.1.e. "Passenger Type Tire" means agricultural, airplane, industrial, mobile home, light and medium duty truck, and passenger vehicle tires with a bead diameter up to 20.0 inches and cross section dimension up to 12.8 inches.
- IX.N.1.f. "Tread End Cementing" means the application of a solvent-based cement to the tire tread ends.
- IX.N.1.g. "Undertread Cementing" means the application of a solvent-based cement to the underside of a tire tread.
- IX.N.1.h. "Water Based Sprays" means release compounds, sprayed on the inside and outside of green tires, in which solids, water, and emulsifiers have been substituted for organic solvents.

## IX.N.2. Applicability

This section applies to VOC emissions from the following operations in all pneumatic rubber tire facilities: undertread cementing, tread end cementing, bead dipping, and green tire spraying.

The provisions of this section do not apply to the production of specialty tires for antique or other vehicles when produced on an irregular basis or with short production runs. This exemption applies only to tires produced on equipment separate from normal production lines for passenger type tires.

## IX.N.3. Provisions for Specific Processes

- IX.N.3.a. The owner or operator of an undertread cementing, tread end cementing, or bead dipping operation subject to this regulation shall:
  - IX.N.3.a.(i) Install and operate a capture system, designed to achieve maximum reasonable capture, up to 85 percent by weight of VOC emitted, from all undertread cementing, tread end cementing and bead dipping operations. Maximum reasonable capture shall be consistent with the following documents:
    - IX.N.3.a.(i)(A) Industrial Ventilation, A Manual of Recommended Practices, 17th Edition, American Federation of Industrial Hygienists, 1982.
    - IX.N.3.a.(i)(B) Recommended Industrial Ventilation Guidelines, U.S. Department of Health, Education and Welfare, National Institute of Occupational Safety and Health, January 1976.

IX.N.3.a.(ii) Install and operate a control device that meets the requirements of one of the following:

IX.N.3.a.(ii)(A) A carbon adsorption system designed and operated in a manner such that there is at least a 95.0 percent removal of VOC by weight from the gases ducted to the control device; or,

IX.N.3.a.(ii)(B) An incineration system that oxidizes at least 90.0 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator to carbon dioxide and water.

IX.N.4. The owner or operator of a green tire spraying operation subject to this regulation must implement one of the following means of reducing volatile organic compound emissions:

IX.N.4.a. Substitute water-based sprays for the normal solvent-based mold release compound; or,

IX.N.4.a.(i) Install a capture system designed and operated in a manner that will capture and transfer at least 90.0 percent of the VOC emitted by the green tire spraying operation to a control device; and,

IX.N.4.a.(ii) In addition to Part (i), install and operate a control device that meets the requirements of one of the following:

IX.N.4.a.(ii)(A) a carbon adsorption system designed and operated in a manner such that there is at least 95.0 percent removal of VOC by weight from the gases ducted to the control device; or,

IX.N.4.a.(ii)(B) an incineration system that oxidizes at least 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) to carbon dioxide and water.

IX.N.5. Testing of capture system efficiency shall meet the requirements of Subsection IX.A.5.e.

IX.N.6. Control devices shall meet the applicable requirements, including recordkeeping, of Subsections IX.A.3.a, b, c, and e, and IX.A.8.a and b.

IX.N.7. The applicable EPA reference methods I through 4, and 25, of 40 CFR Part 60, shall be used to determine the efficiency of control devices.

## **X. Use of Solvents for Degreasing and Cleaning**

### **X.A. General Provisions**

#### **X.A.1. Applicability**

The provisions of this section apply to cold cleaners, non-conveyorized vapor degreasers, and conveyorized degreasers. Open top vapor degreasers are a subset of non-conveyorized vapor degreasers. The owner or operator of a unit subject to this section shall ensure that no such unit is used unless the requirements of this section are satisfied.

#### **X.A.2. Definitions**

X.A.2.a. "Cold-Cleaner" means a container of non-aqueous liquid solvent held below its boiling point, which is designed, used, or intended for cleaning solid objects in a batch-loaded process. A "cold-cleaner" may have provisions for heating the solvent. It does not include vapor degreasers or continuously loaded conveyorized degreasers.

X.A.2.b. "Conveyorized Degreaser" means an apparatus that performs degreasing or other cleaning functions through the use of non-aqueous liquid solvent and/or solvent vapors within a container, and which has a conveyor mechanism allowing continuous loading of items conveyed into and out of the solvent.

X.A.2.c. "Freeboard" in a vapor degreaser means the vertical distance from the top of the vapor zone (as established by normal operations within the specifications of the degreaser manufacturer) to the top of the degreaser.

For cold-cleaners "freeboard" means the vertical distance from the surface of the solvent liquid to the top of the degreaser.

If all sides are not even, the vertical distance to the top of the lowest side shall be used to make the determination of freeboard.

X.A.2.d. "Freeboard Ratio" means the ratio of the freeboard to the width of the solvent surface.

X.A.2.e. "Non-Conveyorized Vapor Degreaser" means an apparatus, which uses non-aqueous solvent vapors within some type of container to degrease or otherwise clean solid objects in a batch-loaded process. It excludes continuously loaded conveyorized degreasers.

X.A.2.f. "Solvent Metal Cleaning" means the process of cleaning soils from metal surfaces by cold cleaning, conveyorized degreasing, or non-conveyorized vapor degreasing.

#### X.A.3. Transfer of waste solvent and used solvent

In any disposal or transfer of waste or used solvent, at least 80 percent by weight of the solvent/waste liquid shall be retained (i.e., no more than 20 percent of the liquid solvent/solute mixture shall evaporate or otherwise be lost during transfers).

#### X.A.4. Storage of waste solvent and used solvent

Waste or used solvent shall be stored in closed containers unless otherwise required by law.

X.A.5. Any control device shall meet the applicable requirements of Subsections IX.A.3.a, b, c, e and IX.A.8.a. and b.

### X.B. Control of Solvent Cold-Cleaners

#### X.B.1. Control Equipment

##### X.B.1.a. Covers

X.B.1.a.(i) All cold-cleaners shall have a properly fitting cover.

X.B.1.a.(ii) Covers shall be designed to be easily operable with one hand under any of the following conditions:

X.B.1.a.(ii)(A) Solvent true vapor pressure is greater than 15 torr (0.3 psia) at 38°C (100°F).

X.B.1.a.(ii)(B) The solvent is agitated by an agitating mechanism.

X.B.1.a.(ii)(C) The solvent is heated.

#### X.B.1.b. Drainage Facility

X.B.1.b.(i) All cold-cleaners shall have a drainage facility that captures the drained liquid solvent from the cleaned parts.

X.B.1.b.(ii) For cold-cleaners using solvent which has a vapor pressure greater than 32 torr (0.62 psia) measured at 38°C (100°F) either:

X.B.1.b.(ii)(A) There shall be an internal drainage facility within the confines of the cold-cleaner, so that parts are enclosed under the (closed) cover to drain after cleaning, or if such a facility will not fit within;

X.B.1.b.(ii)(B) An enclosed, external drainage facility that captures the drained solvent liquid from the cleaned parts.

X.B.1.c. A permanent, clearly visible sign shall be mounted on or next to the cold-cleaner. The sign shall list the operating requirements.

X.B.1.d. Solvent spray apparatus shall not have a splashing, fine atomizing, or shower type action but rather should produce a solid, cohesive stream. Solvent spray shall be used at a pressure that does not cause excessive splashing.

For solvents with a true vapor pressure above 32 torr (0.62 psia) at 38°C (100°F), or, for solvents heated above 50°C (120°F), one of the following techniques shall be used:

X.B.1.d.(i) A freeboard ratio greater than or equal to 0.7.

X.B.1.d.(ii) A water or a non-volatile liquid cover. The cover liquid shall not be soluble in the solvent and shall not be more dense than the solvent and the depth of the cover liquid shall be sufficient to prevent the escape of solvent vapors.

#### X.B.2. Operating requirements

X.B.2.a. The cold-cleaner cover shall be closed whenever parts are not being handled within the cleaner confines.

X.B.2.b. Cleaned parts shall be drained for at least 15 seconds and/or until dripping ceases. Any pools of solvent shall be tipped out on the clean part back into the tank.

#### X.C. Control of Non-Conveyorized Vapor Degreasers

##### X.C.1. Control Equipment

X.C.1.a. The non-conveyorized vapor degreaser shall have a cover which shall be designed and operated so that it can be easily opened and closed through the use of mechanical assists such as spring loading, counterweights, etc.; opening and closing the cover shall not disturb the vapor zone.

X.C.1.b. Safety Switches

The following two types of switches shall be installed on vapor degreasers:

X.C.1.b.(i) Condenser flow switch and thermostat - (shuts off sump heat if the condenser coolant is either not circulating or is too warm); and

X.C.1.b.(ii) Spray safety switch - (shuts off spray pump if the vapor level drops more than four (4) inches).

X.C.1.c. Control Device

X.C.1.c.(i) For non-conveyorized vapor degreasers with an open area (with the cover open) of one square meter (10.8 ft<sup>2</sup>) or less, either the freeboard ratio shall be greater than or equal to 0.75, or one of the control devices in (ii) below shall be used.

X.C.1.c.(ii) For non-conveyorized vapor degreasers with an open area (with the cover open) greater than one (1) square meter, (10.8 ft<sup>2</sup>), at least one of the following control systems shall be used:

X.C.1.c.(ii)(A) Both a powered cover and a freeboard ratio greater than or equal to 0.75.

X.C.1.c.(ii)(B) A refrigerated chiller with a cooling capacity equivalent to or greater than the applicable specifications in Appendix C.

X.C.1.c.(ii)(C) An enclosed design: A system where the cover(s) or door(s) opens only when a dry part is entering or exiting the degreaser.

X.C.1.c.(ii)(D) A carbon adsorption system with ventilation greater than or equal to 15 cubic meters each minute per square meter (50 cfm/ft<sup>2</sup>) of air/vapor area (when the cover(s) is [are] open), exhausting less than 25 parts per million (by volume) of solvent averaged over one complete adsorption cycle.

X.C.1.d. A permanent, clearly visible sign shall be mounted on or next to the degreaser. The sign shall list the operating requirements.

X.C.2. Operating Requirements

X.C.2.a. Keep cover closed at all times except when processing work loads into or out of the degreaser.

X.C.2.b. The following operations shall be performed to minimize solvent carry-out:

X.C.2.b.(i) Rack parts to allow full drainage.

X.C.2.b.(ii) Move parts as slowly as is practicable in and out of the degreaser. A maximum of one foot every five seconds by hand or a maximum of 5.5 cm/sec. (10.8ft/min) for a mechanically operated system.

X.C.2.b.(iii) Allow the workload to clean in the vapor zone at least 30 seconds or until condensation ceases.

X.C.2.b.(iv) Tip out any pools of solvent that remain on the cleaned parts before removal from the vapor zone.

X.C.2.b.(v) Allow parts to dry within the degreaser at least 15 seconds and/or until visually dry.

X.C.2.c. Solvents shall not be used to clean porous or absorbent materials; for example, cloth, leather, wood, rope, etc.

X.C.2.d. Work loads shall not occupy more than half of the degreaser's open top area.

X.C.2.e. Spraying shall not be done above the vapor level.

X.C.2.f. Solvent leaks shall be repaired immediately, or the degreaser shall be shut down.

X.C.2.g. Exhaust ventilation shall not exceed twenty (20) cubic meters per minute per square meter (65.6 cfm per sq. ft.) of degreaser open area, unless greater exhaust rates are necessary to meet Occupational and Safety Health Act requirements. Ventilation fans shall not be used near the degreaser opening, unless necessary to meet Occupational and Safety Health Act requirements.

X.C.2.h. The water separator shall function so that no visible water is present in the solvent exiting the separator.

#### X.D. Control of Conveyorized Degreasers

##### X.D.1. Control Equipment

###### X.D.1.a. Control Device

For all conveyorized degreasers with a solvent surface area greater than two (2) square meters (21.5 square feet), the degreasing shall be controlled by at least one of the following:

X.D.1.a.(i) Carbon adsorption system, with ventilation greater or equal to 15 cubic meters per minute per square meter (49.2 cf/m ft<sub>2</sub>) of air/vapor interface for vapor degreasers (of air/liquid interface for non-vapor types) when down-time covers are open, and exhausting less than 25 parts per million of solvent (by volume) averaged over a complete adsorption cycle.

X.D.1.a.(ii) For vapor degreasers only: a refrigerated chiller with a cooling capacity equivalent to or greater than the applicable specifications in Appendix D.

###### X.D.1.b. Prevention of Carry-out

A drying tunnel, tumbling basket(s), or other demonstrably effective method(s) shall be employed to prevent cleaned parts from carrying out solvent liquid or vapor.

#### X.D.1.c. Safety Switches

X.D.1.c.(i) The following two (2) switch-circuits (or equivalent) shall be installed.

X.D.1.c.(i)(A) A spray safety switch shall shut off the spray pump and/or the conveyor if the vapor level drops more than four (4) inches.

X.D.1.c.(i)(B) A vapor level control thermostat shall shut off sump heat when the vapor level rises too high.

X.D.1.c.(ii) All conveyORIZED degreasers shall have a condenser thermostat and flow-detector switch (or equivalent) which shuts off sump heat if coolant is too warm or is not circulating.

X.D.1.d. Minimized Openings: Degreaser entrance and exit openings shall silhouette work loads so that the average clearance between parts (or parts-and the edge of the degreaser opening) is either:

X.D.1.d.(i) less than 10 centimeters (4 inches) or;

X.D.1.d.(ii) less than 10 percent of the width of the opening

X.D.1.e. Covers shall be provided to close off all the entrance(s) and exit(s) when the conveyor is not in use.

X.D.1.f. A permanent, clearly visible sign shall be mounted on or next to the degreaser. The sign shall list the operating requirements.

#### X.D.2. Operating Requirements

X.D.2.a. Exhaust ventilation shall not exceed 20 m<sup>3</sup>/minute per square meter of degreaser opening (65.6 cf/m per square foot), unless necessary to meet OSHA requirements. Work place fans shall not be located near, nor directed at degreaser openings, unless necessary to meet OSHA requirements. Exhaust flow shall be measured by EPA reference methods 1 and 2 of 40 CFR Part 60.

X.D.2.b. Carry-out emissions shall be minimized by:

X.D.2.b.(i) Racking parts in such a manner to achieve best drainage.

X.D.2.b.(ii) Maintaining the vertical component of conveyor speed at less than 3.3 meters per minute (10.8 feet per minute).

X.D.2.c. Repair solvent leaks immediately, or shut down the degreaser.

X.D.2.d. The water separator shall function with an efficiency sufficient to prevent water from being visible in the solvent exiting the separator.

X.D.2.e. Down-time cover(s) shall be placed over entrances and exits of conveyerized degreasers immediately after the conveyor and exhaust are shut down. Covers shall be retained in position until immediately before start-up.

## **XI. Use of Cutback Asphalt**

### **XI.A. Definitions**

XI.A.1. "Asphalt or Asphalt Cement" The dark-brown to black cementitious material (solid, semi-solid, or liquid in consistency) of which the main constituents are bitumens which occur naturally or as a residue of petroleum refining.

XI.A.2. "Asphalt Concrete" A waterproof and durable paving material composed of dried aggregate, which is evenly coated with hot asphalt cement.

XI.A.3. "Cutback Asphalt or Cutback Asphalt Cement" Any asphalt which has been liquified by blending with a VOC, such as a petroleum solvent diluent or, in the case of some slow cure asphalts (Road Oils), which has been produced directly from the distillation of petroleum.

XI.A.4. "Emulsified Asphalt" Asphalt emulsions produced by combining asphalt and water with emulsifying agent.

Emulsified Asphalt or any other coating or sealant, including but not limited to those produced from petroleum or coal, which contain more than five (5) percent of oil distillate as determined by ASTM Method D-244 is included in this definition.

XI.A.5. "Penetrating Prime Coat" An application of low-viscosity liquid asphalt to an absorbent surface in order to prepare it for overlaying with a layer or layers of asphalt cement or asphalt emulsion and mineral aggregate paving materials.

### **XI.B. Limitations**

#### **XI.B.1. Applicability**

The provisions of this Section XI. apply to the use and storage of cutback asphalt for the paving and maintenance of all public roadways (including alleys), private roadways, parking lots, and driveways only within ozone nonattainment areas.

#### **XI.B.2. Storage**

Stockpiles of aggregate mixed with cutback asphalt are permitted October 1 through February 28 (29). Such storage is not permitted March 1 through September 30 except where it can be demonstrated to the Division that such storage is necessary.

#### **XI.B.3. Use**

Cutback asphalt may be used for any paving purpose October 1 through February 28 (29). No person shall use cutback asphalt or any coating included in the definition of cutback asphalt in Subsection IX.A.3. March 1 through September 30 except as provided below:

XI.B.3.a. If used solely as a penetrating prime coat, or

XI.B.3.b. If the user can demonstrate to the Division that under the conditions of its intended use, there will be no emissions of volatile organic compounds to the ambient air.

#### XI.C. Recordkeeping

During the months of March through September, the person responsible for the use or storage of any cutback asphalt as permitted in Subparagraph 3.a. and b. and Paragraph 2. shall keep records of same, including type and amount of solvent(s) used.

### **XII. Volatile Organic Compound Emissions from Oil and Gas Operations**

#### XII.A. Applicability

XII.A.1. Except as provided in Section XII.A.2. through 5., this Section applies to oil and gas exploration and production operations, natural gas compressor stations and natural gas drip stations:

XII.A.1.a (State Only) that collect, store, or handle condensate in the 8-hour Ozone Control Area or any ozone nonattainment or attainment/maintenance area,

XII.A.1.b. that are located upstream of a natural gas plant,

XII.A.1.c. for which the owner or operator filed, or was required to file, an APEN pursuant to Regulation Number 3, and

XII.A.1.d. (State Only) that emit any amount of uncontrolled actual volatile organic compound emissions with the following exceptions.

XII.A.1.d.(i) (State Only) Volatile organic compounds emitted during the first 90 days from the date of first production for new and modified condensate storage tanks as defined in Section XII.B. shall be equipped with a control device pursuant to Sections XII.D., and comply with applicable monitoring, recordkeeping, and reporting requirements; and

XII.A.1.d.(ii) All dehydrators regardless of uncontrolled actual emissions are subject to XII.H.

XII.A.2. Oil refineries are not subject to this Section XII.

XII.A.3. Natural gas-processing plants and qualifying natural gas compressor stations located in an ozone nonattainment or attainment maintenance area are subject to Section XII.G.

XII.A.4. Glycol natural gas dehydrators located at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas processing plant in an ozone nonattainment or attainment maintenance area are only subject to Sections XII.B. and XII.H.

XII.A.5. The requirements of this section XII.A shall not apply to any owner or operator in any calendar year in which the APENs for all of the atmospheric condensate storage tanks associated with the affected operations owned or operated by such person reflect a total of less than 30 tons-per-year of actual uncontrolled emissions of VOCs in the 8-Hour Ozone Control Area. Such requirements shall, however, apply to such owner or operator in any subsequent calendar year in which the APENs for atmospheric condensate

storage tanks associated with such affected operations reflect a total of 30 tons per year or more of actual uncontrolled emissions of VOCs in the 8-Hour Ozone Control Area.

#### XII.B. Definitions Specific to Section XII

- XII.B.1. "Affected Operations" means oil and gas exploration and production operations, natural gas compressor stations and natural gas drip stations to which this Section XII applies.
- XII.B.2. "Air Pollution Control Equipment", as used in this Section XII, means a combustion device or vapor recovery unit. Air pollution control equipment also means alternative emissions control equipment, pollution prevention devices and processes that comply with the requirements of Section XII.D.2.b. that are approved by the Division.
- XII.B.3. "Atmospheric Storage Tanks or Atmospheric Condensate Storage Tanks" means a type of condensate storage tank that vents, or is designed to vent, to the atmosphere.
- XII.B.4. "Auto-Igniter" means a device which will automatically attempt to relight the pilot flame in the combustion chamber of a control device in order to combust volatile organic compound emissions.
- XII.B.5. "Calendar Week" shall mean a week beginning with Sunday and ending with Saturday.
- XII.B.6. "Condensate Storage Tank" shall mean any tank or series of tanks that store condensate and are either manifolded together or are located at the same well pad.
- XII.B.7. "Downtime" shall mean the period of time when a well is producing and the air pollution control equipment is not in operation.
- XII.B.8. "Existing" shall mean any atmospheric condensate storage tank that began operation before February 1, 2009, and has not since been modified.
- XII.B.9. "Glycol Natural Gas Dehydrator" means any device in which a liquid glycol (including, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water.
- XII.B.10. "Modified or Modification" shall mean any physical change or change in operation of a stationary source that results in an increase in actual uncontrolled volatile organic compound emissions from the previous calendar year that occurs on or after February 1, 2009. For atmospheric condensate storage tanks, a physical change or change in operation includes but is not limited to drilling new wells and recompleting, refracturing or otherwise stimulating existing wells.
- XII.B.11. "New" shall mean any atmospheric condensate storage tank that began operation on or after February 1, 2009.
- XII.B.12. "Stabilized" when used to refer to stored condensate, means that the condensate has reached substantial equilibrium with the atmosphere and that any emissions that occur are those commonly referred to within the industry as "working and breathing losses".
- XII.B.13. (State Only) "Surveillance System" means monitoring pilot flame presence or temperature in a combustion device either by visual observation or with an electronic device to record times and duration of periods where a pilot flame is not detected at least once per day.

