

Texas Commission on Environmental Quality

Chapter 115 - Control of Air Pollution from Volatile Organic Compounds

Subchapter E : Solvent-Using Processes

DIVISION 3 : FLEXOGRAPHIC AND ROTOGRAVURE PRINTING

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Outline:

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~~compliance with its rules. The new and amended sections are also adopted under Federal Clean Air Act (FCAA), 42 United States Code (USC), §§7401, et seq., which requires states to submit state implementation plan revisions that specify the manner in which the National Ambient Air Quality Standards will be achieved and maintained within each air quality control region of the state.~~

~~The adopted amendments and new section implement THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021, and FCAA, 42 USC, §§7401 et seq.~~

§115.430. Applicability and Definitions.

(a) Applicability. The requirements in this division apply to the following flexographic and rotogravure printing processes in the Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions), and in Gregg, Nueces, and Victoria Counties:

- (1) packaging rotogravure printing lines;
- (2) publication rotogravure printing lines;
- (3) flexographic printing lines; and
- (4) flexible package printing lines.

(b) Definitions. Unless specifically defined in the Texas Clean Air Act (Texas Health and Safety Code, Chapter 382) or in §§3.2, 101.1, or 115.10 of this title (relating to Definitions), the terms in this division have the meanings commonly used in the field of air pollution control. In addition, the following meanings apply in this division unless the context clearly indicates otherwise.

(1) **Cleaning operation**--The cleaning of a press, press parts, or removing dried ink from areas around a press. A cleaning operation does not include cleaning electronic components of a press; cleaning in pre-press (e.g., platemaking) or post-press (e.g., binding) operations; the use of janitorial supplies (e.g., detergents or floor cleaners) to clean areas around a press; and parts washers or cold cleaners.

(2) **Daily weighted average**--The total weight of volatile organic compounds (VOC) emissions from all materials subject to the same VOC content limit in §115.432 of this title (relating to Control Requirements) divided by the total volume or weight of those materials (minus water and exempt solvent), where applicable, or divided by the total volume or weight of solids applied to each printing line per day.

(3) **Flexible package printing**--Flexographic or rotogravure printing on any package or part of a package the shape of which can be readily changed including, but not limited to, bags, pouches, liners, and wraps using paper, plastic, film, aluminum foil, metalized or coated paper or film, or any combination of these materials.

(4) **Flexographic printing**--A method of printing in which the image areas are raised above the non-image areas, and the image carrier is made of an elastomeric material.

(5) **Packaging rotogravure printing**--Any rotogravure printing on paper, paper board, metal foil, plastic film, or any other substrate that is, in subsequent operations, formed into packaging products or labels.

(6) **Publication rotogravure printing**--Any rotogravure printing on paper that is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, or other types of printed materials.

(7) **Rotogravure printing**--The application of words, designs, or pictures to any substrate by means of a roll printing technique that involves a recessed image area. The recessed area is loaded with ink and pressed directly to the substrate for image transfer.

§115.431. Exemptions.

(a) In the Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions), the following exemptions apply.

(1) In the Beaumont-Port Arthur, Dallas-Fort Worth, and El Paso areas, all rotogravure and flexographic printing lines on a property that, when uncontrolled, have a maximum potential to emit a combined weight of volatile organic compounds (VOC) less than 50 tons per year (based on historical ink and VOC solvent usage, and at maximum production capacity) are exempt from the requirements in §115.432(a) of this title (relating to Control Requirements).

(2) In the Houston-Galveston-Brazoria area, all rotogravure and flexographic printing lines on a property that, when uncontrolled, have a maximum potential to emit a combined weight of VOC less than 25 tons per year (based on historical ink and VOC solvent usage, and at maximum production capacity) are exempt from the requirements in §115.432(a) of this title.

(3) Beginning March 1, 2013, in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas, all flexible package printing lines located on a property that have a combined weight of total actual VOC emissions less than 3.0 tons per year from all coatings, as defined in §101.1 of this title (relating to Definitions), and all associated cleaning operations are exempt from the requirements in §115.432(c) and (d) of this title.

(4) Beginning March 1, 2013, in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas, each flexible package printing line that, when uncontrolled, has a maximum potential to emit total VOC emissions less than 25 tons per year from all coatings is exempt from the requirements in §115.432(c) of this title.