XII.B.14. "System-Wide" when used to refer to emissions and emission reductions in Section XII.D., shall mean collective emissions and emission reductions from all atmospheric condensate storage tanks under common ownership within the 8-hour Ozone Control Area or other specific Ozone Nonattainment or Attainment Maintenance Area for which uncontrolled actual volatile organic compound emissions are equal to or greater than two tons per year.

XII.C. General Provisions to Section XII

XII.C.1. General Requirements for Air Pollution Control Equipment – Prevention of Leakage

XII.C.1.a. All air pollution control equipment used to demonstrate compliance with this Section XII. shall be operated and maintained consistent with manufacturer specifications and good engineering and maintenance practices. The owner or operator shall keep manufacturer specifications on file. In addition, all such air pollution control equipment shall be adequately designed and sized to achieve the control efficiency rates required by this Section XII and to handle reasonably foreseeable fluctuations in emissions of volatile organic compounds. Fluctuations in emissions that occur when the separator dumps into the tank are reasonably foreseeable.

XII.C.1.b. All condensate collection, storage, processing and handling operations, regardless of size, shall be designed, operated and maintained so as to minimize leakage of volatile organic compounds to the atmosphere to the maximum extent practicable.

XII.C.1.c. All air pollution control equipment used to demonstrate compliance with this Section XII. must meet a control efficiency of at least 95% unless otherwise provided in Section XII.D.2.B. Failure to properly install, operate, and maintain air pollution control equipment at the locations indicated in the Division-approved spreadsheet shall be a violation of this regulation.

XII.C.1.d. If a combustion device is used to control emissions of volatile organic compounds to comply with Section XII.D. it shall be enclosed, have no visible emissions, and be designed so that an observer can, by means of visual observation from the outside of the enclosed combustion device, or by other means approved by the Division, determine whether it is operating properly.

XII.C.1.e. (State Only) All combustion devices used to control emissions of volatile organic compounds to comply with Section XII.D. shall be equipped with and operate an auto-igniter as follows:

XII.C.1.e.(i) (State Only) For all new and modified condensate storage tanks controlled by a combustion device, auto-igniters shall be installed and operational, beginning the date of first production after any new tank installation or tank modification.

XII.C.1.e.(ii) (State Only) For all existing condensate storage tanks controlled by a combustion device in order to comply with the emissions control requirements of Sections XII.D.2., auto-igniters shall be installed and operational beginning May 1, 2009 for condensate storage tanks with actual uncontrolled emissions of greater than or equal to 50 tons per year, and beginning May 1, 2010 for all other existing condensate storage tanks controlled by a combustion device, or within 180 days from first having installed the combustion device, whichever date comes later.

XII.C.1.f. (State Only) If a combustion device is used to control emissions of volatile organic compounds, surveillance systems shall be employed and operational as follows:

XII.C.1.F.(i) (State Only) Beginning May 1, 2010, for all existing condensate storage tanks with uncontrolled actual emissions of 100 tons per year or more based on data from the previous twelve consecutive months.

XII.C.1.F.(ii) (State Only) For all new and modified condensate storage tanks controlled by a combustion device for the first 90 days surveillance systems shall be employed and operational beginning 180 days from the date of first production after the tank was newly installed, or after the well was newly drilled, re-completed, re-fractured or otherwise stimulated, if uncontrolled actual emissions projected for the first twelve months based on data from the first 90 days of operation from the condensate storage tank are 100 tons or more of uncontrolled VOCs.

XII.C.2. The emission estimates and emission reductions required by this Section XII.D. shall be demonstrated using one of the following emission factors:

XII.C.2.a. In the 8-Hour Ozone Control Area

XII.C.2.a.(i) For atmospheric condensate storage tanks at oil and gas exploration and production operations, a default emission factor of 13.7 pounds of volatile organic compounds per barrel of condensate shall be used unless a more specific emission factor has been established pursuant to Section XII.C.2.a.(ii)(B). The Division may require a more specific emission factor that complies with Section XII.C.2.a.(ii)(B).

XII.C.2.a.(ii) For atmospheric condensate storage tanks at natural gas compressor stations and natural gas drip stations, a specific emission factor established pursuant to this Section XII.c.2.a.(ii) shall be used. A specific emission factor developed pursuant to Section XII.C.2.a.(ii)(B) may also be used for atmospheric storage tanks at oil and gas exploration and production operations and, once established, or required by the Division, shall be used for such operations.

XII.C.2.a.(ii)(A) For atmospheric condensate storage tanks at natural gas compressor stations and natural gas drip stations a source may use a specific emissions factor that was used for reporting emissions from the source on APENs filed on or before February 28, 2003. The Division may, however, require the source to develop and use a more recent specific emission factor pursuant to Section XII.C.2.a.(ii)(B) if such a more recent emission factor would be more reliable or accurate.

XII.C.2.a.(ii)(B) Except as otherwise provided in XII.C.2.a.(i), a specific emissions factor shall be one for which the Division has no objection, and which is based on collection and analysis of a representative sample of condensate pursuant to a test method approved by the Division and EPA. The Division shall consult with and provide EPA 30 days in which to comment on the test method. EPA shall be deemed to have approved the test method for purposes of this Section XII.C.2.a.(ii) if it does not object during such 30-day period.

XII.C.2.b. (State Only) For any other Ozone Nonattainment Area or Attainment/Maintenance Areas

XII.C.2.b.(i) (State Only) For atmospheric condensate storage tanks at oil and gas exploration and production operations, the source shall use a default basin-specific uncontrolled volatile organic compound emission factor established by the Division unless a source-specific emission factor has been established pursuant to Section XII.C.2.b.(iii). If the Division has established no default emission factor, if the Division has reason to believe that the default emission factor is no longer representative, or if it deems it otherwise necessary, the Division may require use of an alternative emission factor that complies with Section XII.C.2.b.(iii).

XII.C.2.b.(ii) (State Only) For atmospheric condensate storage tanks at natural gas compressor stations and natural gas drip stations, the source shall use a source-specific volatile organic compound emission factor established pursuant to Section XII.C.2.b.(iii). If the Division has reason to believe that the source-specific emission factor is no longer representative, or if it deems it otherwise necessary, the Division may require use of an alternative emission factor that complies with Section XII.C.2.b.(iii).

XII.C.2.b.(iii) (State Only) Establishment of or Updating Approved Emission Factors

XII.C.2.b.(iii)(A) (State Only) The Division may require the source to develop and/or use a more recent default basin-specific or source-specific volatile organic compound emission factor pursuant to Section XII.C.2.b., if such emission factor would be more reliable or accurate.

XII.C.2.b.(iii)(B) (State Only) For atmospheric condensate storage tanks at oil and gas exploration and production operations, the source may use a source-specific volatile organic compound emission factor for which the Division has no objection, and which is based on collection and analysis of a representative sample of condensate pursuant to a test method approved by the Division.

XII.C.2.b.(iii)(C) (State Only) For atmospheric storage tanks at natural gas compressor stations and natural gas drip stations, a source may use a volatile organic compound emissions factor that was used for reporting emissions from the source on APENs filed on or before February 28, 2003, or an alternative source-specific volatile organic compound emission factor established pursuant to Section XII.C.2.b.

XII.C.2.b.(iii)(D) (State Only) A default basin-specific volatile organic compound emissions factor shall be one for which the Division has no objection, and which is based on collection and analysis of a representative sample of condensate or an alternative method, pursuant to a test method approved by the Division, except as otherwise provided in XII.C.2.b.(i).

XII.C.2.b.(iii)(E) (State Only) A source-specific volatile organic compound emissions factor shall be one for which the Division has no

objection, and which is based on collection and analysis of a representative sample of condensate pursuant to a test method approved by the Division.

#### XII.D. Emission Controls

The owners and operators of affected operations shall employ air pollution control equipment to reduce emissions of volatile organic compounds from atmospheric condensate storage tanks associated with affected operations by the dates and amounts listed below. Emission reductions shall not be required for each and every unit, but instead shall be based on overall reductions in uncontrolled actual emissions from all the atmospheric storage tanks associated with the affected operations for which the owner or operator filed, or was required to file, an APEN pursuant to Regulation Number 3, due to either having exceeded reporting thresholds or retrofitting with air pollution control equipment in order to comply with system-wide control requirements.

##### XII.D.1. New and Modified Condensate Tanks

Beginning February 1, 2009, owners or operators of any new or modified atmospheric condensate storage tank at exploration and production sites, shall collect and control emissions by routing emissions to and operating air pollution control equipment pursuant to Section XII.D. The air pollution control equipment shall have a control efficiency of at least 95%, and shall control volatile organic compounds during the first 90 calendar days after the date of first production after the tank was newly installed, or after the well was newly drilled, re-completed, re-fractured or otherwise stimulated. The air pollution control equipment and associated monitoring equipment required pursuant to XII.C.1. may be removed after the first 90 calendar days as long as the source can demonstrate compliance with the applicable system-wide standard.

##### XII.D.2. System-Wide Control Strategy

XII.D.2.a. (State Only) The owners and operators of all atmospheric condensate storage tanks that emit greater than two tons per year of actual uncontrolled volatile organic compounds and are subject to this Section XII.D.2.a. in the 8-hour Ozone Control Area or any other specific Ozone Nonattainment area or Attainment/Maintenance Area shall employ air pollution control equipment to reduce emissions of volatile organic compounds from atmospheric condensate storage tanks by the dates and amounts listed below. The dates and requisite reductions are as follows:

XII.D.2.a.(i) For the period May 1 through September 30, 2005 such emissions shall be reduced by 37.5% from uncontrolled actual emissions on a daily basis.

XII.D.2.a.(ii) For the period of May 1 through September 30 of 2006, such emissions shall be reduced by 47.5% from uncontrolled actual emissions on a daily basis.

XII. D.2.a.(iii) For the period of May 1 through September 30 of each year from 2007 through 2008, such emissions shall be reduced by 75% from uncontrolled actual emissions on a weekly basis.

XII.D.2.a.(iv) Emission reductions achieved between January 1 and April 30, 2005 shall be averaged with emission reductions achieved between October 1 and December 31, 2005. For these two time periods, emissions shall be reduced by 30% from uncontrolled actual emissions

and shall be calculated as an average of the emission reductions achieved during the seven months covered by the two periods.

XII.D.2.a.(v) Emission reductions achieved between January 1 and April 30, 2006 shall be averaged with emission reductions achieved between October 1 and December 31, 2006. Emissions shall be reduced by 38% from uncontrolled actual emissions, calculated as an average of the emission reduction achieved during the seven months covered by the two periods.

XII.D.2.a.(vi) For the period between January 1, 2007 and April 30, 2007, such emissions shall be reduced by 38% from uncontrolled actual emissions, For the period between October 1, 2007, and December 31, 2007, such emissions shall be reduced by 60% from uncontrolled actual emissions, calculated for each period as an average of the emission reduction achieved during the months covered by each period.

XII.D.2.a.(vii) Beginning with the year 2008, and each year thereafter, emission reductions achieved between January 1 and April 30 shall be averaged with emission reductions achieved between October 1 and December 31. Emissions shall be reduced by 70% from uncontrolled actual emissions, calculated as an average of the emission reduction achieved during the seven months covered by the two periods with the exception of XII.D.2.a.(viii) - XII.D.2.a.(x).

XII.D.2.a.(viii) For the calendar weeks that include May 1, 2009 through April 30, 2010, such emissions shall be reduced by 81% from uncontrolled actual emissions on a calendar weekly basis from May 1 through September 30 and 70% from uncontrolled actual emissions on a calendar monthly basis during October 1 through April 30.

XII.D.2.a.(ix) For the calendar weeks that include May 1, 2010 through April 30, 2011, such emissions shall be reduced by 85% from uncontrolled actual emissions on a calendar weekly basis in the May 1 through September 30 and 70% from uncontrolled actual emissions on a calendar monthly basis during October 1 through April 30.

XII.D.2.a.(x) For the calendar weeks that include May 1, 2011 through April 30, 2013, such emissions shall be reduced by 90% from uncontrolled actual emissions on a calendar weekly basis in the May 1 through September 30 and 70% from uncontrolled actual emissions on a calendar monthly basis during October 1 through April 30.

XII.D.2.b. Alternative emissions control equipment and pollution prevention devices and processes installed and implemented after June 1, 2004, shall qualify as air pollution control equipment, and may be used in lieu of, or in combination with, combustion devices and/or vapor recovery units to achieve the emission reductions required by this Section XII.D.2.a., if the following conditions are met:

XII.D.2.b.(i) The owner or operator obtains a construction permit authorizing such use of the alternative emissions control equipment or pollution prevention device or process. The proposal for such equipment, device or process shall comply with all regulatory provisions for construction permit applications and shall include the following:

- XII.D.2.b.(i)(A) A description of the equipment, device or process;
- XII.D.2.b.(i)(b) A description of where, when and how the equipment, device or process will be used;
- XII.D.2.b.(i)(C) The claimed control efficiency and supporting documentation adequate to demonstrate such control efficiency;
- XII.D.2.b.(i)(D) An adequate method for measuring actual control efficiency; and
- XII.D.2.b.(i)(E) Description of the records and reports that will be generated to adequately track emission reductions and implementation and operation of the equipment, device or process, and a description of how such matters will be reflected in the spreadsheet and annual report required by Sections XII.F.4 and XII.F.5.

XII.D.2.b.(ii) Public notice of the application is provided pursuant to Regulation Number 3, Part B, Section III.C.4.

XII.D.2.b.(iii) EPA approves the proposal. The Division shall transmit a copy of the permit application and any other materials provided by the applicant, all public comments, all Division responses and the Division's permit to EPA Region 8. If EPA fails to approve or disapprove the proposal within 45 days of receipt of these materials, EPA shall be deemed to have approved the proposal.

## XII.E. Monitoring

The owner or operator of any condensate storage tank that is being controlled pursuant to this Section XII shall inspect or monitor the Air Pollution Control Equipment at least weekly to ensure that it is operating properly.

XII.E.1. Tanks controlled by Air Pollution Control Equipment other than a combustion device shall follow manufacturer's recommended maintenance. Air Pollution Control Equipment shall be periodically inspected to ensure proper maintenance and operation according to the Division-approved operation and maintenance plan.

XII.E.2. (State Only) New and modified tanks controlled by a combustion device shall be inspected on a weekly basis to document that the required auto-igniter is properly functioning by either visible observation or other means approved by the Division and check and document that the valves for piping of gas to the pilot light are open.

XII.E.3. The owner or operator of tanks subject to the system-wide control strategy under Section XII.D.2.a. that have installed combustion devices shall either:

XII.E.3.a. Check for and document on a weekly basis that the pilot light is lit by either visible observation or other means approved by the Division and check for and document that the valves for piping of gas to the pilot light are open; and/or

XII.E.3.b. (State Only) Use a surveillance system to maintain records on combustion device operation.

XII.E.4. The owner or operator of all tanks subject to Section XII.D. shall document the time and date of each inspection, the person conducting the inspection, a notation that each of the checks required under this Section XII.E. were completed, description of any problems observed during the inspection, description and date of any corrective actions taken, and name of individual performing corrective actions. Further, all tanks subject to Section XII.D. shall comply with the following:

XII.E.4.a. For combustion devices, the owner or operator shall visually check for and document, on a weekly basis, the presence or absence of smoke;

XII.E.4.b. For vapor recovery units, the owner or operator shall check for and document on a weekly basis that the unit is operating and that vapors from the condensate tank are being routed to the unit;

XII.E.4.c. For all control devices, the owner or operator shall check for and document on a weekly basis that the valves for the piping from the condensate tank to the air pollution control equipment are open;

XII.E.4.d. For all atmospheric condensate storage tanks, the owner or operator shall check for and document on a weekly basis that the thief hatch is closed and latched.

XII.E.5. (State Only) For atmospheric condensate storage tanks equipped with an surveillance system or other Division-approved monitoring system, the owner or operator shall check weekly that the system is functioning properly and that necessary information is being collected. Any loss of data or failure to collect required data may be treated by the Division as if the data were not collected.

#### XII.F. Recordkeeping and Reporting

The owner or operator of any atmospheric condensate storage tank subject to control pursuant to Section XII.D.2. shall maintain records and submit reports to the Division as required:

XII.F.1. The AIRS number assigned by the Division shall be marked on all condensate storage tanks required to file an APEN.

XII.F.2. If air pollution control equipment is required to comply with Section XII.D.2. visible signage shall be located with the control equipment identifying the AIRS number for each atmospheric condensate storage tank that is being controlled by that equipment.

XII.F.3. Recordkeeping for Tanks Subject to the System-Wide Control Strategy under Section XII.D.2.

The owner or operator shall, at all times, track the emissions and specifically volatile organic compound emissions reductions on a calendar weekly and calendar monthly basis to demonstrate compliance with the applicable emission reduction requirements of Section XII.D.2. This shall be done by maintaining a Division-approved spreadsheet of information describing the affected operations, the air pollution control equipment being used, and the emission reductions achieved, as follows.

XII.F.3.a. The Division-approved spreadsheet shall:

XII.F.3.a(i) List all atmospheric condensate storage tanks subject to this Section XII by name and AIRS number, or if no AIRS number has been assigned the site location. The spreadsheet also shall list the monthly

production volumes for each tank. The spreadsheet shall list the most recent measurement of such production at each tank, and the time period covered by such measurement of production.

- XII.F.3.a(ii) List the emission factor used for each atmospheric condensate storage tank. The emission factors shall comply with Section XII.C.2.
  - XII.F.3.a(iii) List the location and control efficiency value for each unit of air pollution control equipment. Each atmospheric condensate storage tank being controlled shall be identified by name and an AIRS number.
  - XII.F.3.a(iv) List the production volume for each tank, expressed as a weekly and monthly average based on the most recent measurement available. The weekly and monthly average shall be calculated by averaging the most recent measurement of such production, which may be the amount shown on the receipt from the refinery purchaser for delivery of condensate from such tank, over the time such delivered condensate was collected. The weekly and monthly average from the most recent measurement will be used to estimate weekly and monthly volumes of controlled and uncontrolled actual emissions for all weeks and months following the measurement until the next measurement is taken.
  - XII.F.3.a(v) Show the calendar weekly and calendar monthly-uncontrolled actual emissions and the calendar weekly and calendar monthly controlled actual emissions for each atmospheric condensate storage tank.
  - XII.F.3.a(vi) Show the total system-wide calendar weekly and calendar monthly-uncontrolled actual emissions and the total system-wide calendar weekly and calendar monthly controlled actual emissions.
  - XII.F.3.a(vii) Show the total system-wide calendar weekly and calendar monthly percentage reduction of emissions.
  - XII.F.3.a(viii) Note any downtime of air pollution control equipment, and shall account for such downtime in the weekly control efficiency value and emission reduction totals. The notations shall include the date, time and duration of any scheduled downtime. For any unscheduled downtime, the spreadsheet shall record the date and time the downtime was discovered and the date and time the air pollution control equipment was last observed to be operating.
  - XII.F.3.a(ix) Be maintained in a manner approved by the Division and shall include any other information requested by the Division that is reasonably necessary to determine compliance with this Section XII.
  - XII.F.3.a(x) Be updated on a calendar weekly and calendar monthly basis and shall be promptly provided by e-mail or fax to the Division upon its request. The U.S. mail may also be used if acceptable to the Division.
- XII. F.3.b. Failure to properly install, operate, and maintain air pollution control equipment at the locations indicated in the spreadsheet shall be a violation of this regulation.

XII. F.3.c. A copy of each calendar weekly and calendar monthly spreadsheet shall be retained for five years. A spreadsheet may apply to more than one week if there are no changes in any of the required data and the spreadsheet clearly identifies the weeks it covers. The spreadsheet may be retained electronically. However, the Division may treat any loss of data or failure to maintain the Division-approved spreadsheet, as if the data were not collected.

XII. F.3.d. Each owner or operator shall maintain records of the inspections required pursuant to Section XII.E. These records shall include the time and date of the inspection, the person conducting the inspection, a notation that each of the checks required under Section XII.C. and XII.E. were completed and a description of any problems observed during the inspection, and a description and date of any corrective actions taken.

XII.F.3.e. (State Only) Each owner or operator shall maintain records of required surveillance system or other monitoring data and shall make these records available promptly upon Division request.

XII.F.3.f. (State Only) Each owner or operator shall maintain records on when an atmospheric condensate storage tank is newly installed, or when a well is newly drilled, re-completed, re-fractured or otherwise stimulated. Records shall be maintained per well associated with each tank and the date of first production associated with these activities.