(b) In Gregg, Nueces, and Victoria Counties, all rotogravure and flexographic printing lines on a property that, when uncontrolled, emit a combined weight of VOC less than 100 tons per year (based on historical ink and VOC solvent usage) are exempt from the requirements in §115.432(b) of this title.

§115.432. Control Requirements.

(a) In the Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions), the following control requirements apply. Beginning March 1, 2013, this subsection no longer applies to flexible package printing lines in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas that are required to comply with the requirements in subsection (c) of this section.

(1) The owner or operator shall limit the volatile organic compounds (VOC) emissions from solvent-containing ink used on each packaging rotogravure, publication rotogravure, flexible package, and flexographic printing line by using one of the following options.

(A) The owner or operator shall apply low solvent ink with a volatile fraction containing 25% by volume or less of VOC solvent and 75% by volume or more of water and exempt solvent.

(B) The owner or operator shall apply high solids solvent-borne ink containing 60% by volume or more of nonvolatile material (minus water and exempt solvent).

(C) The owner or operator shall operate a vapor control system to reduce the VOC emissions from an effective capture system by at least 90% by weight. The design and operation of the capture system for each printing line must be consistent with good engineering practice and must achieve, as demonstrated to the satisfaction of the executive director, upon request, of at least the following weight percentages:

(i) 75% for a publication rotogravure process;

(ii) 65% for a packaging rotogravure process;

(iii) 60% for a flexographic printing process; or

(iv) for a flexible package printing process, the overall control efficiency in clause (ii) or (iii) of this subparagraph, depending on the type of press used.

(2) A flexographic and rotogravure printing line that becomes subject to paragraph (1) of this subsection by exceeding the exemption limits in §115.431(a) of this title (relating to Exemptions) is subject to the provisions of this subsection even if throughput or emissions later fall below exemption limits unless emissions are

maintained at or below the controlled emissions level achieved while complying with paragraph (1) of this subsection and one of the following conditions is met.

(A) The project that caused the throughput or emission rate to fall below the exemption limits in §115.431(a) of this title must be authorized by a permit, permit amendment, standard permit, or permit by rule required by Chapter 116 of this title (relating to Control of Air Pollution by Permit for New Construction or Modification) or Chapter 106 of this title (relating to Permits by Rule). If a permit by rule is available for the project, the owner or operator shall continue to comply with paragraph (1) of this subsection for 30 days after the filing of documentation of compliance with that permit by rule.

(B) If authorization by permit, permit amendment, standard permit, or permit by rule is not required for the project, the owner or operator shall provide the executive director 30 days notice of the project in writing.

(3) Any capture efficiency testing of the capture system must be conducted in accordance with §115.435(a) of this title (relating to Testing Requirements).

(b) In Gregg, Nueces, and Victoria Counties, the owner or operator shall limit the VOC emissions from solvent-containing ink used on each packaging rotogravure, publication rotogravure, flexible package, and flexographic printing line by using one of the following options.

(1) The owner or operator shall apply low solvent ink with a volatile fraction containing 25% by volume or less of VOC solvent and 75% by volume or more of water and exempt solvent.

(2) The owner or operator shall apply high solids solvent-borne ink containing 60% by volume or more of nonvolatile material (minus water and exempt solvent).

(3) The owner or operator shall operate a vapor control system to reduce the VOC emissions from an effective capture system by at least 90% by weight. The design and operation of the capture system for each printing line must be consistent with good engineering practice and must achieve an overall control efficiency, as demonstrated to the satisfaction of the executive director, upon request, of at least the following weight percentages:

(A) 75% for a publication rotogravure process;

(B) 65% for a packaging rotogravure process;

(C) 60% for a flexographic printing process; or

(D) for a flexible package printing process, the overall control efficiency in subparagraph (B) or (C) of this paragraph, depending on the type of press used.

(c) Beginning March 1, 2013, in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas, the following control requirements apply to each flexible package printing line.

(1) The owner or operator shall limit the VOC emissions from coatings, as defined in §101.1 of this title (relating to Definitions), applied on each flexible package printing line by using one of the following options. These limits are based on the daily weighted average, as defined in §115.430(b) of this title (relating to Applicability and Definitions).