#### XII.F.4. Reporting for Tanks Subject to the System-Wide Control Strategy under Section XII.D.2.a.

On or before April 30, 2006, and semi-annually by April 30 and November 30 of each year thereafter, each owner or operator shall submit a report using Division-approved format describing the air pollution control equipment used during the preceding calendar year (for the April 30 report) and during the preceding ozone season (for the November 30 report) and how each company complied with the emission reductions required by Section XII.D.2. during those periods for the 8-hour Ozone Control Area or other specific Ozone Non-attainment or Attainment-Maintenance area. Such reports shall be submitted to the Division on a Division-approved form provided for that purpose.

XII.F.4.a. The report shall list all condensate storage tanks subject or used to comply with Section XII.D.2. and the production volumes for each tank. Production volumes may be estimated by the amounts shown on the receipt from refinery purchasers for delivery of condensate from such tanks.

XII. F.4.b. The report shall list the emission factor used for each tank. The emission factors shall comply with Section XII.C.2.

XII. F.4.c. The report shall list the location and control efficiency value for each piece of air pollution control equipment, and shall identify the atmospheric condensate storage tanks being controlled by each.

XII. F.4.d. The April 30 report shall show the calendar monthly-uncontrolled actual emissions and the controlled actual emissions for each atmospheric condensate storage tank for January 1 through April 30, May 1 through September 30 and October 1 through December 31 of the previous year. The November 30 report shall show such calendar weekly information for the weeks including May 1st through September 30th only.

- XII. F.4.e. The April 30 report shall show the calendar monthly total system-wide uncontrolled actual emissions and the total system-wide controlled actual emissions for January 1 through April 30, May 1 through September 30 and October 1 through December 31 of the previous year. The November 30 report shall show such calendar weekly information for the weeks including May 1st through September 30th only.
- XII. F.4.f. The April 30 report shall show the calendar monthly total system-wide percentage reduction of emissions for May 1 through September 30 of the previous year, and for the combined periods of January 1 through April 30 and October 1 through December 31 of the previous year. The November 30 report shall show such calendar weekly information for the weeks including May 1 through September 30 period only.
- XII. F.4.g. The report shall note any downtime of air pollution control equipment, and shall account for such downtime in the weekly control efficiency value and emission reduction totals. The notations shall include the date, time and duration of any scheduled downtime. For any unscheduled downtime, the date and time the downtime was discovered and the last date the air pollution control equipment was observed to be operating should be recorded in the report.
- XII. F.4.h. The report shall state whether the required emission reductions were achieved on a weekly basis during the preceding ozone season (calendar weeks including May 1 through September 30) for the November 30 report, and whether the required emission reductions were achieved on a calendar monthly basis during the preceding year for the April 30 report. If the required emission reductions were not achieved, the report shall state why not, and shall identify steps being taken to ensure subsequent compliance.
- XII. F.4.i. The report shall include any other information requested by the Division that is reasonably necessary to determine compliance with this Section XII.
- XII. F.4.j. A copy of each semi-annual report shall be retained for five years.
- XII. F.4.k. In addition to submitting the semi-annual reports, on or before the 30th of each month commencing in June 2007, the owner or operator of any condensate storage tank that is required to control volatile organic compound emissions pursuant to Sections XII.A. and XII.D. shall notify the Division of any instances where the air pollution control equipment was not properly functioning during the previous month. The report shall include the time and date that the equipment was not properly operating, the time and date that the equipment was last observed operating properly, and the date and time that the problem was corrected. The report shall also include the specific nature of the problem, the specific steps taken to correct the problem, the AIRS number of each of the condensate tanks being controlled by the equipment or if no AIRS number has been assigned the site name, and the estimated production from those tanks during the period of non-operation.
- XII. F.4.l. Commencing in 2007, on or before April 30 of each year, the owner or operator shall submit a list identifying by name and AIRS number or if no AIRS number has been assigned the site name, each condensate storage tank that is being controlled to meet the requirements set forth in this Section XII.D.2. On the 30th of each month during ozone season (May through September) and on November 30 and February 28, the owner or operator shall submit a list identifying any condensate storage tank whose control status has changed since submission of the previous list.

XII.F.4.m. (State Only) Semi-annual report submittals shall be signed by a responsible official who shall also sign the Division-approved compliance certification form for atmospheric condensate storage tanks. The compliance certification shall include both a certification of compliance with all applicable requirements of this Section XII. If any non-compliance is identified, citation, dates and durations of deviations from this Section XII., associated reasoning, and compliance plan and schedule to achieve compliance. Compliance certifications for state only conditions shall be identified separately from compliance certifications required under the State Implementation Plan.

XII.F.4.n. (State Only) Each Division-approved self-certification form, and compliance certification submitted pursuant to this Section XII. shall contain a certification by a responsible official of the truth, accuracy and completeness of such form, report or certification stating that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

XII.F.5. The record-keeping and reporting required in Sections XII. above shall not apply to the owner or operator of any natural gas compressor station or natural gas drip station that is authorized to operate pursuant to a construction permit or Title V operating permit issued by the Division if the following criteria are met:

XII.F.5.a. Such permits are obtained by the owner or operator on or after the effective date of this provision and contain the provisions necessary to ensure the emissions reductions required by this Section XII.A;

XII.F.5.b. The owners and operators of such natural gas compressor stations or natural gas drip stations do not own or operate any exploration and production operation(s); and

XII.G. (State Only) Gas-processing plants located in the 8-hour Ozone Control Area or any specific Ozone Nonattainment or Attainment/Maintenance Area shall comply with requirements of this Sections XII.G., as well as the requirements of Sections XII.B., XII.C.1.a., XII.C.1.b., XII.H. and XVI.

XII.G.1. For fugitive VOC emissions from leaking equipment, the leak detection and repair (LDAR) program as provided at 40 C.F.R. Part 60, Subpart KKK ( see Regulation Number 6, Part A, Subpart KKK) shall apply, regardless of the date of construction of the affected facility.

XII.G.2. Air pollution control equipment shall be installed and properly operated to reduce emissions of volatile organic compounds from any atmospheric condensate storage tank (or tank battery) used to store condensate that has not been stabilized that has uncontrolled actual emissions of greater than or equal to two tons per year. Such air pollution control equipment shall have a control efficiency of at least 95% on a rolling 12-month basis.

XII.G.3. Existing natural gas processing plants within the 8-hour Ozone Control Area shall comply with the requirements of this Section XII.G. by May 1, 2005. (State Only) Existing natural gas processing plants within any new Ozone Nonattainment or Attainment/Maintenance Area shall comply with this regulation within three years after the nonattainment designation.

XII.G.4. (State Only) The provisions of this Section XII.B., and Sections XII.C., and XVI., shall apply upon the commencement of operations to any natural gas processing plant that

commences operation in the 8-Hour Ozone Control Area or Ozone Nonattainment or Attainment/Maintenance Area after the effective date of this subsection.

XII.G.5. The requirements of this Section XII. shall not apply to the owner or operator of any natural gas compressor station or natural gas drip station located in an Ozone Nonattainment or Attainment/Maintenance Area if:

XII.G.5.a. Air pollution control equipment is installed and properly operated to reduce emissions of volatile organic compounds from all atmospheric condensate storage tanks (or tank batteries) that have uncontrolled actual emissions of greater than or equal to two tons per year;

XII.G.5.b. The air pollution control equipment is designed to achieve a VOC control efficiency of at least 95% on a rolling 12-month basis and meets the requirements of Sections XII.C.1.A. and XII.C.1.B;

XII.G.5.c. The owner or operator of such natural gas compressor station or natural gas drip station does not own or operate any exploration and production facilities in the Ozone Non-attainment or Attainment-maintenance Area; and

XII.G.5.d. The addition of the air pollution control equipment is memorialized in a construction permit or Title V operating permit issued by the Division.

XII.G.6. A natural gas compressor station or natural gas drip station subject to this Section XII.G. at which a glycol natural gas dehydrator and/or natural gas-fired stationary or portable engine is operated shall be subject to Sections XII.H. and/or XVI.

XII.H. (State Only) On or after May 1, 2005, any still vent and vent from any gas-condensate-glycol (GCG) separator (flash separator or flash tank), if present, on a glycol natural gas dehydrator located at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas-processing plant in the 8-Hour Ozone Control Area or any Ozone Nonattainment Area or Attainment/Maintenance Area shall reduce uncontrolled actual emissions of volatile organic compounds by at least 90 percent through the use of a condenser or air pollution control equipment. This Section XII.C shall not apply to any single natural gas dehydrator, or grouping of dehydrators at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas-processing plant, with uncontrolled actual emissions of volatile organic compounds of less than 15 tons per year. To determine if a grouping of dehydrators exceeds the 15 tons per year threshold aggregate emissions from all dehydrators on site (contiguous and adjacent). The control requirement in this Section XII.H. shall apply to each natural gas dehydrator within a grouping that has actual uncontrolled emissions above one ton per year. The control requirement in this Section XII.H. shall not apply to a natural gas dehydrator with emissions below the APEN reporting thresholds in Regulation Number 3, Part A, Section II.D that is part of a grouping of dehydrators, but the emissions from such dehydrator shall be included in the calculation.

### **XIII. Graphic Arts**

XIII.A. General Provisions

XIII.A.1. Definitions

For the purpose of this section, the following definitions apply:

XIII.A.1.a. "Flexographic Printing" means the application of words, designs, and pictures to a substrate by means of a roll printing technique in which the pattern

to be applied is raised above the printing roll and the image carrier is made of rubber or other elastometric materials.

- XIII.A.1.b. "Packaging Rotogravure Printing" means rotogravure printing upon paper, paperboard, metal foil, plastic film, and other substrates, which are, in subsequent operations, formed into packaging products and labels for articles to be sold.
- XIII.A.1.c. "Publication Rotogravure Printing" means rotogravure printing upon paper, which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials.
- XIII.A.1.d. "Roll Printing" means the application of words, designs, and pictures to a substrate usually by means of a series of hard rubber or steel rolls each with only partial coverage.
- XIII.A.1.e. "Rotogravure Printing" means the application of words, designs, and pictures to a substrate by means of a roll printing technique, which involves an intaglio or recessed image areas in the form of cells.

#### XIII.A.2.Applicability

- XIII.A.2.a. This section applies to all packaging rotogravure, publication rotogravure, and flexographic printing facilities whose potential emissions of volatile organic compounds before control (determined at design capacity and 8760 hrs/year, or at maximum production, and accounting for any capacity or production limitations in a federally-enforceable permit) are equal to or more than 90,000 Kg per year (100 tons/year). Potential emissions are to be estimated by extrapolating historical records of actual consumption of solvent and ink. (e.g., the historical use of 20 gallons of ink for 4,000 annual hours would be extrapolated to 43.8 gallons for 8760 hours.)The before-control volatile organic compound emissions calculations shall be the summation of all volatile organic compounds in the inks and solvents (including cleaning liquids) used.

#### XIII.B. Provisions for Specific Processes

- XIII.B.1.No owner or operator of a facility subject to this section and employing VOC-containing ink shall operate, cause, allow, or permit the operation of the facility unless:
- XIII.B.1.a. The volatile fraction of ink, as it is applied to the substrate, contains 25.0 percent or less (by volume) of VOC and 75.0 percent or more (by volume) of water; or
- XIII.B.1.b. The ink (minus water) as it is applied to the substrate, contains 60.0 percent or more (by volume) non-volatile material; or
- XIII.B.1.c. The owner or operator installs and operates a control device and capture system in accordance with Paragraphs XIII.B.2. and 3; or
- XIII.B.1.d. A combination of solvent-borne inks and low solvent inks that achieve a 70% (volume) overall reduction of solvent usage (compared to an all solvent borne ink usage) is used; or

XIII.B.1.e. Flexographic and packaging rotogravure printing facilities limit emissions to 0.5 pounds of VOC per pound of solids in the ink. The limit includes all solvent added to the ink: solvent in the purchased ink, solvent added to cut the ink to achieve desired press viscosity, and solvent added to ink on the press to maintain viscosity during the press run. (Publication rotogravure facilities shall not use this option); or

XIII.B.1.f. Crossline averaging is used. The requirements of Section IX.A.5.d apply.

XIII.B.2.A capture system shall be used in conjunction with the emission control system in Subparagraph B.1.c. (above). The design and operation of a capture system shall be consistent with good engineering practice, and in conjunction with control equipment shall be required to provide for an overall reduction in volatile organic compound emissions of at least:

XIII.B.2.a. 75.0 percent where a publication rotogravure process is employed;

XIII.B.2.b. 65.0 percent where a packaging rotogravure process is employed; or

XIII.B.2.c. 60.0 percent where a flexographic printing process is employed.

XIII.B.3.The design, operation, and efficiency of any capture system used in conjunction with any emission control system shall be certified in writing by the source owner or operator and approved by the Division. Testing of any capture system may be required by the Division on a case-by-case basis, in cases where a total enclosure is not used or when material balance results are questionable. Testing of capture system efficiency shall meet the requirements of Subsection IX.A.5.e.

XIII.B.4.The overall reduction in VOC emissions specified in Subsection B.2 above shall be calculated by material balance methods approved by the Division, or by determination of capture and control device efficiencies. The overall VOC emission reduction rate equals the (percent capture efficiency X percent control device efficiency)/100.

### XIII.C. Testing and Monitoring

The owner or operator of a source subject to the requirements of this section is also subject to the requirements of Section IX.A.3., IX.A.7, IX.A.9, and IX.A.10. In Section IX.A.3., EPA reference method 24A shall be the test method used for publication rotogravure inks, while EPA Reference method 24 data is acceptable for all other inks. Test methods as set forth in Appendix A, Part 60, Chapter I, Title 40, of the Code of Federal Regulations (CFR), in effect July 1, 1993.

XIII.D. The owner or operator of a source subject to the requirements of this section is also subject to the requirements of Section IX.A.8. "A Guideline for Graphic Arts Calculations" shall be used for compliance determination.

## XIV. Pharmaceutical Synthesis

### XIV.A. General Provisions

#### XIV.A.1. Applicability

This section applies to all sources of volatile organic compounds associated with pharmaceutical manufacturing activities, including, but not limited to, reactors, distillation

units, dryers, storage of VOCs, extraction equipment, filters, crystallizers, and centrifuges.

XIV.A.2. Exemptions

Extraction of organic substances from animal or vegetable material; fermentation and culturing; formulation and packaging of pharmaceutical or medicinal products.

XIV.A.3. Definitions

For the purpose of this section, the following definitions apply:

XIV.A.3.a. "Control System" means any number of control devices, including condensers, which are designed and operated to reduce the quantity of VOC emitted to the atmosphere.

XIV.A.3.b. "Pharmaceutical" means a medicine or drug which appears in the United States Pharmacopoeia National Formulary, or which is so designated by the National Drug Code of the United States FDA Bureau of Drugs.

XIV.A.3.c. "Production Equipment Exhaust System" means a device for collecting and directing out of the work area VOC fugitive emissions from reactor openings, centrifuge openings, and other vessel openings for the purpose of protecting workers from excessive VOC exposure.

XIV.A.3.d. "Reactor" means a vat or vessel, which may be jacketed to permit temperature control, designed to contain chemical reactions.

XIV.A.3.e. "Separation Operation" means a process that separates a mixture of compounds and solvents into two or more components. Specific mechanisms include, but are not limited to, extraction, centrifugation, filtration, distillation, and crystallization.

XIV.A.3.f. "Synthesized Pharmaceutical Manufacturing" means manufacture of pharmaceutical products by chemical synthesis. It includes the manufacture of chemical intermediates (of sufficient purity) which are typically used by the pharmaceutical industry as precursors to finished mixtures of chemicals. (Thus, it excludes those chemical processes which are not directed at creating finished pharmaceutical or chemical intermediates to finished pharmaceuticals.)

XIV.B. Provisions for Specific Processes

XIV.B.1. The owner or operator of a facility subject to this section shall control the volatile organic compound emissions from each vent which has the potential to emit 6.80 kg/day (15 lb./day) or more of VOC from reactors, distillation operations, crystallizers, centrifuge and vacuum dryers. Surface condensers or equivalent controls shall be used, provided that, if surface condensers are used, the condenser outlet gas temperature shall not exceed the following values:

VOCs True Vapor Pressure\* at 20° in torr (and psia) from (minimum) up to \*\* (maximum)

Maximum temperature of Gas Stream immediately exiting the condenser

0-26(0-0.5)

35°C (95°F)

26-52(0.5-1.0)	25°C(77°F)
52-78(1.0-1.5)	10°C(50°F)
78-150(1.5-2.9)	0°C(32°F)
150-300(2.9-5.8)	-15°C(5°F)
Greater than 300(Greater than 5.8)	-25°C(-13°F)

\*The calculation methods for gases containing more than one condensible component are complex. As a simplification, the temperature necessary for control by condensation can be roughly approximated by the weighted average of the temperatures necessary for condensation of each VOC considered separately but at concentrations equal to the total organic concentration.

\*\*But not including the maximum value of the range.

- XIV.B.2. Division approval shall be required for control equipment used to control VOCs of 570 torr (11 psia) and above.
- XIV.B.3. The owner or operator of a facility subject to this section shall reduce the VOC emissions from each air dryer and production equipment exhaust system:
- XIV.B.3.a. By at least 90 percent if emissions are 150 kg/day (330 lbs/day) or more of VOC, or,
- XIV.B.3.b. To 15.0 kg/day (33 lb/day) or less if emissions are less than 150 kg/day (330 lb/day) of VOC.
- XIV.B.4. The owner or operator of a facility subject to this section shall:
- XIV.B.4.a. Provide a vapor balance system or equivalent control that is at least 90.0 percent effective in reducing emissions from truck or railcar deliveries to storage tanks with capacities greater than 7,570 liters (2,000 gallons) that store VOC with true vapor pressure greater than 210 torr (4.1 psia) at 20°C; and,
- XIV.B.4.b. Install pressure/vacuum conservation vents set at plus or minus 0.2 kPa on all storage tanks that store VOC with true vapor pressures greater than 10.0 kPa (1.5 psi) at 20°C.
- XIV.B.5. The owner or operator of a facility subject to this section shall enclose all centrifuges, rotary vacuum filters, and other filters having an exposed liquid surface, where the liquid contains VOC and exerts a total VOC true vapor pressure of 26 torr (0.5 psia) or more at 20°C.
- XIV.B.6. The owner or operator of a synthesized pharmaceutical facility subject to this section shall install covers on all in-process tanks containing a volatile organic compound at any time. These covers shall remain closed unless sampling, maintenance, short-duration production procedures or inspection procedures require access.
- XIV.B.7. The owner or operator of a facility subject to this section shall repair all leaks from which a liquid, containing VOC, can be observed running or dripping. The repair shall be completed the first time the equipment is off-line for a period of time long enough to complete the repair, except that no leak shall go unrepaired for more than 14 days after initial detection unless the Division issues written approval.

XIV.B.8. Each surface condenser shall have at least one temperature indicator with its sensor located in the outlet gas stream.

XIV.C. Testing and Monitoring

XIV.C.1. Sources subject to the requirements of this section are also subject to the requirements of Section 7.IX.A.3, IX.A.7., IX.A.8., and IX.A.9.

**XV. Control of Volatile Organic Compound Leaks from Vapor Collection Systems and Vapor Control Systems Located at Gasoline Terminals, Gasoline Bulk Plants, and Gasoline Dispensing Facilities**

XV.A. General Provisions

XV.A.1. Applicability

This section is applicable to all gasoline terminals, gasoline bulk plants and gasoline dispensing facilities (e.g., service stations) which are located in ozone nonattainment areas and which must have a vapor collection and/or a vapor control system pursuant to Section VI. and other applicable rules.

XV.A.2. Exemptions

This section is not applicable to those operations involving transfer of gasoline from gasoline dispensing facilities to motor vehicle fuel tanks nor to other dispensing operations at such facilities.

XV.A.3. Definitions

For the purpose of this section, the following definitions apply:

XV.A.3.a. "Gasoline Dispensing Facility" means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks, (e.g., service stations, fleet pumps, etc.)

XV.A.3.b. "Gasoline Transport Truck" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities (e.g., service stations), bulk gasoline plants or gasoline terminals.

XV.A.3.c. "Vapor Collection System" means a vapor transport system which uses direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into either a vessel being unloaded or a vapor control system or vapor holding tank.

XV.A.3.d. "Vapor Control System" means a system that is designed to control the release of volatile organic compounds displaced from a vessel during transfer of gasoline.

XV.B. Specific Provisions

XV.B.1. The operator of a vapor collection or vapor control system at a facility subject to the provisions of this section shall operate the vapor collection system and the gasoline loading equipment in a manner that prevents:

- XV.B.1.a. Gauge pressure from exceeding 33.6 torr (18 inches of H<sub>2</sub>O) and vacuum from exceeding gauge pressure of minus 11.2 torr (minus 6 inches of H<sub>2</sub>O) at the point where the vapor return line on the truck connects with the vapor collection line of the facility.
- XV.B.1.b. A reading equal to or greater than 100 percent of the lower explosive limit (LEL, measured as propane) at 2.5 centimeters from a known or potential leak source when measured by the procedures described in Appendix B of "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," EPA-450/2-78-051, during loading or unloading operations at gasoline dispensing facilities, bulk plants and terminals.
- XV.B.1.c. Avoidable liquid leaks from the system during loading or unloading operations at gasoline dispensing facilities, bulk plants, and terminals.
- XV.B.1.d. Division representatives shall monitor for excessive back pressure and vapor leakage as is defined by 1.a. and 1.b. above.

#### XV.B.2. Repairs and Modifications

- XV.B.2.a. The operator shall within fifteen (15) days, repair and retest a vapor collection or control system that exceeds the pressure limits (Subparagraph 1.a. of this Subsection B.), excepting that;
- XV.B.2.b. Should an applicable facility require modification or repairs that will take longer than fifteen (15) days to complete, the operator shall submit to the Division for approval a schedule which includes dates of commencement and completion.

### **XVI. Control of Emissions from Stationary and Portable Engines in the 8-hour Ozone Control Area**

#### XVI.A Requirements for new and existing engines.

- XVI.A.1 The owner or operator of any natural gas-fired stationary or portable reciprocating internal combustion engine with a manufacturer's design rate greater than 500 horsepower commencing operations in the 8-hour Ozone Control Area on or after June 1, 2004 shall employ air pollution control technology to control emissions, as provided in Section XVI.B.
- XVI.A.2 Any existing natural gas-fired stationary or portable reciprocating internal combustion engine with a manufacturer's design rate greater than 500 horsepower, which existing engine was operating in the 8-hour Ozone Control Area prior to June 1, 2004, shall employ air pollution control technology on and after May 1, 2005, as provided in Section XVI.B.

#### XVI.B. Air pollution control technology requirements

- XVI.B.1 For rich burn reciprocating internal combustion engines, a non-selective catalyst reduction and an air fuel controller shall be required. A rich burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of less than 2% by volume.
- XVI.B.2 For lean burn reciprocating internal combustion engines, an oxidation catalyst shall be required. A lean burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of 2% by volume, or greater.

XVI.B.3 The emission control equipment required by this Section XVI.B shall be appropriately sized for the engine and shall be operated and maintained according to manufacturer specifications.

XVI.C The air pollution control technology requirements in this Section XVI shall not apply to:

XVI.C.1 Non-road engines, as defined in Regulation Number 3.

XVI.C.2 Reciprocating internal combustion engines that the Division has determined will be permanently removed from service or replaced by electric units on or before May 1, 2007. The owner or operator of such an engine shall provide notice to the Division of such intent by May 1, 2005 and shall not operate the engine identified for removal or replacement in the 8-hour Ozone Control Area after May 1, 2007.

XVI.C.3 Any emergency power generator exempt from APEN requirements pursuant to Regulation Number 3.

XVI.C.4 Any lean burn reciprocating internal combustion engine operating in the 8-hour Ozone Control Area prior to June 1, 2004, for which the owner or operator demonstrates to the Division that retrofit technology cannot be installed at a cost of less than \$ 5,000 per ton of VOC emission reduction. Installation costs and the best information available for determining control efficiency shall be considered in determining such costs. In order to qualify for such exemption, the owner or operator must submit an application making such a demonstration, together with all supporting documents, to the Division by May 1, 2005. Any reciprocating internal combustion engine qualifying for this exemption shall not be moved to any other location within the 8-hour Ozone Control Area.

## **XVII. Statewide Controls for Oil and Gas Operations and Natural Gas-Fired Reciprocating Internal Combustion Engines**

XVII.A. Definitions

XVII.A.1 "Air Pollution Control Equipment," as used in this Section XVII, means a combustion device or vapor recovery unit. Air pollution control equipment also means alternative emissions control equipment and pollution prevention devices and processes intended to reduce uncontrolled actual emissions that comply with the requirements of Section XVII.B.2.

XVII.A.2. "Atmospheric", when used to modify the term "condensate storage tank", means a type of condensate storage tank that vents, or is designed to vent, to the atmosphere.

XVII.A.3. "Condensate Storage Tank" means any production tank or series of production tanks that are manifolded together that store condensate.

XVII.A.4 "Glycol Natural Gas Dehydrator" means any device in which a liquid glycol (including ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water.

XVII.B. General Provisions

XVII.B.1. General requirements for air pollution control equipment, prevention of leakage, and flares and combustion devices.

XVII.B.1.a. All air pollution control equipment required by this Section XVII shall be operated and maintained pursuant to manufacturer specifications or equivalent to

the extent practicable, and consistent with technological limitations and good engineering and maintenance practices. The owner or operator shall keep manufacturer specifications or equivalent on file. In addition, all such air pollution control equipment shall be adequately designed and sized to achieve the control efficiency rates required by this Section XVII and to handle reasonably foreseeable fluctuations in emissions of volatile organic compounds during normal operations. Fluctuations in emissions that occur when the separator dumps into the tank are reasonably foreseeable.

XVII.B.1.b. All condensate collection, storage, processing and handling operations, regardless of size, shall be designed, operated and maintained so as to minimize leakage of volatile organic compounds to the atmosphere to the extent reasonably practicable.

XVII.B.1.c. If a flare or other combustion device is used to control emissions of volatile organic compounds to comply with Section XVII, it shall be enclosed, have no visible emissions during normal operations, and be designed so that an observer can, by means of visual observation from the outside of the enclosed flare or combustion device, or by other convenient means approved by the Division, determine whether it is operating properly.

XVII.B.1.d. Any of the effective dates for installation of controls on condensate tanks dehydrators and/or internal combustion engines may be extended at the air pollution control Division's discretion for good cause shown

XVII.B.2. Alternative emissions control equipment shall qualify as air pollution control equipment, and may be used in lieu of, or in combination with, combustion devices and vapor recovery units to achieve the emission reductions required by this Section XVII, if the Division approves the equipment, device or process. As part of the approval process the Division, at its discretion, may specify a different control efficiency than the control efficiencies required by this Section XVII.

XVII.B.3. Oil refineries are not subject to this section of the rule.

XVII.B.4. Condensate tanks, dehydrators and internal combustion engines that are subject to an emissions control requirement in a federal maximum achievable control technology ("MACT") standard under 40 CFR Part 63, a Best Available Control Technology ("BACT") limit, or a New Source Performance Standard under 40 CFR Part 60 are not subject to this Section XVII.

XVII.C. Emission reduction from condensate storage tanks at oil and gas exploration and production operations, natural gas compressor stations, natural gas drip stations and natural gas processing plants.

XVII.C.1. Beginning May 1, 2008, owners or operators of all atmospheric condensate storage tanks with uncontrolled actual emissions of volatile organic compounds equal to or greater than 20 tons per year based on a rolling twelve-month total shall operate air pollution control equipment that has an average control efficiency of at least 95% for VOCs on such tanks.

XVII.C.2. For condensate storage tanks with past, uncontrolled actual emissions of volatile organic compounds of less than 20 tons per year based on a rolling twelve-month total that may become subject to Section XVII.C.1. by virtue of the addition of a newly drilled well or the recompletion or stimulation of an existing well, owners or operators of such tanks shall have until 90 days after the date of 1<sup>st</sup> production of the newly drilled,

recompleted or stimulated well to install and operate any required air pollution control equipment. If the owner or operator determines that emissions of volatile organic compounds will be below the 20 ton per year threshold, the owner or operator shall notify the Division of this determination in writing and include an explanation of the methodology used to make this determination.

XVII.C.3. Monitoring: The owner or operator of any condensate storage tank that is required to control volatile organic compound emissions pursuant to this Section XVII.C. shall visually inspect or monitor the Air Pollution Control Equipment to ensure that it is operating at least as often as condensate is loaded out from the tank, unless a more frequent inspection or monitoring schedule is followed. In addition, if a flare or other combustion device is used, the owner or operator shall visually inspect the device for visible emissions at least as often as condensate is loaded out from the tank.

XVII.C.4. Recordkeeping: The owner or operator of each condensate storage tank shall maintain the following records for a period of five years:

XVII.C.4.a. Monthly condensate production from the tank.

XVII.C.4.b. For any condensate storage tank required to be controlled pursuant to this Section XVII.C., the date, time and duration of any period where the air pollution control equipment is not operating. The duration of a period of non-operation shall be from the time that the air pollution control equipment was last observed to be operating until the time the equipment recommences operation.

XVII.C.4.c. For tanks where a flare or other combustion device is being used, the date and time of any instances where visible emissions are observed from the device.

#### XVII.D. Emission reductions from glycol natural gas dehydrators

Beginning May 1, 2008, any still vent and vent from any gas-condensate-glycol (GCG) separator (flash separator or flash tank), if present, on a glycol natural gas dehydrator located at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas-processing plant shall reduce uncontrolled actual emissions of volatile organic compounds by an average of at least 90 percent through the use of air pollution control equipment. This Section XVII.D shall not apply to any single natural gas dehydrator, or several dehydrators at a single oil and gas exploration and production operation/site, natural gas compressor station, drip station or gas-processing plant, with uncontrolled actual emissions of volatile organic compounds of less than 15 tons per year based on a rolling twelve-month total. To determine if a grouping of dehydrators exceeds the 15 tons per year threshold aggregate emissions from all dehydrators on site (contiguous and adjacent). The control requirement in this Section XVII.D. shall apply to each natural gas dehydrator within a grouping that has actual uncontrolled emissions above two tons per year.

XVII.E. Control of emissions from new, modified, existing, and relocated natural gas fired reciprocating internal combustion engines.

XVII.E.1. The requirements of this Section XVII.E. shall not apply to any engine having actual uncontrolled emissions below permitting thresholds listed in Regulation Number 3, Part B.

XVII.E.2. New, Modified and Relocated Natural Gas Fired Reciprocating Internal Combustion Engines

XVII.E.2.a. Except as provided in Section XVII.E.2.b. below, the owner or operator on any natural gas fired reciprocating internal combustion engine that is either constructed or relocated to the state of Colorado from another state, on or after the date listed in the table below shall operate and maintain each engine according to the manufacturer's written instructions or procedures to the extent practicable and consistent with technological limitations and good engineering and maintenance practices over the entire life of the engine so that it achieves the emission standards required in Section XVII.E.2.b. Table 1 below.

XVII.E.2.b. Actual emissions from natural gas fired reciprocating internal combustion engines shall not exceed the emission performance standards in Table 1 below as expressed in units of grams per horsepower-hour (G/hp-hr)

TABLE 1				
Maximum Engine Hp	Construction or Relocation Date	Emission Standards is G/hp-hr		
		NOx	CO	VOC
< 100 Hp	Any	NA	NA	NA
100<Hp and <500	On or after January 1, 2008	2.0	4.0	1.0
	On or after January 1, 2011	1.0	2.0	0.7
500<Hp	On or after July 1, 2007	2.0	4.0	1.0
	On or after July 1, 2010	1.0	2.0	0.7

XVII.E.3. Existing Natural Gas Fired Reciprocating Internal Combustion Engines

XVII.E.3.a. Rich Burn Reciprocating Internal Combustion Engines

XVII.E.3.a.(i) Except as provided in Section XVII.E.3.a.(ii), all rich burn reciprocating internal combustion engines with a manufacturer's name plate design rate greater than 500 horsepower shall install and operate both a non-selective catalyst reduction and an air fuel controller by July 1, 2010. A rich burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of less than 2% by volume.

XVII.E.3.a.(ii) Any rich burn reciprocating internal combustion engine constructed or modified before February 1, 2009, for which the owner or operator demonstrates to the Division that retrofit technology cannot be installed at a cost of less than \$ 5,000 per ton of combined volatile organic compound and nitrogen oxides emission reductions (this value shall be adjusted for future applications according to the current day consumer price index) is exempt complying with Section XVII.E.3.a. Installation costs and the best information available for determining control efficiency shall be considered in determining such costs. In order to qualify for such exemption, the owner or operator must submit an

application making such a demonstration, together with all supporting documents, to the Division by August 1, 2009.

XVII.E.3.b. Lean Burn Reciprocating Internal Combustion Engines

XVII.E.3.b.(i) Except as provided in Section XVII.E.3.b.(ii), all lean burn reciprocating internal combustion engines with a manufacturer's nameplate design rate greater than 500 horsepower shall install and operate an oxidation catalyst by July 1, 2010. A lean burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of 2% by volume, or greater.

XVII.E.3.b.(ii) Any lean burn reciprocating internal combustion engine constructed or modified before February 1, 2009, for which the owner or operator demonstrates to the Division that retrofit technology cannot be installed at a cost of less than \$ 5,000 per ton of volatile organic compound emission reduction (this value shall be adjusted for future applications according to the current day consumer price index) is exempt complying with Section XVII.E.3.b.(i). Installation costs and the best information available for determining control efficiency shall be considered in determining such costs. In order to qualify for such exemption, the owner or operator must submit an application making such a demonstration, together with all supporting documents, to the Division by August 1, 2009.

**XVIII. (State Only) Natural Gas-Actuated Pneumatic Controllers Associated with Oil and Gas Operations in the 8-Hour Ozone Control Area or Any Ozone Nonattainment or Attainment/Maintenance Area**

XVIII.A. Applicability

This section applies to pneumatic controllers that are actuated by natural gas, and located at, or upstream of natural gas processing plants (upstream activities include: oil and gas exploration and production operations, natural gas compressor stations, and/or natural gas drip stations) in the 8-Hour Ozone Control Area or any Ozone Nonattainment or Attainment/Maintenance Area.

XVIII.B. Definitions

XVIII.B.1. "Affected Operations" shall mean pneumatic controllers that are actuated by natural gas, and located at, or upstream of natural gas processing plants (upstream activities include: oil and gas exploration and production operations, natural gas compressor stations, and/or natural gas drip stations).

XVIII.B.2. "Enhanced Maintenance" is specific to high-bleed devices and shall include but is not limited to cleaning, tuning, and repairing leaking gaskets, tubing fittings, and seals; tuning to operate over a broader range of proportional band; and eliminating unnecessary valve positioners.

XVIII.B.3. "High-Bleed Pneumatic Controller" shall mean a pneumatic controller that is designed to have a constant bleed rate that emits in excess of 6 standard cubic feet per hour (scfh) of natural gas to the atmosphere.

XVIII.B.4. "Low-Bleed Pneumatic controller" shall mean a pneumatic controller that is designed to have a constant bleed rate that emits less than or equal to 6 scfh of natural gas to the atmosphere.

XVIII.B.5. "Natural Gas Processing Plant" shall mean any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both.

XVIII.B.6. "Pneumatic Controller" shall mean an instrument that is actuated using natural gas pressure and used to control or monitor process parameters such as liquid level, gas level, pressure, valve position, liquid flow, gas flow and temperature.

#### XVIII.C. Emission Reduction Requirements

The owners and operators of affected operations shall reduce emissions of volatile organic compounds from pneumatic controllers associated with affected operations as follows:

XVIII.C.1. All pneumatic controllers placed in service on or after February 1, 2009, shall emit VOCs in an amount equal to or less than a low-bleed pneumatic controller, unless allowed pursuant to Section XVIII.C.3.

XVIII.C.2. All high-bleed pneumatic controllers in service prior to February 1, 2009 shall be replaced or retrofit such that VOC emissions are reduced to an amount equal to or less than a low-bleed pneumatic controller, by May 1, 2009, unless allowed pursuant to Section XVIII.C.3.

XVIII.C.3. All high-bleed pneumatic controllers that must remain in service due to safety and/or process purposes must have Division approval and comply with Sections XVIII.D. and XVIII.E.

XVIII.C.3.a. For high-bleed pneumatic controllers in service prior to February 1, 2009, the owner/operator shall submit justification for high-bleed pneumatic controllers to remain in service due to safety and /or process purposes by March 1, 2009. The Division shall be deemed to have approved the justification if it does not object to the owner/operator within 30-days upon receipt.

XVIII.C.3.b. For high-bleed pneumatic controllers placed in service on or after February 1, 2009, the owner/operator shall submit justification for high-bleed pneumatic controllers to be installed due to safety and /or process purposes prior to installation. The Division shall be deemed to have approved the justification if it does not object to the owner/operator within 30-days upon receipt.

#### XVIII.D. Monitoring

This section applies only to high-bleed pneumatic controllers identified in Section XVIII.C.3.

XVIII.D.1. Effective May 1, 2009, each high-bleed pneumatic controller shall be physically tagged by the owner/operator identifying it with a unique high-bleed pneumatic controller number that is assigned and maintained by the owner/operator.

XVIII.D.2. Effective May 1, 2009, each high-bleed pneumatic controller shall be inspected on a monthly basis, perform necessary enhanced maintenance as defined in Section XVIII.B.2, and maintain the device according to manufacturer specifications to ensure that the controller's VOC emissions are minimized.

#### XVIII.E. Recordkeeping

This section applies only to high-bleed pneumatic controllers identified in Section XVIII.C.3.

XVIII.E.1. The owner or operator of affected operations shall maintain a log of the total number of high-bleed pneumatic controllers and their associated controller numbers per facility, the total number of high-bleed pneumatic controllers per company and the associated justification that the high-bleed pneumatic controllers must be used pursuant to Section XVIII.C.3. The log shall be updated on a monthly basis.

XVIII.E.2. The owner or operator shall maintain a log of enhanced maintenance which shall include, at a minimum, inspection dates, the date of the maintenance activity, high-bleed pneumatic controller number, description of the maintenance performed, results and date of any corrective action taken, and the printed name and signature of the individual performing the maintenance. The log shall be updated on a monthly basis.

XVIII.E.3. Records of enhanced maintenance of pneumatic controllers shall be maintained for a minimum of three years and readily made available to the division upon request.

## **XIX. Statements of Basis, Specific Statutory Authority and Purpose**

XIX.A. December 21, 1995 (Section II.B)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedures Act, Section 24-4-103, C.R.S. and the Colorado Air Pollution Prevention and Control Act, Section 25-7-110.5, C.R.S.

### Basis

Regulations 3, 7 and the Common Provisions establish lists of Negligibly Reactive Volatile Organic Compounds (NRVOCs). The revisions adopted consolidate the list of NRVOCs into the Common Provisions, assuring that the same list of NRVOCs apply to all the Colorado Regulations. This provides more consistency in those chemicals regulated as VOCs.

### Specific Statutory Authority

The Colorado Air Pollution Prevention and Control Act provides the authority for the Colorado Air Quality Control Commission to adopt and modify Regulations pertaining to organic solvents and photochemical substances. Section 25-7-109(2)(f) and 25-7-109(2)(g), C.R.S., grant the Commission the authority to promulgate regulations pertaining to Organic solvents and photochemical substances. The Commission's action is taken pursuant to authority granted and procedures set forth in Sections 25-7-105, 25-7-109, and 25-7-110, C.R.S.

### Purpose

These revisions to Regulations Number 3, 7, and the Common Provisions are intended to clarify substances that are negligibly reactive VOCs, which are reflected in the EPA list of non-photochemically reactive VOCs. By consolidating the list (which consists of the EPA list of non-photochemically reactive VOCs), and adopting the EPA definition by reference, a single list of negligibly reactive VOCs will apply uniformly to all Colorado Air Quality Control Commission Regulations.

This revision will also include EPA's recent addition of acetone to the negligibly reactive VOC list. The addition of acetone to the list of negligibly reactive VOC's provides additional flexibility to sources looking for an alternative to more photochemically reactive VOCs. Because the EPA has added acetone to their list of non-photochemically reactive VOCs many industries, which make and supply products to Colorado industries, are planning to substitute acetone for more reactive VOCs. This change in the content of products purchased by industry for use in Colorado would adversely effect industries in Colorado if acetone remains a regulated VOC in Colorado. By adopting acetone as a negligibly reactive VOC industries will be able to take advantage of and benefit from this possible shift in product contents.

XIX.B. March 21, 1996 (Sections I.A.1-4; II.D; II.E)

The changes to Regulation Number 7 were adopted as part of the Commission's decision to redesignate the Denver metro area as an attainment and maintenance area for ozone, together with the relevant amendments to the Ambient Air Quality Standards regulation and Regulation Number 3. The Ozone Maintenance Plan, also adopted by the Commission on March 21, 1996 as part of the redesignation, based part of its demonstration of maintenance on the continued existence of rules regulating VOC emissions. Such rules include the application of the permit requirements of Regulation Number 3 to gasoline stations, and the continued application of Regulation Number 7 for the control of VOC in nonattainment areas. The VOC controls in Regulation Number 7 were adopted into the SIP in May 1995, after Denver attained the ozone standard. The maintenance demonstration was based on future inventories that assumed the continuance of existing VOC controls in the Denver Metro area.

Pursuant to Section 25-7-107(2.5), C.R.S., the Commission is required to take expeditious action to redesignate the area as an attainment area for ozone. The CAA requires the submittal of a maintenance plan demonstrating maintenance of the ozone standard for any such redesignation request. The changes to Regulation Number 7 are consistent with continued maintenance of the ozone standard and are not otherwise more stringent than the relevant federal requirements.