(A) The owner or operator shall limit the VOC emissions from the coatings to 0.80 pound of VOC per pound of solids applied. The VOC emission limit can be met through the use of low-VOC coatings or a combination of coatings and the operation of a vapor control system.

(B) The owner or operator shall limit the VOC emissions from the coatings to 0.16 pound of VOC per pound of coating applied. The VOC emission limit can be met through the use of low-VOC coatings or a combination of coatings and the operation of a vapor control system.

(C) The owner or operator shall operate a vapor control system that achieves an overall control efficiency of at least 80% by weight.

(2) A flexographic and rotogravure printing line that becomes subject to paragraph (1) of this subsection by exceeding the exemption limits in §115.431(a) of this title is subject to paragraph (1) of this subsection even if throughput or emissions later fall below exemption limits unless emissions are maintained at or below the controlled emissions level achieved while complying with paragraph (1) of this subsection and one of the following conditions is met.

(A) The project that caused the throughput or emission rate to fall below the exemption limits in §115.431(a) of this title must be authorized by a permit, permit amendment, standard permit, or permit by rule required by Chapter 116 of this title or Chapter 106 of this title. If a permit by rule is available for the project, the owner or operator shall continue to comply with paragraph (1) of this subsection for 30 days after the filing of documentation of compliance with that permit by rule.

(B) If authorization by permit, permit amendment, standard permit, or permit by rule is not required for the project, the owner or operator shall provide the executive director 30 days notice of the project in writing.

(3) An owner or operator applying coatings in combination with a vapor control system to meet the VOC emission limits in paragraph (1)(A) or (B) of this subsection shall use the following equation to determine the minimum overall control efficiency necessary to demonstrate equivalency. Control device and capture efficiency testing must be performed in accordance with the testing requirements in §115.435(a) of this title.

Figure: 30 TAC §115.432(c)(3)

$$E = \frac{(VOC - S)}{VOC}$$

Where:

E = The required overall control efficiency, decimal fraction.

VOC = The volatile organic compounds (VOC) content of the coatings applied on the printing line expressed in units consistent with the VOC limit in paragraph (1)(A) or (B) of this subsection. The owner or operator may choose to use either a daily weighted average or the maximum VOC content.

S = The applicable VOC limit in paragraph (1)(A) or (B) of this subsection. The units for this variable and the VOC variable must be the same.

(d) The owner or operator of a flexible package printing process shall implement the following work practices for cleaning materials:

(1) keep all cleaning solvents and used shop towels in closed containers;

and

(2) convey cleaning solvents from one location to another in closed containers or pipes.

§115.433. Alternate Control Requirements.

For the owner or operator of a flexographic or rotogravure printing line subject to this division, alternate methods of demonstrating and documenting continuous compliance with the applicable control requirements or exemption criteria in this division may be approved by the executive director in accordance with §115.910 of this title (relating to Availability of Alternate Means of Control) if emission reductions are demonstrated to be substantially equivalent.

§115.435. Testing Requirements.

(a) In the Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions), compliance with the control requirements in §115.432 of this title (relating to Control Requirements) must be determined by applying the following test methods, as appropriate:

(1) Methods 1 - 4 (40 Code of Federal Regulations (CFR) Part 60, Appendix A) for determining flow rates, as necessary;

(2) Method 24 (40 CFR Part 60, Appendix A) for determining the volatile organic compounds (VOC) content and density of printing inks and related coatings;

(3) Method 25 (40 CFR Part 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(4) Methods 25A or 25B (40 CFR Part 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(5) the United States Environmental Protection Agency (EPA) guidelines series document "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84-019, as in effect December 1984;

(6) additional performance test procedures described in 40 CFR §60.444 (as amended through October 18, 1983 (48 FR 48375));

(7) minor modifications to these methods and procedures approved by the executive director; and

(8) for the capture efficiency, the applicable procedures outlined in 40 CFR §52.741, Subpart O, Appendix B (as amended through October 21, 1996 (61 FR 54559)). These procedures are: Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure; Procedure L - VOC Input; Procedure G.2 - Captured VOC Emissions (Dilution Technique); Procedure F.1 - Fugitive VOC Emissions from Temporary Enclosures; Procedure F.2 - Fugitive VOC Emissions from Building Enclosures.

(A) The following exemptions apply to capture efficiency testing requirements.