The purpose of the revisions to Regulation 7, § I.A is to provide a de minimis source with an opportunity to obtain an exemption from the requirements of Regulation Number 7 through rule-making. This revision will be submitted to the EPA for inclusion in the State Implementation Plan (SIP). Upon inclusion of this revision in the SIP, exemptions from Regulation Number 7 adopted by the Commission shall apply for purposes of both federal and state law, pending review by the state legislature pursuant to § 25-7-133(2), C.R.S. The rule revision includes several limitations on the scope of such exemptions:

1. The aggregate of all emissions from de minimis sources may not exceed five tons of emissions per day. The purpose of this limitation is to protect the projections contained in the emissions inventory, and to prevent growth in such emissions from exceeding the National Ambient Air Quality Standard (NAAQS) for ozone.
2. An exemption may not be granted if the Division demonstrates that such exemption will cause or contribute to air pollution levels that exceed the NAAQS, even if the total aggregate emissions from such sources is less than five tons per day.
3. The Commission rule prohibits more than one rule-making hearing per year to consider potential de minimis exemptions in the aggregate. The purpose of this provision is to prevent the granting of case-by-case exemptions, and to conserve agency resources. The granting of exemptions on a case-by-case basis would grant an unfair advantage for those sources that are able to have their case heard by the Commission before other, similarly situated sources, submit a request for a de minimis exemption. However, upon a showing of an emergency, and at the discretion of the Commission, the Commission may always grant an exemption on a case-by-case basis.
4. The Commission rule provides that the growth in emissions due to such de minimis exemptions may not exceed the growth that was included in the emissions inventory in the SIP.
5. The Commission rule requires the de minimis exemptions to be included in a permit that is subject to review and comment by the public and by EPA.

The rule revision proposed by the Regional Air Quality Council (RAQC) did not include these limitations. However, the Commission may not have used the rule as proposed by RAQC to grant unlimited exemptions from the requirements of Regulation Number 7 because such an action would undermine the regulation and the maintenance demonstration contained in the SIP. The limitations adopted by the Commission were the subject of an alternative proposal submitted by the Division. The purpose of the

limit is to ensure that the de minimis exemption provision cannot be used to jeopardize attainment of the NAAQs. Such a limit is necessary in order to obtain EPA approval of this SIP revision. The alternative proposal submitted by the Division and adopted by the Commission will have no regulatory impact on any person, facility, or activity. Even without an express provision limiting the de minimis exemptions to five tons per day, the Commission generally would not have granted de minimis exemptions in excess of that amount because such emissions are not accounted for in the emissions inventory and would undermine the maintenance demonstration. Furthermore, the alternative proposed by the Division does not, by itself, create an exemption from any regulatory requirement. The alternative simply limits the scope of the exemptions that may become fully effective without a SIP revision. However, the rule does not in any way limit the Commission's authority to amend the SIP.

The emissions inventory submitted to EPA anticipated growth in emissions in both the area source and minor source categories, as well as the major source category. In order to ensure that any growth in emissions due to the granting of de minimis exemptions will not cause total emissions to exceed the growth projections for these categories, the Division will keep track of the permitted allowable emissions that may result from sources and source categories entitled to such exemptions. In addition, the growth in emissions from area, major and minor source categories will be tracked when the Division performs the periodic inventories described in the SIP for the years 1999, 2002 and 2003. Any permitted growth in emissions due to de minimis exemptions will be added to the emissions for the source categories as reflected in the most recent periodic inventory. No further de minimis exemptions will be granted if the total growth in emissions exceeds the growth projections contained in the SIP. In addition, if the total growth exceeds the growth projections contained in the SIP, one or more of the contingency measures will be implemented to offset such growth, or the SIP will be revised as necessary to ensure continued maintenance of the standard.

The purpose of the addition of Regulation Number 7, § II.E is to provide sources with a process to obtain approval of an alternative emission control plan, compliance method, test method, or test procedure without waiting for EPA to approve of a site-specific SIP revision. The rule provides that any such alternative must be just as effective as the relevant regulatory provision, and that such effectiveness must be demonstrated using equally effective test methods and procedures. The changes to this section delegate the authority to the Division to approve of such alternatives. Since rulemaking is not required under Paragraph E, the language allowing a source to assert that the relevant regulatory provision does not represent RACT has been omitted from this section. Such a change to the substantive requirements of Regulation Number 7 would require a rule change.

The rule revision proposed by the RAQC provided that alternative emissions control plans and compliance methods must be just as effective as those contained in the rule, but did not describe the test methods to be used to demonstrate such effectiveness. The Division proposed an alternative rule requiring such effectiveness to be demonstrated using test methods and procedures that are just as effective as those set out in the rule, or that have otherwise been approved by EPA. Such criteria for test methods and procedures are necessary in order to obtain EPA approval of this SIP revision. However, even without this language in the rule the Division would have required approved test methods and procedures in order to approve of proposed alternatives. The Division's alternative proposal provides the needed certainty in the most flexible manner possible. Furthermore, the alternative proposed by the Division does not impose any new regulatory requirement. Instead, it merely establishes criteria for allowing persons subject to the regulation to propose, in their discretion, an alternative means of complying with the existing regulatory requirements. Therefore, the alternative proposal submitted by the Division and adopted by the Commission will have no regulatory impact on any person, facility, or activity.

The rule revisions provide that no permit may be issued based on the provisions allowing for the creation of de minimis exemptions and the approval of alternative compliance plans without first revising the SIP unless EPA first approves of such regulatory revisions as part of the State Implementation Plan. The purpose of this condition is to address the possible disapproval of these revisions by EPA. In the event these changes are not approved by EPA, the remaining regulatory provisions of Regulation Number 7 will remain in full force and effect, and therefore, the EPA may approve of the maintenance plan and the redesignation request.

The revisions to Regulation Number 7 are procedural changes that are not intended to reduce air pollution.

For clarification, the Commission adopted these regulation revisions as follows:

REGULATION REVISION	OZONE SIP AND MAINTENANCE PLAN
Section I.A.1	Exists in Appendix C of the Ozone Maintenance Plan to become a part of that document approved March 21, 1996
Sections I.A.2, 3, 4; Section II.D, II.E	Adopted as subsequent regulation revisions to be submitted to the Governor and EPA separately and concurrently as a revision to the Ozone SIP (and Maintenance Plan)

The specific statutory authority to promulgate the rules necessary for redesignation is set out in §§ 25-7-105(1)(a)(I) and (2); -106(1)(a); -107 (1) and (2.5); and -301. The authority to adopt such rules includes the authority to adopt exceptions to the rules, and the process for applying for any such exemptions.

XIX.C. November 21, 1996 (Section XII)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedures Act, Section 24-4-103, C.R.S. and the Colorado Air Pollution Prevention and Control Act, Section 25-7-110.5, C.R.S.

Basis

Regulations 3, 7 and the Common Provisions establish lists of Negligibly Reactive Volatile Organic Compounds (NRVOCs). The revisions adopted update the list of NRVOCs so that the state list remains consistent with the federal list. Additionally because perchloroethylene will no longer be listed as a VOC in Regulation Number 7, Section XII, Control of VOC Emissions from Dry Cleaning Facilities using Perchloroethylene as a Solvent, is being deleted.

Regulation Number 8 and 3 list the federal Hazardous Air Pollutants (HAPs). In the June 8, 1996 Federal Register the EPA removed Caprolactam (CAS 105-60-2) from the federal list of Hazardous Air Pollutants. The conforming changes in Regulation Number 3 Appendices B, C and D have been made to keep the list of federal HAPs in Regulation Number 3 consistent with the federal list. The list of HAPs in Regulation Number 8 has been removed and a reference to the list in Regulation Number 3 has been added.

Specific Statutory Authority

The Colorado Air Pollution Prevention and Control Act provides the authority for the Colorado Air Quality Control Commission to adopt and modify Regulations pertaining to organic solvents and photochemical substances. Section 25-7-109(2)(f) and 25-7-109(2)(g), C.R.S., grant the Commission the authority to promulgate regulations pertaining to organic solvents and photochemical substances. Sections 25-7-105(1)(I)(b) and 25-7-109(2)(h) provide authority to adopt emission control regulations and emission control regulations relating to HAPs respectively. The Commission's action is taken pursuant to authority granted and procedures set forth in Sections 25-7-105, 25-7-109, and 25-7-110, C.R.S.

Purpose

These revisions to Regulations Number 3, 7, 8 and the Common Provisions are intended to update the state lists of NRVOCs, the Ozone SIP, and HAPs for consistency with the federal lists.

XIX.D. October 15, 1998 (Section II.F)

The Gates Rubber Co. Site-specific Revision

The Gates Rubber Co. (Gates), by and through its attorney, submitted this Statement of Basis, Specific Statutory Authority and Purpose for amendments to Regulation Number 7, Control of Emissions of Volatile Organic Compounds.

### Basis

Regulation Number 3 contains a certification and trading of emission reduction credits section (Section V), which sets forth the definitions and process for obtaining emission credits and using those credits. This section was amended to permit the use of emission reduction credits (ERC) to satisfy reasonably available control technology (RACT) requirements. The criteria for approval of ERC transactions specifies that they must involve like pollutants (for volatile organic compounds, the same degree of toxicity and photochemical reactivity), must be within the same nonattainment area, may not be used to satisfy Federal technology control requirements and may not be inconsistent with standards or regulations or to circumvent new source performance standards, best available control technology, lowest available emission rate technology controls or NESHAPs.

Regulation Number 7 sets forth CTG and RACT emission limitations, equipment requirements and work practices intended to control emission of volatile organic compounds (VOC) from new and existing stationary sources. The control measures specified in Regulation Number 7 are designed to reduce the ambient concentrations of ozone in ozone nonattainment areas and to maintain adequate air quality in other areas.

### Specific Statutory Authority

The provisions of C.R.S. §§ 25-7-105 and 25-7-109 to 110 provide the specific statutory authority for the amendments to this regulation adopted by the Commission. The Commission has also adopted in compliance with C.R.S. § 24-4-103(4), this Statement of Basis, Specific Statutory Authority and Purpose.

### Purpose

The purpose of this amendment to Regulation Number 7 is to establish a source specific rule for Gates to allow the use of emission reduction credits to satisfy the RACT requirements for VOC emissions pursuant to Regulation Number 7 for surface coatings operations not specifically listed in Section IX of Regulation Number 7. Regulation Number 3 provides specific authorization to use emission reduction credit transactions as an alternative compliance method to satisfy CTG and RACT requirements.

Specifically, the VOC certified emissions reduction credits to be used in this emission credit transaction in an amount up to 12 tons per year are from Coors Brewing Company pursuant to their emissions reduction credit Permit. The emission reduction credits will be used to satisfy the general requirements that all sources apply RACT. These emission reduction credits will be used by Gates so that Gates can use solvent-based surface coatings which contain VOCs periodically in lieu of the water-based coatings normally used on its 10 Cord coating line (S033, S034, and S035). these credits will allow Gates to meet RACT requirements without applying control technology to the 10 Cord line, other than the currently installed catalytic incinerator on the emissions from the drying oven from the fourth dip, which reduces those emissions by at least 90%.

The relevant portion of Regulation Number 3, which applies to the Gates credit transaction is Section V.F., entitled "Criteria for Approval of all Transactions." The first requirement is that the transaction involve like pollutants. In the present case, the emission credit transaction involves the exchange of VOC pollutants. Coors credits for methanol will be exchanged for m-pyrol. Exhaust from the catalytic incinerator, which contains unconverted toluene and xylene, is routed to the curing ovens of the other

zones of the 10 Cord line, including the first zone. The Division has previously found that, excluding the emissions from the non-compliant coatings addressed in this rule, the 10 Cord line has met RACT standards. The use of the non-compliant coatings adds no HAPs to the Gates emissions. Other non-criteria reportable pollutants are present at well below APEN de minimis quantities under scenario 2, which is applicable to the 10 Cord line. Regulation Number 3 further requires that toxic or VOC pollutants involve the same degree of toxicity and photochemical reactivity or else a greater reduction may be required. Since these pollutants are both toxics and VOCs (except that m-pyrol is not a toxic), both have been addressed.

All of these compounds are commonly used in the surface coating industry with appropriate safeguards during their use. With respect to toxicity of the Gates compounds, m-pyrol is not listed as a toxic compound on either the federal or state lists. Methanol, the VOC in the Coors credit, is a Bin C HAP. Because the m-pyrol in the non-compliant coatings is not a HAP, the Gates VOCs have equal or lower toxicity than those being purchased from Coors. Therefore, HAP emissions will be reduced in the airshed.

The photochemical reactivities of VOCs are important because of their impact on the ozone formation process in an airshed. The Air Pollution Control Division relied upon the work of Dr. William P.L. Carter, Professor at the University of California, whose article entitled "Development of Ozone Reactivity Scales for Volatile Organic Compounds" describes relative photochemical reactivity scales and comparisons. Dr. Carter notes that there are a number of ways to quantify VOC reactivities, but the most relevant measure of VOC effects on ozone is the actual change in ozone formation in an airshed. This results from changing the emissions of the VOC in that airshed which depends not only on how rapidly the VOC reacts and the nature of its atmospheric reaction mechanism, but also the nature of the airshed where it is emitted, including the effects of other pollutants which are present.

Dr. Carter further states that the VOC effect on ozone in the atmosphere can only be estimated using computer airshed models. The effect of changing the emissions of a given VOC on ozone formation in a particular episode will, in general, depend on the magnitude of the emissions change and on whether the VOC is being added to, subtracted from, or replacing a portion of the base case emissions.

Dr. Carter's derived relative reactivity scale includes reactive organic gases whose indices for maximum incremental reactivity (MIR) range from 0.004 to 6.5. The MIR values were updated in 1997. The VOCs and their respective MIR involved with this exchange are as follows:

Methanol 0.16  
m-Pyrol 0.57

The pending emission credits of VOCs being used in the proposed emissions credit transaction are for methanol. The VOCs emitted from uncontrolled use of solvent-based coatings at Gates are from m-pyrol. Regulation Number 3 provides that if the VOCs are not of the same photochemical reactivity, a greater offset may be required. The Commission required that, based on a past ERC trade for Pioneer Metal Finishing, that methanol credits in a 1.1:1 offset ratio be exchanged for toluene and xylenes. Here, however, the Commission finds that m-pyrol and methanol have similar photochemical reactivities, so no offset will be required.

The second requirement states that the transaction must not result in an increased concentration, at the point of maximum impact of hazardous air pollutants. This provision was derived from the EPA Emissions Trading Policy Statement and referred to NESHAP requirements involved in bubble transactions. If this provision is interpreted to apply generally to a facility which is limited by an existing permit to some level of VOC emissions on a twenty-four hour basis, any additional VOCs allowed pursuant to an emission transaction would by its application increase the concentration of VOCs at the maximum point of impact. Since it appears to have been intended to limit NESHAP offsets in bubble transactions, and no NESHAPs are applicable in the Gates transaction, and recognizing the earlier action of the Commission in approving the use of ERC transactions to satisfy CTG requirements and in approving a previous ERC transaction for

Pioneer Metal Finishing, the Commission determined that this requirement should not apply to this transaction.

The next requirement states that no transaction may be approved which is inconsistent with any standard established by the Federal Act, the state Air Quality Control Act or the regulations promulgated under either, or to circumvent NSPS requirements or BACT or LAER, although the Commission may approve a transaction using a certified emission reduction credit in lieu of a specified CTG method or RACT. The emissions involved in this transaction at Gates are not subject to NSPS, BACT, or LAER. Regulation Number 7 applies only RACT to the Gates operations involved. Regulation Number 3 clearly permits the use of emission reduction credits to satisfy RACT.

The emission must involve sources which are located within the same nonattainment area. In the present case, both Gates, whose operations are located at 900 S. Broadway, Denver, Colorado, who is proposing to use the credits, and the source of the credits, Verticel, whose operations were located at 4607 South Windermere Street, Englewood, Colorado, are located in the Denver nonattainment area, less than five miles apart.

The next requirement prohibits the use of emission reduction credits to meet applicable technology-based requirements for new sources, such as NSPS, BACT, or LAER. As stated above, the Gates operations involved in this transaction are not subject to NSPS, BACT, or LAER or any other technology-based requirement except for RACT requirements for which an ERC transaction may be used to satisfy such requirements.

The next requirement states that VOC trades will be considered equal in ambient effect where the trade is a pound for pound trade in the same control strategy demonstration area. It appears that this requirement, which was taken from the EPA Emissions Trading Policy Statement, made the assumption that the "pound for pound" trade would have an equal impact on the ambient environment, with respect to ozone. Since there was no independent photochemical reactivity equivalency requirement in the 1986 Policy Statement, this requirement appears to be redundant with the requirement for insuring the same degree of photochemical reactivity among traded pollutants.

For VOC trades involving surface coating, the requirements state that emissions must be calculated on a solids-applied basis and must specify the maximum time period over which the emissions may be averaged, not to exceed 24 hours. The proposed emissions credit transaction is based on a 24-hour period. With respect to the solids-applied basis calculation, this transaction will be calculated on the basis of the pounds of VOCs from uncontrolled solvent-based coatings.

The emissions credit transaction will require a SIP revision. The source specific rule for Gates will be forwarded to EPA for approval. The state emission permit for Gates pursuant to the emissions credit transaction will be state effective (but not federally effective) until the SIP revision is approved by EPA.

Gates proposed the following VOC emissions limitation in its state permit taking into consideration the pounds per year VOC emissions allowed by this emissions credit transaction:

1. A daily maximum limitation of 400 lbs. of VOC emissions from uncontrolled solvent-based surface coatings, calculated on a monthly basis for compliance purposes. Calculations will be performed by the 30th of the following month.
2. An annual limitation of no more than 24,000 lbs. (12 tons) of VOC emissions from uncontrolled solvent-based surface coatings.

Gates proposes to calculate the annual total VOC limitation on a rolling 12-month basis. Gates further proposes to keep monthly totals of non-compliant surface coatings used and to calculate daily usage based on monthly usage divided by the number of days non-compliant surface coatings were used. Records of usages and calculations will be kept and produced at the Division's request.

This source-specific rule has a negligible or no effect upon the other provisions of the ozone SIP.

It is contemplated that a State construction permit will be issued to Gates upon final approval by the Commission. Should the approval come after the issuance of Gates' Title V operating permit, the terms of the construction permit will be added to the operating permit.

XIX.E January 11, 2001 (Sections III.C, IX.L.2.c (1), and X.D.2 through XI.A.3.)

Readoption of Changes to Regulation Number 7 that were not printed in the Regulation or the Colorado Code of Regulations.

### Background

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Administrative Procedures Act, C.R.S. (1988), Sections 24-4-103(4) and (12.5) for adopted or modified regulations.

### Basis

During a review of the version of Regulation Number 7 adopted by the Air Quality Control Commission and the version of Regulation Number 7 published in the Colorado Code of Regulations, several significant discrepancies have been identified. This rule making will clarify the Commission's intent to adopt the following revisions to Regulation Number 7:

1. Section III.C regarding General Requirements for Storage of Volatile Organic Compounds omits the following revision:

"Beer production and associated beer container storage and transfer operations involving volatile organic compounds with a true vapor pressure of less than 1.5 PSIA at actual conditions are exempt from the provisions of Section III.B, above."

2. Section IX.L.2.c.i contains discrepancies in reference to the permit number of Coors Brewing Company Emissions Reduction Credit Permit issued on July 25, 1994.
3. Section X.D.2 through Section XI.A.3 was omitted from the CCR as published in the current version of Regulation Number 7.

### Authority

Sections 25-7-109, C.R.S. (1997) authorize the Commission to adopt emission control regulations.

### Purpose

Re-adoption of the proposed rule will eliminate the discrepancies between the Commission's adopted provisions within Regulation Number 7 and those contained within the Colorado Code of Regulations. Adoption of the amendments will benefit the regulated community by providing sources with consistent information.

XIX.F. November 20, 2003 (Sections I.A.2 through I.A.4, II.D and II.E).

The Commission repealed the provisions establishing a procedure for granting exemptions for de minimis sources, and the procedure for approving alternative compliance plans without source-specific SIP revisions. The Commission had adopted the repealed provisions in March 1996, but had delayed the effective date pending EPA approval through the SIP revision process. Earlier this year, EPA informed the Commission of its intent to disapprove the provisions unless they were withdrawn. Thus, the

provisions that are the subject of this rulemaking action never took effect. The Commission hereby repeals such provisions in order to avoid disapproval of the earlier SIP submittal, and to remove extraneous provisions from Regulation Number 7. Such repeal is required in order to comply with federal requirements, and is not otherwise more stringent than the requirements of the federal act.

Sections 25-7-105(1)(a)(I) and 25-7-301 authorize the Commission to adopt and revise a comprehensive SIP, and to regulate emissions from stationary sources, as necessary to maintain the national ambient air quality standard for ozone in accordance with the federal act.

XIX.G. (March 2004, Sections I.A, I.B., XII, and XVI)

The March 2004 revisions were adopted in conjunction with the Early Action Compact Ozone Action Plan, which is a SIP revision for attainment of the 8-hour ozone standard by December 31, 2007. The Commission adopted four new control measures in Regulation Number 7 to reduce emissions of volatile organic compounds (VOC). The control measures require the installation of air pollution control technology to control: (1) VOC emissions from condensate operation at oil and gas (E&P) facilities; (2) emissions from stationary and portable reciprocating internal combustion engines; (3) certain VOC emissions from gas-processing plants; and, (4) emissions from dehydrators at oil and gas operations.

The new requirements in Sections XII, and XVI apply to a larger geographic area than the pre-existing requirements of Regulation Number 7, as set out in Section I.A. of the rule. The reference to the "Denver Metro Attainment Maintenance Area", which is not a defined term, in Section I.A was changed to refer to the "Denver 1-hour ozone attainment/maintenance area", which is defined in the Ambient Air Quality Standards Rule. Similarly, the reference to the "Denver Metropolitan Nonattainment Area Ozone Maintenance State Implementation Plan" was changed to the "Ozone Redesignation Request and Maintenance Plan for the Denver Metropolitan Area," which is the correct name of the document submitted to EPA in May 2001.

Regarding VOC emissions from condensate operations, the Commission has determined that an overall reduction of 47.5% VOCs is required of each E&P operation so as to meet the requirements of the SIP. Further the Commission decided not to take a unit-by-unit approach, but rather, the amendments take a more flexible approach to regulating such emissions by requiring sources that have filed, or were required to file, APENs to choose emission controls and locations for applying those controls. This approach also minimizes the risk that sources may reconfigure tanks to avoid implementing the regulation.

Section XII.A.6 provides an exemption for owners and operators with less than 30 tpy of flash emissions subject to APEN reporting requirements. Regulation Number 7 previously included more general exemptions for emissions from condensate operations, but such pre-existing exemptions should have been repealed as part of this revision to Regulation Number 7. To the extent any pre-existing exemption for condensate operations remains, such pre-existing exemption shall not be construed to supercede the requirements of Section XII.

The rule also requires annual reports describing how E&P sources will achieve the requisite emission reductions. Such reports are necessary so that the Division can determine whether or not the emission reductions are being achieved.

Section XII.B of Regulation Number 7 is required to ensure that existing and new natural gas processing plants employ air pollution control technology to control emissions from leaking equipment, and atmospheric condensate storage tanks (and tank batteries). The Commission is specifically requiring a leak detection and repair (LDAR) program for all gas plants, according to the provisions of 40 C.F.R. Part 60, Subpart KKK, regardless of the date of construction of the affected facility. This is necessary to ensure these large facilities are well controlled and VOC emissions minimized.

Section XII. C. pertains to control of VOC emissions from natural gas dehydration operations. The Commission determined that, in order to meet the requirements of the SIP, emissions must be reduced

from all dehydration operations located in the 8-hour Ozone Control Area if such operations produce emissions above the minimum threshold specified in the rule. Further the Commission decided that flexibility should be allowed in how emissions are reduced, so several options are listed from which a source owner or operator may choose. If other equally effective measures or control devices are available, the Division may, on a case-by-case basis, approve the use of such alternatives.

Similarly, Section XVI establishes controls for reciprocating internal combustion engines. Both "lean" and "rich" burn engines are addressed and though the Commission has specified the default control technology to be applied to each engine type, the Division is allowed to approve alternative technology if a demonstration can be made that the alternative is at least as effective as the listed device in reducing VOC emissions. Parties to the rulemaking hearing provided evidence that suitable, cost-effective control equipment may not be available for some existing engines. The rule adopted by the Commission includes an exemption for lean burn engines if the owner demonstrates that such emissions controls would cost \$5,000 or more per ton of VOC removed. In calculating such costs, the Division shall use an appropriate amortization period and current discount rate. The Commission directs the Division to further investigate the question of whether controls are available and suitable for lean burn engines, and to recommend any revisions necessary for the regulation applicable to such engines. New engines locating in the control area must comply with the requirements effective June 1, 2004, but existing engines have until May 1, 2005 to come into compliance. Since the rule provides an exemption for existing engines that cannot be controlled for less than \$5,000 per ton, the rule must make the distinction between new and existing engines so that engines will not be moved into the area during prior to May 2005 and subsequently apply for such an exemption.

The Commission recognizes that, at this point in time, the controls required by the rule amendments constitute Reasonably Available Control Technology (RACT), at a minimum, and in some cases, the controls mandated by this regulation may, in fact, constitute Best Available Control Technology (BACT). This means that this regulation shall not be used: (a) to preclude a source from asserting that one of the controls mandated herein constitutes BACT or Lowest Achievable Emissions Rate (LAER) for a new source or major modification, (b) require the Division or Commission to mandate different control technologies as BACT, or (c) preclude the Division or Commission from requiring additional or more stringent air pollution control technologies as necessary or appropriate to comply with applicable BACT or LAER requirements for new sources and major modifications.

By its terms, the New Source Performance Standard (NSPS) applicable to leaking equipment at onshore natural gas processing plants (40 C.F.R. Part 60, Subpart KKK) applies to "affected facilities" and "process units" at such facilities as those terms are defined in the standard. In general, plants that were constructed prior to January 20, 1984 are exempt from the standard, unless subsequently modified or reconstructed, or newly constructed after that date. Since process units at a single gas plant can be distinct, certain gas plants may contain equipment that is not presently subject to the NSPS because of its date of construction. The control requirement in Section XII.B would extend leak detection and repair program requirements to such equipment.

The statutory authority for the revisions to regulation Number 7 is set out in Sections 25-7-105(1)(a) and (1)(b); 25-7-106(1)(c), (5) and (6); and 25-7-109(1)(a) and (2), C.R.S.

The March 2004 revisions to Regulation Number 7 are based on reasonably available, validated, reviewed, and sound scientific methodologies. All validated, reviewed and sound scientific methodologies and information made available by interested parties has been considered. Evidence in the record supports the finding that the rule shall result in a demonstrable reduction in air pollution. The Commission chose the most cost-effective mix of control strategies available to comply with the 8-hour ozone NAAQS. Where possible, the regulations provide the regulated community with flexibility to achieve the necessary reductions. The Commission chose the regulatory alternative that will maximize the air quality benefits in the most cost-effective manner.

XIX.H (December 2004, SECTIONS I.A., II.A, XII and XVI)

The December 2004 revisions were adopted to respond to U.S. EPA comments on the Ozone Action Plan the Commission adopted in March 2004. EPA required the rule revision in order to make the control measures incorporated into the State Implementation Plan practically enforceable as required by the federal Clean Air Act. The Federal Act requires all of the regulatory provisions adopted in this rulemaking action, and none of the provisions are more stringent than the requirements of the federal act.

The revised rule includes a process for obtaining emission reduction credit for pollution prevention measures. In order to qualify for emission reduction credit a pollution prevention measures must, among other things, be included in a permit even if it does not involve the construction of an air pollution source and would not otherwise trigger a requirement for a permit. The revisions to the regulation do not, however, create a requirement for sources to obtain a permit for pollution prevention measures for which the source will not take emissions reduction credit.

The Commission has the statutory authority to adopt the revisions pursuant to Sections 25-7-105(1)(a) and (1)(b); 25-7-106(1)(c), (5) and (6); and 25-7-109(1)(a) and (2), C.R.S.

The control measures necessary to achieve the 8-hour ozone standard were adopted in March 2004. The December 2004 rule changes do not impose new emission control requirements or emission reduction requirements on industry. Instead, the December 2004 rule revisions are intended to make the previously adopted requirements more enforceable, and to make sure that the requisite emission reductions occur during the ozone season when they are needed. Thus, the December 2004 are administrative in nature in that they are intended to assist with the administration and enforcement of the previously adopted controls. The Commission recognizes that the December 2004 rule amendments impose additional recordkeeping and reporting requirements, and therefore costs, on the regulated community. The changes, however, are not intended to achieve further reduction in emissions of volatile organic compounds beyond the reduction requirements adopted in March 2004. They are instead intended to make the March 2004 revisions fully enforceable and acceptable to EPA. Since the December 2004 rule changes are administrative in nature, the requirements of Section 25-7-110.8 C.R.S. do not apply.

XIX.I. December 17, 2006 (Section XII)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4), C.R.S. for new and revised regulations.

#### Basis

Regulation Number 7, Section XII imposes emission control requirements on oil and gas condensate tanks located in Adams, Arapahoe, Boulder, Douglas and Jefferson Counties, the Cities and Counties of Broomfield and Denver and parts of Larimer and Weld Counties ("8-Hour Ozone Control Area"). The condensate tank requirements, along with other requirements applicable to oil and gas operations and natural gas fired reciprocating internal combustion engines, were initially promulgated in March 2004, and later revised in December 2004, in connection with an Early Action Compact Ozone Action Plan ("EAC") entered into between the State of Colorado and the United States Environmental Protection Agency. The purpose of the EAC is to prevent exceedances of the 8-Hour Ozone Standard and avoid a nonattainment designation for the area. Pursuant to the EAC, Colorado committed to limiting Volatile Organic Compound ("VOC") emissions from condensate tanks located in the 8-Hour Ozone Control Area to 91.3 tons per day ("TPD") as of May 1, 2007 and 100.9 TPD as of May 1, 2012. Because of unanticipated growth of condensate tank emissions since 2004, the control requirements for condensate tanks adopted during the 2004 rulemaking are insufficient to meet these daily emission numbers. The current revisions require a greater level of control of condensate tank emissions in the 8-Hour Ozone Control Area in order to meet the commitments set forth in the EAC and to prevent future exceedances of the 8-Hour Ozone Standard. These revisions are based on reasonably available, validated, reviewed and sound scientific methodologies. All validated, reviewed and sound scientific methodologies made available by interested parties have been considered. Evidence in the record supports the finding that the rule shall result in a demonstrable reduction in air pollution, and will reduce the risk to human health or the environment or

otherwise provide benefits justifying the costs. Among the options considered, the regulatory option chosen will maximize the air quality benefits in the most cost-effective manner.

### Specific Statutory Authority

The specific statutory authority for these revisions is set forth in Section, 25-7-105(1)(a), C.R.S., which gives the Air Quality Control Commission authority to promulgate rules and regulations necessary for the proper implementation of a comprehensive state implementation plan that will assure attainment of national ambient air quality standards. Additional authority for these revisions is set forth in Sections, 25-7-106 and 25-7-109, which allow the Commission to promulgate emission control regulations and recordkeeping requirements applicable to air pollution sources. Specifically, Section 25-7-106(1)(c) authorizes the Commission to adopt emission control regulations that are applicable to specified areas within the state. Section 25-7-109(1)(a) authorizes the Commission to adopt emission control regulations. Section 25-7-109(3)(b) authorizes the Commission to adopt emission control regulations for the storage and transfer of petroleum products and any other volatile organic compounds.

### Purpose

The Revisions to Section XII were adopted in order to meet the commitments with respect to condensate tank emissions set forth in the Early Action Compact Ozone Action Plan entered into between the State of Colorado and U.S. EPA, prevent exceedances of the 8-Hour Ozone Standard, and simplify recordkeeping and reporting requirements.

To accomplish these goals the revised regulation raises the system-wide control requirements for the ozone season from the current 47.5% to 75% commencing in 2007 and 78% in 2012. While the rule establishes a higher percentage reduction in 2012 the Commission recognizes that given the uncertainty of emissions growth over the next 6 years, this reduction requirement may be too high and may need to be revisited as the 2012 deadline approaches. For the non-ozone season the required reduction has been raised from 38% to 60% commencing October 2007, and 70% commencing January 1, 2008. Determination of compliance during the ozone season under the revisions will be on a weekly basis instead of a daily basis, in recognition of the fact that condensate production is not typically measured on a daily basis. Under the previous version of the Rule, production could be tracked on something greater than a daily basis and the total divided by the number of days to obtain a daily number. As such, the prior rule did not truly give a daily average and thus the move to a weekly average is of little substance. Apart from this change, calculation of emissions for compliance purposes will remain the same as under the previous version of the rule.

In addition to raising the system-wide reduction requirements, the current rule adds significant new monitoring, record-keeping and reporting requirements, and a "backstop" threshold requirement to have emission controls on all condensate storage tanks with uncontrolled actual emissions of 20 tpy or more of VOC flash emission, as a state-only requirement within the EAC area pursuant to Section XVII.C.1. of Regulation Number 7. Owners and operators will continue to keep a spreadsheet that tracks emission reductions and submit an Annual Report as required under the previous version of the rule. Owners and operators are now also required to submit a semi-annual report on November 30 of each year detailing their emissions during the preceding ozone season. Additional record keeping has been added so as to require that a weekly checklist be maintained detailing inspections of control devices. This checklist will assist operators in the inspection and maintenance practice and provide a record that proper inspections have been done. If the inspections show a problem with the control device, the owner or operator will be required to notify the Division of problems on a monthly basis. This requirement will allow the Division to track problems on a more timely basis and ensure compliance with the rule. Finally, a provision has been added to require owners or operators to submit a list of all their controlled tanks on April 30 of each year and notify the Division monthly during ozone season if the control status of any tank changes.

XIX.J. December 17, 2006 (Sections I.A.1.b. and XVII)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4), C.R.S. for new and revised regulations.

### Basis

The Air Quality Control Commission has adopted these state-only provisions as a means of reducing air emissions from oil and gas operations throughout Colorado. Due to the large growth in oil and gas production in a number of regions of the state emissions from oil and gas operations have rapidly increased over the past few years and are expected to increase further in the foreseeable future. These revisions are a proactive measure designed to eliminate air emissions that could threaten attainment of ambient air quality standards and adversely affect visibility in Class I Areas. These revisions are based on reasonably available, validated, reviewed and sound scientific methodologies. All validated, reviewed and sound scientific methodologies made available by interested parties have been considered. Evidence in the record supports the finding that the rule shall result in a demonstrable reduction in air pollution, and will reduce the risk to human health or the environment or otherwise provide benefits justifying the costs. Among the options considered, the regulatory option chosen will maximize the air quality benefits in the most cost-effective manner.

### Specific Statutory Authority

The specific statutory authority for these revisions is set forth in Sections 25-7-106 and 25-7-109 of the Colorado Air Pollution Prevention and Control Act ("Act"), which allow the Commission to promulgate emission control regulations and recordkeeping requirements applicable to air pollution sources. Additional authority is set forth in Section 25-7-105.1, which allows the Commission to adopt state-only standards. Specifically, Section 25-7-106(1)(c) authorizes the Commission to adopt emission control regulations that are applicable to the entire state. Section 25-7-109(1)(a) authorizes the Commission to adopt emission control regulations. Section 25-7-109(3)(b) authorizes the Commission to adopt emission control regulations for the storage and transfer of petroleum products and any other volatile organic compounds.

### Purpose

The Revisions to Section XVII were adopted in order to reduce air emissions from oil and gas operations and natural gas fired reciprocating internal combustion engines in Colorado. These revisions constitute a forward-looking approach to deal with a rapidly growing source of air emissions, and are designed to reduce the possibility of future problems with respect to the attainment of National Ambient Air Quality Standards and state and federal Class I Area visibility goals. Since the requirements are not mandated under federal law and are not currently necessary to meet National Ambient Air Quality Standards they are being adopted as a state-only requirement in accordance with the Act and as provided for under the Federal Clean Air Act.

These revisions establish emission control requirements for condensate storage tanks, glycol dehydrators and natural gas fired reciprocating internal combustion engines in Colorado. These provisions require that condensate tank and dehydrator controls meet a 95% percent control efficiency. As in the EAC Area, this requirement does not contemplate stack testing in order to verify the control efficiency. The insertion of the word average allows operators some downtime without a violation occurring so long as the downtime does not result in an average control efficiency of less than 95% considering the actual engineered control efficiency. For the purposes of XVII.C.4.b. observed operation of flare auto-igniters can include telemetric monitoring systems, physical on-site function tests or auditory confirmation of the auto-igniter function.

The requirements applicable to glycol dehydrators mirror the requirements applicable in the 8-Hour Ozone Control Area set forth in Section XII, and should be interpreted consistently with those provisions notwithstanding the addition of clarifying language. For example, language has been added clarifying that grouping of dehydrators is limited to dehydrators at a single site. Similarly, the word "production" has

been added to the definition of condensate tank to clarify that the requirements, as within the EAC, do not apply to produced water tanks.

Determination of whether a condensate tank's emissions are at or above the threshold is based on the emissions from the tank during the preceding twelve-month period. If a tank has been in service for less than twelve months, applicability shall be based on uncontrolled actual emissions over the service period of the tank multiplied out to twelve months. Accordingly, if a tank has been in service for three months, applicability of the control requirements will be based on the uncontrolled actual emissions from the tank for those three months multiplied by four. If emissions from a controlled tank decrease, operators may remove the controls when emissions from the previous twelve-month period falls below the applicable threshold. Operators will remain responsible, however, for controlling a tank if a subsequent emission increase results in emissions being over the applicable threshold during the preceding twelve months. For tanks serving newly drilled, recompleted or restimulated wells (including refrac'd wells) the owner or operator will have 90 days to determine anticipated production and, if necessary install a control device. In determining anticipated production the owner or operator may use an appropriate decline factor to determine expected emissions over the first 12 months after the new drilling, recompletion or re-stimulation. If the owner or operator determines that emissions will be below the 20 tpy threshold following the new drilling, recompletion or restimulation, the owner or operator shall notify the Division of this determination.

Certain differences with the requirements applicable to the 8-Hour Ozone Control Area have been included in order to provide greater flexibility to operators in other areas of the state and in light of the fact that the regulation represents a proactive attempt to avoid future impacts from oil and gas emissions. Specifically, the standards for obtaining approval of an alternative pollution control device have been relaxed to promote innovative control strategies. Additionally, a provision has been added to allow an extension of the control requirement deadlines at the Division's discretion for good cause shown. This provision allows the Division to extend a deadline where shortages of control equipment, and crews may prevent an operator from meeting the deadlines, particularly in areas where access is limited by the weather or other issues. With respect to Section VII.B.1.c. of the General Provisions, the Commission has determined that as a general rule during normal operations no emissions should be visible from the air pollution control equipment. Normal operations include reasonably foreseeable fluctuations in emissions from the condensate tank, including the fluctuations that occur during a separator dump. However, a transient (lasting less than 10 seconds) "puff" of smoke when the main burner ignites or shuts down would not be considered a violation of the "no visible emission" standard. Finally, a provision has been included that exempts units subject to the rule if such units are also subject to a control standard under the MACT, BACT or NSPS Programs. This exception is of most importance for new and newly relocated engines that may become subject to a currently pending NSPS Standard under Subpart JJJJ.

The engine provisions only apply to engines that are constructed or relocated into Colorado after the applicability date and do not impose requirements on units that are currently located in the state.

The Commission recognizes that the adopted emission control requirements represent a first step in addressing rapidly growing emissions from oil and gas operations throughout the state. Accordingly the Commission directs the Division to provide an annual update on emission growth trends, environmental impacts, modeling and monitoring efforts, the adequacy of emission controls to protect the NAAQS and the health impacts of emissions from the oil and gas sector.

XIX.K. December 12, 2008 (Title, Sections I, II, VI – XIII, XVII, XVIII, and Appendices A-F)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4), C.R.S. for new and revised regulations.

#### Basis

The Air Quality Control Commission has adopted revisions throughout Regulation Number 7 to address ozone formation in the 8-Hour Ozone Nonattainment Area (NAA), including the 9-county Denver

Metropolitan Area and North Front Range (DMA/NFR) NAA. Specifically, the Commission has adopted revisions to reduce an ozone precursor, volatile organic compound (VOC) emissions, and thus reduce ozone formation. These revisions are necessary to ensure attainment with the current 8-Hour Ozone National Ambient Air Quality Standard (NAAQS) set at 0.08 parts per million (ppm), and to achieve additional ozone reductions in light of both the new ozone NAAQS set at 0.075 ppm and the Governor's July 27, 2007 directive to proactively and pragmatically reduce ozone levels.

As of November 20, 2007, the EPA's deferral of a nonattainment designation for the area in question expired, signifying that the area is now considered nonattainment, or in violation of the 1997 8-hour Ozone NAAQS of 0.08 ppm for ground level ozone. The DMA/NFR includes all of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson Counties as well as portions of Larimer and Weld Counties. This area is now known as the DMA/NFR NAA.

Pursuant to the Federal Clean Air Act, Colorado must prepare and submit a revision to the State Implementation Plan (SIP) to the EPA no later than June 30, 2009 that demonstrates attainment of the 8-Hour Ozone NAAQS no later than 2010. The Commission has adopted an Attainment Plan that satisfies this requirement. The Attainment Plan demonstrates attainment with no additional control measures.

Photochemical grid dispersion modeling indicates that without further emission controls, Colorado will attain the 8-hour standard by 2010. The dispersion modeling reflects that Colorado would attain the standard by a narrow margin. Photochemical dispersion modeling analysis is the primary tool used to assess present and future air quality trends, and is required for EPA to approve the state attainment demonstration in the SIP.

In addition, pursuant to EPA guidance, if modeling results indicate that the highest ozone levels will fall between 0.082 and 0.087 ppm, Colorado must conduct a "weight of evidence" analysis and other supplemental analyses in order to corroborate the modeling results. Colorado's model results are within this range, and thus the state has conducted this analysis. The analysis supports the conclusion that Colorado will attain the standard by 2010.