(i) If a source installs a permanent total enclosure that meets the specifications of Procedure T and that directs all VOC to a control device, then the capture efficiency is assumed to be 100%, and the source is exempt from capture efficiency testing requirements. This does not exempt the source from performance of any control device efficiency testing that may be required. In addition, a source must demonstrate all criteria for a permanent total enclosure are met during testing for control efficiency.

(ii) If a source uses a control device designed to collect and recover VOC (e.g., carbon adsorption system), an explicit measurement of capture efficiency is not necessary if the following conditions are met. The overall control of the system can be determined by directly comparing the input liquid VOC to the recovered liquid VOC. The general procedure for use in this situation is given in 40 CFR §60.433 (as amended through October 17, 2000 (65 FR 61761)) with the following additional restrictions.

(I) The source must be able to equate solvent usage with solvent recovery on a 24-hour (daily) basis, rather than a 30-day weighted average. This verification must be done within 72 hours following each 24-hour period of the 30-day period specified in 40 CFR §60.433 (as amended through October 17, 2000 (65 FR 61761)).

(II) The solvent recovery system (i.e., capture and control system) must be dedicated to a single process line (e.g., one process line venting to a carbon adsorption system); or if the solvent recovery system controls multiple process lines, the source must be able to demonstrate that the overall control (i.e., the total recovered solvent VOC divided by the sum of liquid VOC input to all process lines venting to the control system) meets or exceeds the most stringent standard applicable for any process line venting to the control system.

(B) The capture efficiency must be calculated using one of the following four protocols referenced. The owner or operator of any affected source shall use one of these protocols, unless a suitable alternative protocol is approved by the executive director and the EPA.

(i) Gas/gas method using temporary total enclosure (TTE).

The EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The following equation must be used to determine the capture efficiency for this protocol.

Figure: 30 TAC §115.435(a)(8)(B)(i)

$$CE = \frac{G_w}{(G_w + F_w)}$$

Where:

CE = The capture efficiency, decimal fraction.

G_w = The mass of volatile organic compounds (VOC) captured and delivered to control device using a temporary total enclosure (TTE) (use Procedure G.2).

F_w = The mass of fugitive VOC that escapes from a TTE (use Procedure F.1).

(ii) Liquid/gas method using TTE. The EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The following equation must be used to determine the capture efficiency for this protocol.

Figure: 30 TAC §115.435(a)(8)(B)(ii)

$$CE = \frac{(L - F)}{L}$$

Where:

CE = The capture efficiency, decimal fraction.

L = The mass of liquid volatile organic compounds (VOC) input to process (use Procedure L).

F = The mass of fugitive VOC that escapes from a temporary total enclosure (TTE) (use Procedure F.1).

(iii) Gas/gas method using the building or room enclosure (BE) in which the affected source is located and in which the mass of VOC captured and delivered to a control device and the mass of fugitive VOC that escapes from building enclosure are measured while operating only the affected facility. All fans and blowers in the BE must be operating as they would under normal production. The following equation must be used to determine the capture efficiency for this protocol.

Figure: 30 TAC §115.435(a)(8)(B)(iii)

$$CE = \frac{G}{(G + F_B)}$$

Where:

- CE = The capture efficiency, decimal fraction.
- G = The mass of volatile organic compounds (VOC) captured and delivered to a control device (use Procedure G.2).
- F_B = The mass of fugitive VOC that escapes from building enclosure (use Procedure F.2).

(iv) Liquid/gas method using a BE in which the mass of liquid VOC input to process and the mass of fugitive VOC that escapes from BE are measured while operating only the affected facility. All fans and blowers in the BE must be operated as they would under normal production. The following equation must be used to determine the capture efficiency for this protocol.

Figure: 30 TAC §115.435(a)(8)(B)(iv)

$$CE = \frac{L}{F_B - L}$$

Where:

- CE = The capture efficiency, decimal fraction.
- L = The mass of liquid volatile organic compounds (VOC) input to process (use Procedure L).

F_B = The mass of fugitive VOC that escapes from a building or room enclosure (use Procedure F.2).

(C) The operating parameters selected for monitoring of the capture system for compliance with the requirements in §115.436(a) of this title (relating to Monitoring and Recordkeeping Requirements) must be monitored and recorded during the initial capture efficiency testing and thereafter during facility operation. The executive director may require a new capture efficiency test if the operating parameter values change significantly from those recorded during the initial capture efficiency test.