The Commission is also adopting State-only revisions to Regulation Number 7 to further address ozone formation in the DMA/NFR NAA. Specifically, the Commission has adopted revisions to reduce an ozone precursor, volatile organic compound (VOC) emissions, and thus reduce ozone formation. These revisions help Colorado make progress toward eventual compliance with the new ozone NAAQS set at 0.075 ppm as well as the Governor's directive to proactively and pragmatically reduce ozone levels.

#### Statutory Authority

The statutory authority for these revisions is set forth in the Colorado Air Pollution Prevention and Control Act ("Act"), C.R.S. § 25-7-101, et seq., specifically, C.R.S. §25-7-105(12) (authorizing rules necessary to implement the provisions of the emission notice and construction permit programs and the minimum elements of the operating permit program), 109(1)(a), (2) and (3) (authorizing rules requiring effective practical air pollution controls for significant sources and categories of sources, including rules pertaining to nitrogen oxides and hydrocarbons, photochemical substances, as well as rules pertaining to the storage and transfer of petroleum products and any other VOCs), and § 25-7-301 (authorizing the development of a program for the attainment and maintenance of the NAAQS).

#### Purpose

These revisions to Regulation Number 7 are part of an overall ozone reduction strategy. The Commission intends that this overall ozone reduction strategy accomplishes six objectives: A) reduce VOC and nitrogen oxides' (NOx) emissions from oil and gas operations in the Ozone NAA and across the state, B) revise the control requirements for condensate tanks by a refined system-wide control strategy in the Ozone NAA, C) expand VOC RACT requirements for listed source categories for 100 tpy sources such that all Ozone NAAs are subject to Regulation Number 7's RACT requirements, D) clarify how the

RACT requirements in Regulations 3 and 7 interact in the Ozone NAA, E) improve the Division's inventory of condensate emissions and other relevant sources in the NAA; and F) make typographical, grammatical and formatting changes for greater clarity and readability.

In support of objectives A-D and F above, the Commission adopts these revisions to Regulation Number 7 to revise condensate tank regulations, set pneumatic controller regulations, expand RACT applicability and make associated corrections (Regulation Number 7, Sections I, II, VI – XIII, XVII, XVIII, and Appendices A-F).

In the course of this proceeding, the Division and certain parties supported a compromise proposal regarding the control of condensate tanks. The Commission finds this proposal to be appropriate with certain changes noted herein. The Commission is requiring an increase from 75% to 81% control on a system-wide basis in 2009; to 85% control on a system-wide basis in 2010; and to 90% control on a system-wide basis in 2011 in the 8-Hour Ozone NAA. The Commission is adopting new VOC controls for pneumatic controllers in the 8-Hour Ozone NAA in Regulation Number 7, Section XVIII.

These system-wide control percentages achieve significant ozone precursor reductions in 2009, 2010 and 2011, with emphasis on significant VOC emissions reductions in 2010, during the monitoring period for the attainment demonstration. These revisions will help to ensure that the non-attainment area realizes the necessary reductions during the 2010 attainment year. Further, these revisions are an important step in putting the State on a path towards attaining the 2008 8-Hour ozone standard. A number of parties including the Regional Air Quality Council and the North Front Range Metropolitan Planning Organization supported this proposal to secure VOC reductions from this source at these levels and according to this schedule. The system-wide approach has been approved by the Commission in the past, as well as by EPA in revisions to the State Implementation Plan. The Commission decided to defer decision making on the implementation of a 95% system-wide level of control, given concerns regarding the notable incremental cost associated with control to the equivalent of 2 tpy tanks as well as concerns regarding the flexibility intended to be afforded by a system-wide approach. Tank operators also expressed concern about the loss of incentive to over-control their systems to meet the standard, and the difficulty for small operators to control at the 95% system-wide level at this time. The proposed control percentages continue to afford flexibility in operations to condensate tank operators, while ensuring attainment of the standard by 2010. Therefore, the Commission is deferring further control for future modeling, air quality analysis, and/or administrative review, whether to control this source in the future at the 95% system-wide control level or through some other approach for purposes of the 2008 8-Hour standard.

The provisions of the compromise proposal, including the commensurate emissions reductions, support the State Implementation Plan's ability to assure attainment and maintenance of the 1997 8-Hour Ozone NAAQS. Inclusion of these provisions enhances the Weight of Evidence demonstration supporting attainment by 2010 pursuant to this State Implementation Plan. The Commission recognizes parties subject to the compromise Regulation Number 7 provisions for condensate tank system-wide emissions reductions concur that these provisions are appropriate for inclusion in the State Implementation Plan.

Further the Commission intends to expand the applicability of RACT requirements to existing, new and modified sources in Ozone NAAs outside of the historic one-hour Ozone NAA or attainment/maintenance area (Regulation Number 7, Sections I and II). The Commission further intends to clarify how the control technology requirements of Regulation Number 7 interact with Regulation 3, Part B, Section II.D.2.

Finally, the Commission intends to make grammatical, typographical, formatting revisions, and other editing revisions throughout Regulation Number 7.

#### Condensate Tank Emissions Control

Condensate storage tank control requirements in Regulation Number 7, Section XII are revised by reorganizing the rule, adding/revising definitions, adding monitoring requirements, revising recordkeeping and reporting requirements, and setting additional control requirements for tanks. The current

requirements are reorganized by specifying applicability, definitions, general provisions, emissions controls, monitoring, and recordkeeping and reporting sections. The terms new, existing, modified/modification, auto-igniter, and surveillance system were defined.

Tanks serving newly drilled, recompleted or stimulated wells are required to employ air pollution control equipment during the first 90 days of production. After the first 90 calendar days, the control device may be removed. This requirement is designed to address the fact that production, and thus emissions, is at their greatest during the period immediately after drilling, recompletion or stimulation, and the fact that the actual production/emission level is not known prior to drilling, recompletion or stimulation. By requiring controls on all tanks serving newly drilled, recompleted or stimulated wells, the proposed rule significantly reduces emissions during the initial period, while allowing owners and operators to remove control devices afterward, as part of the overall system-wide control regime. All tanks over 2 tpy must participate in the overall system-wide program. Furthermore, since Regulation Number 7's system-wide program is essentially RACT for condensate tanks in the NAA, new and modified 2 tpy or greater condensate tanks (affected by Regulation 3 RACT) may also move their control devices after the first 90 days when participating in the overall system-wide control regime, as long as the overall system-wide requirements are being met. Such flexibility is provided as to avoid two regulatory programs: one for tanks that might never be allowed to move their control devices under Regulation 3 RACT and one for tanks that would be allowed the flexibility under a system-wide program. Finally, it is the intent of this rule that sources may use their 2 tpy or greater "modified" tanks emissions (i.e., during those tanks' first 90 days of production) in the source's overall system wide calculation. After 90 days, sources must include – whether controlled or otherwise - the 2 tpy or greater "modified" tanks in the overall system-wide calculation. In the case of modified tanks that fall below 2 tpy, it is not the intent of the commission for sources to include these less than 2 tpy tanks in any system-wide calculation. However, sources may use the less than 2 tpy controlled tanks, if necessary to demonstrate system-wide compliance.

The Commission is requiring the installation and operation of auto-igniters for each combustion device. In many cases, condensate tanks are remotely located and unmanned. Auto-igniters will provide greater assurance that the control devices are functioning, under these circumstances. Auto-igniters may be relied on to identify when the pilot is not lit and attempt to relight it, and ensure control operation. The Commission is also requiring surveillance on batteries with uncontrolled emissions greater than 100 tpy. Operators must use surveillance to document the duration of time when the pilot is not lit, and to discover if repairs are necessary to ensure proper control operation. The Commission is targeting this size of battery in order to strike a balance between the need to more carefully monitor performance among the largest batteries, the cost associated with surveillance and the division's capacity to manage the information. The Commission acknowledges that three well operators, Encana, Anadarko and Noble Energy, have agreed to participate with the Division in a pilot program regarding the implementation of electronic surveillance systems.

With regard to recordkeeping and reporting requirements, operators will still record estimated emissions each week (as part of the current Regulation Number 7 requirements) and will report this information to the Division semi-annually. In addition, the Division has revised these requirements so that sources now must keep monthly records throughout the year and provide any of those records within 5 business days of a division request. Further, operators may only use a Division-approved spreadsheet to submit emissions records. Further, a responsible official must now certify the accuracy of the data in the semi-annual reports. This level of recordkeeping and reporting will allow the Division greater capacity to verify compliance and additional availability to work with sources (especially smaller operators). The Commission intends that record-keeping and reporting requirements for surveillance apply only to tanks with uncontrolled emissions greater than 100 tpy.

#### Controls on 2 Tons Per Year Tanks and Lower

The Commission intends that substantial emissions reductions be achieved from condensate storage tanks and that industry retain the flexibility to decide which tanks to control in order to achieve those reductions. The rule has been revised to subject any condensate storage tank to this rule in the Applicability Section, but stipulates in the Emission Control Section that in order to determine the

appropriate system-wide emissions reductions, only two ton per year tanks be considered. In doing this, the Commission intends that tanks that emit actual uncontrolled volatile organic compound emissions of two tons per year or more be considered in determining compliance with the system-wide emissions reductions for the specific ozone non-attainment or attainment maintenance area, and that industry have the flexibility to control smaller tanks in those specific ozone non-attainment or attainment maintenance areas if needed in order to meet the applicable system-wide emissions reductions. For example, if a company owns 20 tanks that emit actual uncontrolled volatile organic compound emissions of two tons per year in a specific ozone non-attainment area, and 15 tanks that emit less than two tons per year, the company would determine its required emission reductions of the production through the 20 two tpy tanks, but be able to control any of the 15 additional less than 2 tpy tanks in order to comply with the system-wide emissions reduction or maintain the desired over control as buffer. However, all tanks controlled in order to comply with the system-wide emissions reduction standard must have filed an APEN and obtained a valid permit in order to be considered as part of the compliance demonstration.

#### Calendar Weekly and Calendar Monthly Records and Reports

The Commission intends that records and associated reports demonstrating compliance with the weekly emission reduction requirement shall start with the calendar week containing May 1st and end with the calendar week containing September 30th, or other specified dates in the rule. A calendar week begins midnight Sunday morning and ends the following Saturday evening at midnight. Thus, where May 1st falls on any day other than Sunday, the calendar week of May 1st begins on midnight of the preceding Sunday morning. Similarly, the weekly emission reduction requirement applies to the full calendar week that includes September 30th. So, if September 30th falls somewhere in the middle of a calendar week, the emissions reduction requirement applies to that calendar week in full, beginning midnight Sunday morning and ending the following Saturday evening at midnight.

Consequently, calendar monthly records and associated reports demonstrating compliance with the monthly emission reduction requirement shall apply to midnight the morning of day 1 through midnight the evening of the last day of each specific calendar month.

The Commission intentionally broadened the definition of surveillance to provide that: 1) electronic surveillance is not specifically required, and other means to gather information from remote locations is allowed; and 2) data only had to be gathered on an daily basis. The Commission intends that currently required surveillance need only monitor combustion device flame presence or temperature once every day, in order to balance the need to gather adequate data on combustion device operation with the amount of data to be gathered, handled and processed. The Commission believes this is a fair approach considering that only the largest atmospheric condensate storage tanks (those with actual uncontrolled volatile organic compound emissions equal to or greater than 100 tons per year) are subject to this surveillance requirement.

Finally, the Commission intends that the monitoring be completed to ensure compliance, and has determined that failing to monitor as required, losing monitoring data, and failing to maintain monitoring data should be treated similarly to recordkeeping requirements. Thus, these actions "may be treated by the Division as if the data were not collected."

The Commission intends that system-wide emissions control requirements apply to each specific ozone non-attainment or attainment maintenance area and not collectively to all ozone non-attainment or attainment maintenance areas state-wide. This means that the system-wide emissions control requirements apply specifically to the Ozone Control Area (a.k.a. the Denver Metropolitan Area/North Front Range Ozone Control Area), separately from any future designated ozone non-attainment area. Each new ozone non-attainment area designated in the future shall be subject to the system-wide control requirements by themselves. This is needed to ensure that necessary controls are achieved and maintained in each ozone non-attainment or attainment maintenance area, and that these controls are not removed and offset by system-wide controls in some other ozone non-attainment area.

#### Pneumatics Emissions Control

This revision establishes new VOC controls for pneumatic controllers in the 8-hour Ozone NAA in Regulation Number 7, Section XVIII. Pneumatic controllers are widely used in the oil and gas industry to control or monitor process parameters such as liquid level, gas level, pressure, valve position, liquid flow, gas flow and temperature. Pneumatic controllers of interest are instruments that are actuated using natural gas pressure (of which some natural gas may be bled to the atmosphere from the pneumatic controller and some may be vented from the associated valve). Natural gas-actuated pressure relief devices are not intended to be covered by this rule. There are high-bleed controllers designed to emit more than six standard cubic feet of gas per hour (scfh) to the atmosphere, and low-bleed controllers that emit six scfh or less. Historically, high-bleed controllers have been used.

A 2003 EPA study reported that emissions from pneumatic controllers are collectively one of the largest sources of methane emissions in the natural gas industry. Estimated annual nationwide methane emissions are approximately 31 billion cubic feet (Bcf) from the production sector, 16 Bcf from the processing sector, and 14 Bcf from the transmission sector. As stated above, by definition, high-bleed pneumatic controllers emit more than six scfh of natural gas to the atmosphere. The highest bleed rate listed in one source, a table published by the EPA, is 42 cubic feet per hour (cfh). The average bleed rate for high-bleed pneumatic controllers in the NAA is 21 cfh. Natural gas is primarily composed of methane, but also contains other compounds including VOCs and hazardous air pollutants (HAPs). VOC emissions from pneumatic controllers within the NAA were 24.8 tons per day (tpd) for the 2006 baseline and have been projected to be 31.1 tpd for the 2010 baseline. These emissions represent 14.0 and 15.1 percent of the total VOC emissions from oil and gas sources in the NAA in 2006 and 2010, respectively. Therefore, emission reductions related to this source category have the potential to be significant.

These rules require that most high-bleed controllers must be replaced with the equivalent of low-bleed or better pneumatic controllers by May 1, 2009. There is an exception that allows high-bleed controllers that the Division agrees are necessary for safety purposes. Operators must inspect and maintain in-use high-bleed controllers on a monthly basis. Operators must also keep logs of the number of in-use high-bleed controllers, as well as the reasoning that high-bleed controller remains in place, and the inspection and maintenance of the in-use high-bleed controllers. These revisions further require operators to physically tag the in-use high-bleed controllers to enable the Division to track compliance.

The oil and gas industry has already begun replacing high-bleed controllers with low-bleed controllers, understanding the financial gain of minimizing the bleed rate of pneumatic controllers.

#### RICE Controls

Reciprocating internal combustion engine (RICE) requirements of Regulation Number 7, Section XVI applies in what was the early action compact area (now the Ozone NAA). These revisions extend the RICE requirements' applicability to a state-wide basis.

#### Expand and Clarify RACT Requirements

Regulation Number 7 is revised to expand its application to all subject sources in any Ozone NAA and Attainment/Maintenance Areas. This previously applied to the one-hour attainment/maintenance area nonattainment area. Accordingly, this regulation will apply to some sources that were previously outside of its geographic scope. It is intended that existing sources become subject to previously adopted Control Technique Guidelines (CTGS) or general RACT requirements, and are given time to comply to implement the general RACT requirements. Specifically, existing sources that have not been modified are allowed three years from the date of ozone non-attainment designation to implement general RACT requirements. All new or modified sources become subject to these general RACT requirements upon commencing operation after the new ozone non-attainment designation date. This revision is considered a measured approach to ensuring the consistent use of best practices across the NAA as well as reductions in ozone precursors considered necessary to attaining the 8-hour ozone standard.

This revision expands Regulation Number 7's applicability to any Ozone NAA or attainment/maintenance area. This is done intentionally to apply Regulation Number 7 requirements to current as well as any future Ozone NAA or attainment maintenance areas in Colorado.

Additionally, this revision clarifies how the Regulation 3 RACT requirements interact with Regulation Number 7. This revision specifies that pursuant to Regulation Number 7, Section II.C. all existing sources that emit 100 tons per year of VOC emissions and that are located in the 8-hour Ozone NAA become subject to RACT.

Further, Regulation Number 7 is currently unclear on whether or not existing sources that are modified become subject to new source requirements. This revision clarifies that existing sources that are modified are subject to the Regulation Number 3, Part B, Section II.D. requirements and are considered to be a new source for the purposes of Regulation Number 7.

This revision also clarifies that the both case-by-case and general RACT requirements of Regulation Number 7, Section II.C. only apply to existing, new and modified sources. For sources at which all air pollution generating activities at that source are already subject to RACT or BACT, the RACT analysis would show that all activities are already subject to RACT or BACT. For any other air pollution generating activities not covered by RACT or BACT, the source would only have to complete a RACT analysis specific to those activities.

#### Typographical, Grammatical, Formatting and Other Changes

The commission changed the title of Regulation Number 7 to include NOx. An outline of the sections is provided to better understand the contents of Regulation Number 7. Outdated sections are removed (i.e. Section II.F.1. specific to Gates Rubber Company, which is now out of business). Section XII, specific to condensate tanks in the Ozone NAA is reorganized for clarity. One appendix (new Appendix A) is added to provide maps of Ozone NAAs and chronologies of attainment designations, of which certain requirements key off. Finally, sections and appendices are renumbered and formatted as necessary.

#### Section 110.5 and 110.8 Analysis

Some of these revisions are not intended to be incorporated into Colorado's SIP. To the extent these revisions could be construed to exceed the requirements of federal law, the Commission provides the following additional statement, consistent with C.R.S. § 25-7-110.5(5)(a):

(I) These rules are intended to reduce uncontrolled emissions of ozone precursor pollutants. The rules thereby serve to attain and maintain compliance with the National Ambient Air Quality Standard (NAAQS) for Ozone. However, there are no comparable federal requirements that apply to the sources in question.

(II) There are no applicable federal requirements, other than the duty to attain the ozone NAAQS. There is considerable flexibility in meeting the NAAQS. However, there are very limited sources of uncontrolled anthropogenic ozone precursor emissions to target in order to reduce ozone. Consequently, the sources in question, as a significant source of uncontrolled VOCs and NOx, must be targeted in order to attain the standard.

(III) There are no applicable federal requirements, other than the duty to attain the ozone NAAQS. The ozone NAAQS was not determined taking into account concerns that are unique to Colorado.

(IV) These rules may prevent or reduce the need for costly retrofit to meet more stringent requirements at a later date. The DMA/NFR non-attainment area has violated the 0.08 ppm ozone NAAQS. Colorado will soon be required to comply with the new ozone NAAQS of 0.075 ppm. Colorado Governor Ritter has directed that Colorado air quality planning agencies implement measures to reduce ozone to a level below the NAAQS. If these rules are not adopted now, it may be necessary to require more costly retrofitting in order to meet the Governor's directive as well as the new NAAQS.

(V) Since there are no applicable federal requirements, there is no timing issue with regard to implementing federal requirements. However, these controls are intended to help the DMA/NFR attain the NAAQS. If the standard is not attained by the 2010 ozone season, the area may face a “moderate” non-attainment designation.

(VI) The adopted rules will assist in establishing and maintaining a reasonable margin for accommodation of uncertainty and future growth.

(VII) The adopted rules establish reasonable equity for sources subject to the rules by providing the same standards for similarly situated sources.

(VIII) If the state rules were not adopted, other sectors may face a disproportionate share of the burden of reducing precursor pollutants.

(IX) There are no corresponding federal requirements.

(X) Demonstrated technology is available to comply. Sources are already using the control devices intended to be used to comply with these rules. However, sources face an additional burden of implementing auto-igniters and surveillance. The Commission anticipates a reasonable degree of delay in securing and installing the technology in question and has accommodated the sources by providing for a reasonable delay for the application of these requirements.

(XI) The adopted rules will reduce VOC and NO<sub>x</sub> emissions, thereby contributing to the prevention of the formation of ozone through the most cost-effective means available.

(XII) Alternative rules requiring additional controls for other sources would also provide gains toward attaining the ozone NAAQS. However, oil and gas industry members are the largest anthropogenic stationary source of precursor pollutants in the State. A disproportionate benefit to this industry would accrue if their uncontrolled emissions remain at current levels compared to other stationary sources.

(XIII) A no-action alternative may address the ozone NAAQS. Modeling and other analysis suggests that the NAA would attain the standard by 2010 without these rules. However, this analysis suggests that ambient levels of ozone would be very close to the NAAQS. These rules provide more assurance of attaining the ozone NAAQS while also providing for reductions that are necessary to make progress toward the new ozone NAAQS. No action would only delay the necessary reductions.

Further, pursuant to C.R.S. § 25-7-110.8(1), the Commission makes the determination that:

(I) These rules are based upon reasonably available, validated, reviewed, and sound scientific methodologies, and the Commission has considered all information submitted by interested parties.

(II) Evidence in the record supports the finding that the rules shall result in a demonstrable reduction of ground-level ozone.

(III) Evidence in this record supports the finding that the rules shall bring about reductions in risks to human health and the environment that justify the costs to implement and comply with the rules.

(IV) The rules are the most cost effective, provide the regulated community flexibility, and achieve any necessary reduction in air pollution.

(V) The selected regulatory alternative will maximize the air quality benefits of regulation in the most cost-effective manner.

## **Appendix A Colorado Ozone Nonattainment or Attainment Maintenance Areas**

## I. Chronology of Attainment Status

### **Denver Metropolitan Area Only**

1978 Denver 1-hour Ozone Nonattainment Area designation first becomes effective in 7-county Denver Metropolitan Area

10/11/01 Denver 1-hour Ozone Attainment Maintenance Area designation replaces non-attainment designation and becomes effective in 7-county Denver Metropolitan Area

9/2/05 1-hour Ozone National Ambient Air Quality Standard is Revoked in Colorado except for the Denver 1-hour Ozone Attainment Maintenance Area.

### **Denver Metropolitan Area and North Front Range**

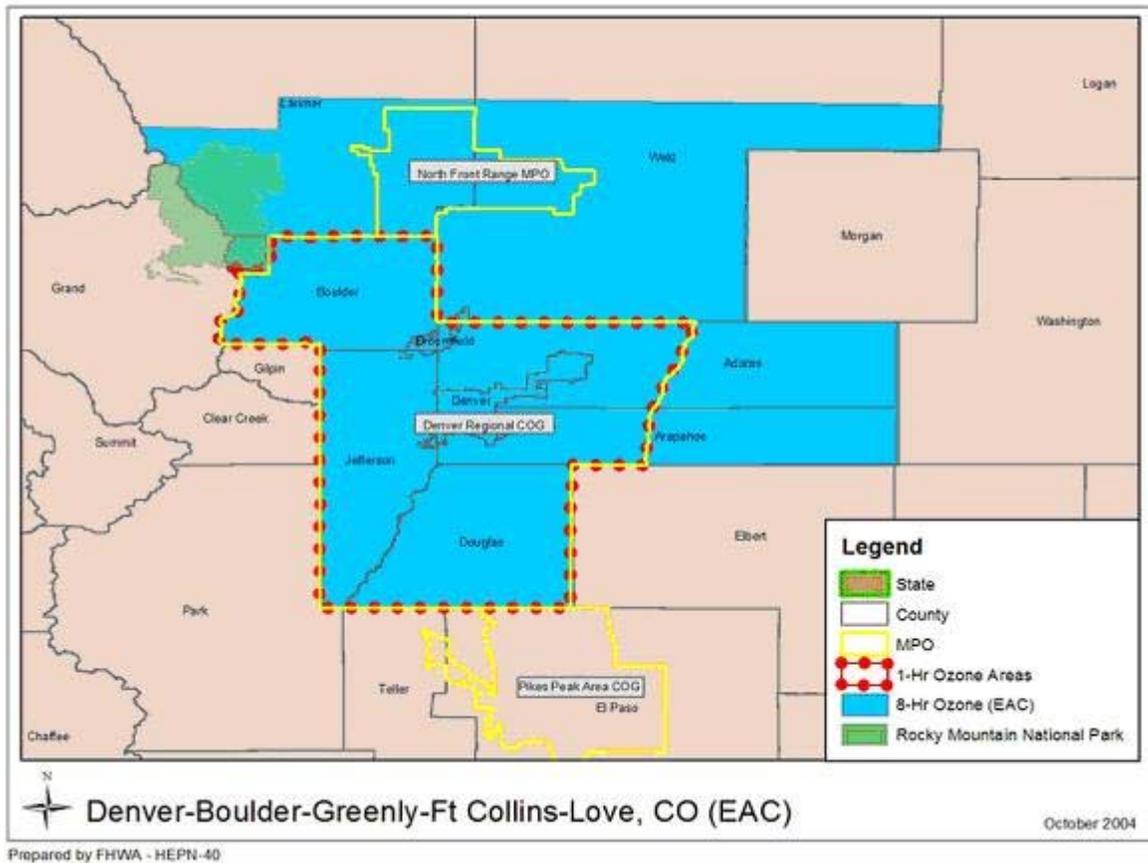
10/11/01 1-hour attainment maintenance area replaces non-attainment designation for the Denver Metro Area/North Front Range Area

4/15/04 EPA designates the Denver Metro Area/North Front Range region as an 8-hour ozone non-attainment area, designation deferred due to the implementation of the Early Action Compact

11/20/07 Denver 8-hour ozone non-attainment designation becomes effective in 9 county Denver Metropolitan Area

## II. Maps

### **Denver Metropolitan Area and North Front Range**



## Appendix B Criteria for Control of Vapors from Gasoline Transfer to Storage Tanks

- I. Drop Tube Specifications. Submerged fill is specifically required. The drop tube must extend to within 15.24 cm (6 in.) of the tank bottom.
- II. Vapor Hose Return. Vapor return line and any manifold must be minimum 7.6 cm (3 in.) ID. All tanks must be provided with individual overfill protection. (Liquid must not be allowed in the vent line or vapor recovery line.) Disconnect on liquid line should assure that all liquid in the hose is drained into the storage tank. The requirements for overfill protection as specified may be waived for existing storage tanks when it is demonstrated to the satisfaction of the appropriate local Fire Marshal, and where applicable, the State Oil Inspection Office that the installation of overfill protection devices on existing tanks is physically not possible.
- III. Size of Vapor Line Connections. For separate vapor lines, nominal three inch (7.6 cm) or larger connections must be utilized at the storage tank and truck. However, short lengths of 2-inch (5.1 cm) vertical pipe no greater than 91.4 cm (3 ft.) long are permissible if the fuel delivery rate is less than 400 gallons per minute.

Where concentric (coaxial) connections are utilized, a 45 cm<sup>2</sup> (7 sq. in.) area for vapor return shall be provided. Four-inch concentric designs are acceptable only when using a venturi-shaped outer tube or where normal drop rate of 1,700 liters per minute (450 gpm) is reduced by at least 25%. Six-inch (15.24 cm) risers should be installed in new stations with concentric connections.

- IV. Type of Liquid Fill Connection. Vapor tight caps are required for the liquid fill connection for all systems. A positive closure utilizing a gasket is necessary to prevent vapors from being emitted at ground level. Cam-lock closures meet this requirement. Dry break closures are preferred.
- V. Tank Truck Inspection. Tank trucks are specifically required to be vapor-tight and to have valid leak-tight certification. The visual inspection procedure must be conducted at least once every six months to ensure properly operating manifolding and relief valves, using the test procedure of Appendix D.B.
- VI. Dry Break on Underground Tank Vapor Riser. Dry-break closures are required to assure transfer of displaced vapors to the truck and to prevent ground-level, gasoline-vapor emissions caused by failure to connect the vapor return line to the underground tanks (closure on riser to mate with opening on hose). These devices keep the tank sealed until the hose is connected to the underground tank. Concentric couplers without dry-breaks are required to have a dry-break on the vapor line connection to the coupler itself, rather than on the rise pipe from the storage tank. The liquid fill riser should be provided with a gap having a positive closure (threaded or latched).
- VII. Equipment Ensuring Vapor-Hose Connection During Gasoline Deliveries. An equipment system aboard the tank truck shall insure (barring deliberate tampering) that a vapor return hose is connected from the truck's vapor return line to the tank receiving gasoline.
- VIII. Vent Line Restriction Devices. Vent line restriction devices are required. They both improve recovery efficiency and, as an integral part of any system, assure that the vapor return line is connected during transfer. If the liquid fill line were attached to the underground tank and the vapor return line were disconnected, then dry break closures would seal the vapor return path to the truck, forcing all vapors out the vent line. In such instances, a restriction device on this vent line greatly reduces fill rate, warning the operator that the vapor line is not connected. Both of the following devices must be used.
- (a) An orifice of one-half to three-fourth inch (1.25 - 1.9 cm) ID.
  - (b) A pressure/vacuum relief valve set to open at (1) a positive gauge-pressure greater or equal to five inches of water (9 torr) and at (2) a negative gauge-pressure greater or equal to five inches of water (9 torr).
- IX. Fire and Safety Regulations. All new or modified installations must comply in their entirety with all code requirements including NFPA, Pamphlet 30 (fiberglass is preferred for new manifold lines). For any questions concerning compliance, please contact State Oil Inspection or your local Fire Marshal.
- X. State Oil Inspection. Requirements of the State Oil Inspection office make accurate measurements of the liquid in the underground tank necessary. Vapor-tight gauging devices will be required in all systems designed such that a pressure other than atmospheric will be held or maintained in the storage tank. The volume of liquid in the tanks maintained at atmospheric pressure may be determined with a stick through the submerged drop tube or through a separate submerged gauging tube extending to within 15.24 cm (6 in.) of the tank bottom.

#### **Appendix C Criteria for Control of Vapors From Gasoline Transfer at Bulk Plants (Vapor Balance System)**

##### **I. Storage Tank Requirements:**

- A. Drop Tube Specification: Underground tanks must contain a drop tube that extends to within six inches (15.24 cm) of the tank bottom. All top loaded above-ground tanks must

contain a similar drop tube. Above-ground tanks using bottom loading, where the inlet is flush with the tank bottom, must meet the submerged fill requirement.

- B. Size of Vapor Lines from Storage Tanks to Loading Rack: See nomograph (Attachment 1). NOTE: Affected sources are free to choose a pipe diameter different from the one suggested by the nomograph if sufficient justification and documentation is presented.
- C. Pressure Relief Valves: All pressure relief valves and valve connections must be checked periodically for leaks, and be repaired as required. The relief valve pressures should be set in accordance with Sections 2-2.5.1 and 2-2.7.1 inclusive of the current National Fire Protection Agency Pamphlet Number 30.
- D. Liquid Level Check Port: Access for checking liquid level by other than a vapor-tight gauging system shall be vapor-tight when not being used. Tank level shall be checked prior to filling to avoid overfills.
- E. Miscellaneous Tank Openings: All other tank openings, e.g., tank inspection hatches, must be vapor tight when not being used, and must be closed at all times during transfer of fuel.
- F. Storage Tank Overfill Protection: Except for concentric (coaxial) delivery systems, underground tanks must have ball check valves (stainless steel ball). Tanks with concentric delivery systems must have Division-approved overfill protection, (e.g., cutoff pressure-switch in vent line).

## II. Loading Rack Requirements:

- A. Loading Specification: A vapor-tight bottom-loading or top-loading system using submerged fill with a positive seal, e.g., the Wiggins (tm) system, is required. NOTE: Bulk plants delivering solely to exempt accounts are required to have submerged fill, but loading need not be vapor-tight.
- B. Dry-Break on Storage Tank Vapor Return Line: A dry-break is required to prevent ground-level gasoline vapor emissions during periods when gasoline transfer is not being made. This device keeps the tank sealed until the vapor return hose is connected.

## III. Tank Truck\* Requirements:

- A. Vapor Return Modification: Tank trucks must be modified to recover vapors during loading and unloading operations. NOTE: Tank trucks making deliveries solely to exempt accounts do not require this modification. However, 97% submerged fill is required when top loading.
- B. Loading Specifications: Bottom loading or top loading using submerged fill with a positive seal is required for tank trucks modified for vapor recovery. NOTE: When loading a tank truck with this modification without the vapor return hose connected (this is allowed at bulk plants servicing exempt accounts returning without collected vapors in the tank), the requirements of National Fire Protection Agency Pamphlet Number 385, "Loading and Unloading Venting Protection in Tank Vehicles, Section 2219, Paragraph c", must be met.
- C. Vapor Return Hose Size: A minimum three-inch (7.6 cm) ID vapor return hose is required.

- D. Tank Truck Inspection: Tank trucks are required to be vapor-tight and have valid leak-tight certification. Periodic visual inspection is necessary to insure properly operating manifolding and relief valves.

\* The term "tank truck" is meant to include all trucks with tanks used for the transport of gasoline, such as tank wagons, account trucks and transport trucks.

**Appendix D Minimum Cooling Capacities for Refrigerated Freeboard Chillers on Vapor Degreasers**

The specifications in this Appendix apply only to vapor degreasers that have both condenser coils and refrigerated freeboard chillers. (The coolant in the condenser coils is normally water.) The amount of refrigeration capacity is expressed in Calories/Hour per meter of perimeter. This perimeter is measured at the air/vapor interface.

For refrigerated chillers operated below 0°C., the following requirements apply:

DEGREASER WIDTH	*CALORIES/HR METER OF PERIMETER	BTU/HR FOOT OF PERIMETER
Less than 1.1 meters (3.5 ft.)	165	200
1.1 - 1.8 meters (3.5 - 6.0 ft.)	250	300
1.8 - 2.4 meters (6.0 - 8.0 ft.)	335	400
2.4 - 3.0 meters (8.0 - 10.0 ft.)	145	500
Greater than 3.0 meters (10 ft.)	500	600

\* Kilocalories (1 Kilocalorie = 4184.0 joules)

For refrigerated chillers operating above 0°C., there shall be at least 415 Calories/Hr. - meter of perimeter (500 BTU/Hr-ft.), regardless of size.

Definition:

"Air/Vapor Interface" - means the surface defined by the top of the solvent vapor layer within the confines of a vapor degreaser.

**Appendix E Test Procedures for Annual Pressure/Vacuum Testing of Gasoline Transport Tanks**

A. Testing

The delivery tank, mounted on either the truck or trailer, is pressurized isolated from the pressure source, and the pressure drop recorded to determine the rate of pressure change. A vacuum test is to be conducted in a similar manner. The Division shall provide forms which designate all required information to be recorded by the testing agency.

B. Visual Inspection

The entire tank, including domes, dome vents, cargo tank, piping, hose connections, hoses and delivery elbows, shall be inspected for wear, damage, or misadjustment that could be a potential leak source. Inspect all rubber fittings except those in piping which are not accessible. Any part found to be defective shall be adjusted, repaired, or replaced as necessary. (Safety note: it is strongly recommended that

testing be done outside, unless tank is first degassed (e.g., steamcleaned). No "hot work" or spark-producing procedures should be undertaken without first degassing).

### C. Equipment Requirements

1. Necessary equipment.
  - a. Source of air or inert gas of sufficient quantity to pressurize tanks to 27.7 inches of water (1.0 psi; 52 torr) above atmospheric pressure.
  - b. Water manometer with 0 to 25 inch range (0-50 torr); with scale readings of 0.1 inch (or 0.2 torr).
  - c. Test cap for vapor line with a shut-off valve for connection to the pressure and vacuum supply hoses. The test cap is to be equipped with a separate tap for connecting with manometer.
  - d. Cap for the gasoline delivery hose.
  - e. Vacuum device (aspirator, pump, etc.) of sufficient capacity to evacuate tank to ten (10) inches of water (20 torr).
2. Recommended equipment
  - a. In-line, pressure-vacuum relief valve set to activate at one (1) psi (52 torr) with a capacity equal to the pressurizing or evacuating pumps. (Note: This is a safety measure to preclude the possibility of rupturing the tank).
  - b. Low pressure (5 psi (250 torr) divisions) regulator for controlling pressurization of tank.

### D. Vacuum and Pressure Tests of Tanks

1. Pressure Test
  - a. The dome covers are to be opened and closed.
  - b. The tank shall be purged of gasoline vapor and tested empty. The tank may be purged by any safe method such as flushing with diesel fuel, or heating oil. (For major repairs it is recommended that the tank be degassed by steam cleaning, etc.)
  - c. Connect static electrical ground connections to tank. Attach the delivery and vapor hoses, remove the delivery elbows and plug the liquid delivery fittings. (The latter can normally be accomplished by shutting the delivery valves).
  - d. Attach the test cap to the vapor recovery line of the delivery tank.
  - e. Connect the pressure (or vacuum) supply hose and, optionally, the pressure-vacuum relief valve to the shut-off valve. Attach a manometer to the pressure tap on the vapor-hose cap. Attach pressure source to the hose.
  - f. Connect compartments of the tank internally to each other if possible.

- g. Open shut-off valve in the vapor recovery hose cap. Applying air pressure slowly, pressurize the tank, or alternatively the first compartment, to 18 inches of water (35 torr).
  - h. Close the shut-off valve, allow the pressure in the delivery tank to stabilize (adjust the pressure if necessary to maintain 18 inches of water (35 torr), record the time and initial pressure; begin the test period.
  - i. At the end of five (5) minutes, record the final time, pressure, and pressure change. Disconnect the pressure source from the pressure/vacuum supply hose, and slowly open the shut-off valve to bring the tank to atmospheric pressure.
  - j. Repeat for each compartment if they were not interconnected.
2. Vacuum Test
- a. Connect vacuum source to pressure and vacuum supply hose.
  - b. Slowly evacuate the tank, or alternatively the first compartment, to six (6) inches of water (12 torr). Close the shut-off valve, allow the pressure in the delivery tank to stabilize (adjust the pressure if necessary to maintain six (6) inches of water (12 torr) vacuum), record the initial pressure and time; begin the test period. At the end of five (5) minutes, record the final pressure, time, and pressure change.
  - c. Repeat for each compartment if they were not interconnected.

E. Leak Check of Vapor Return Valve

- 1. After passing the vacuum and pressure tests, by making any needed repairs, pressurize the tank as in D.1. above to eighteen (18) inches of water (35 torr).
- 2. Close the internal valve(s) including the vapor valve(s) and "fire valves."
- 3. Relieve the pressure in the vapor return line to atmospheric pressure, leaving relief valve open to atmospheric pressure.
- 4. After five (5) minutes, seal the vapor return line by closing relief valve(s). Then open the internal valves including the vapor valve(s) and record the pressure, time, and pressure change. (To trace a leaking vapor valve it may be advantageous to open each vapor valve one at a time and record the pressure after each.)
- 5. The leak rate attributed to the vapor return valve shall be calculated by subtracting the pressure change in the most recent pressure test per D.1.i. above from the pressure change in E.4.

**Appendix F Emission Limit Conversion Procedure**

The following procedure shall be used to convert emission limits expressed as lb VOC/gallon coating less water and exempt solvents to limits expressed as lb VOC/gallon solids. This example uses the emission limit of 3.7 lb VOC/gallon coating.

Assume VOC density of the 'Presumptive' RACT coating is 7.36 pounds per gallon because this same value was used to determine the "Presumptive" recommended RACT emission limits from volume solids data.

$(3.7) \text{ LB VOC} / \text{GAL COATING LESS WATER} \times 1 \text{ GAL VOC} \times 100 / 7.36 \text{ LB VOC} = (50) \text{ VOL\% VOC}$

$100 - (50) \text{ VOL\% VOC} = (50) \text{ VOL\% SOLIDS}$

$(3.7) \text{ LB VOC} / \text{GAL COATING LESS H}_2\text{O} \times 100 \text{ GAL COATING} / (50) \text{ GAL SOLIDS} = (7.4) \text{ LB VOC} / \text{GAL SOLIDS}$

See "A Guideline For Surface Coating Calculations" EPA - 340/1-86-016 for additional examples.

The following table lists equivalent mass VOC/volume solids emission limits for various coating operations.

### Equivalency Data for Surface Coating Processes

(VOC Density = 7.36 lb/gal)

Industrial Finishing Categories	Lb VOC per Gallon Coating less water	Lb VOC per Gallon of Solids	Kg VOC per Liter of Solids
<i>Can Industry</i>			
Sheet Basecoat (Exterior and Interior) and over-varnish; two-piece can exterior (base-coat and over-varnish)	2.8	4.5	0.55
Two- and three-piece can interior body spray, two-piece can exterior end spray or roll coat	4.2	9.8	1.19
Three-piece can side-seam spray	5.5	21.7	2.61
End sealing compound	3.7	7.4	0.88
Any additional coats	4.2	9.8	1.19
<i>Coil Coating</i>			
Any coat	2.6	4.0	0.48
<i>Fabric Coating</i>			
Fabric coating line	2.9	4.8	0.58
Vinyl coating line	3.8	7.9	0.93
<i>Paper Coating</i>			
Coating line	2.9	4.8	0.58

<i>Automotive and Light-Duty Truck Assembly Plant</i>			
Primer (electrodeposition) application, flashoff area and oven	1.9	2.6	0.31
Topcoat application, flashoff area and oven	2.8	4.5	0.55
Final repair application, flashoff area and oven	4.8	13.8	1.67
<i>Metal Furniture</i>			
Coating line	3.0	5.1	0.61
<i>Magnet Wire</i>			
Wire coating operation	1.7	2.2	0.26
<i>Large Appliances</i>			
Prime, single, or topcoat application area, flashoff area and oven	2.8	4.5	0.55
<i>Miscellaneous Metal Parts and Products</i>			
Air-dried items	3.5	6.7	0.80
Clear-coated items	4.3	10.3	1.25
Extreme performance coatings	3.5	6.7	0.80
Other coatings and systems	3.0	5.1	0.61
<i>Plastic Film Coating</i>			
Plastic film coating line	2.9	4.8	0.58