(b) In Gregg, Nueces, and Victoria Counties, compliance with the requirements in this division must be determined by applying the following test methods, as appropriate:

(1) Methods 1 - 4 (40 CFR Part 60, Appendix A) for determining flow rates, as necessary;

(2) Method 24 (40 CFR Part 60, Appendix A) for determining the VOC content and density of printing inks and related coatings;

(3) Method 25 (40 CFR Part 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(4) Methods 25A or 25B (40 CFR Part 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(5) the EPA guidelines series document "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84-019, as in effect December 1984;

(6) additional performance test procedures described in 40 CFR §60.444 (as amended through October 18, 1983 (48 FR 48375)); or

(7) minor modifications to these test methods and procedures approved by the executive director.

(c) Methods other than those specified in subsections (a)(1) - (6) and (b)(1) - (6) of this section may be used if approved by the executive director and validated using Method 301 (40 CFR Part 63, Appendix A). For the purposes of this subsection, substitute "executive director" each place that Method 301 references "administrator."

§115.436. Monitoring and Recordkeeping Requirements.

(a) In the Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions), the

owner or operator of a rotogravure or flexographic printing line subject to this division shall:

(1) maintain records of the volatile organic compounds (VOC) content of all inks as applied to the substrate. Additionally, records of the quantity of each ink and solvent used must be maintained. The composition of inks may be determined by the methods referenced in §115.435(a) of this title (relating to Testing Requirements) or by examining the manufacturer's formulation data and the amount of dilution solvent added to adjust the viscosity of inks prior to application to the substrate;

(2) maintain daily records of the quantity of each ink and solvent used at a facility subject to the requirements of an alternate means of control approved by the executive director in accordance with §115.433 of this title (relating to Alternate Control Requirements) that allows the application of inks exceeding the applicable control limits. Such records must be sufficient to demonstrate compliance with the applicable emission limitation on a daily weighted average;

(3) install and maintain monitors to continuously measure and record operational parameters of any control device installed to meet applicable control requirements. Such records must be sufficient to demonstrate proper functioning of those devices to design specifications, including:

(A) the exhaust gas temperature of direct-flame incinerators or gas temperature immediately upstream and downstream of any catalyst bed;

(B) the total amount of VOC recovered by a carbon adsorption or other solvent recovery system during a calendar month;

(C) the exhaust gas VOC concentration of any carbon adsorption system, as defined in §115.10 of this title, to determine if breakthrough has occurred; and

(D) the dates and reasons for any maintenance and repair of the required control devices and the estimated quantity and duration of VOC emissions during such activities;

(4) maintain the results of any testing conducted at an affected facility in accordance with the provisions specified in §115.435(a) of this title;

(5) maintain all records at the affected facility for at least two years and make such records available upon request to authorized representatives of the executive director, the United States Environmental Protection Agency (EPA), or any local air pollution agency with jurisdiction; and

(6) maintain on file the capture efficiency protocol submitted under §115.435(a)(8) of this title. The owner or operator shall submit all results of the test methods and capture efficiency protocols to the executive director within 60 days of the actual test date. The source owner or operator shall maintain records of the capture

efficiency operating parameter values on-site for a minimum of one year. If any changes are made to capture or control equipment, the owner or operator is required to notify the executive director in writing within 30 days of these changes, and a new capture efficiency or control device destruction or removal efficiency test may be required.

(b) In Gregg, Nueces, and Victoria Counties, the owner or operator of any rotogravure or flexographic printing line shall:

(1) maintain records of the VOC content of all inks as applied to the substrate. Additionally, records of the quantity of each ink and solvent used must be maintained. The composition of inks may be determined by the methods referenced in §115.435(b) of this title or by examining the manufacturer's formulation data and the amount of dilution solvent added to adjust the viscosity of inks prior to application to the substrate;

(2) maintain daily records of the quantity of each ink and solvent used at a facility subject to the requirements of an alternate means of control approved by the executive director in accordance with §115.433 of this title that allows the application of inks exceeding the applicable control limits. Such records must be sufficient to demonstrate compliance with the applicable emission limitation on a daily weighted average;

(3) install and maintain monitors to continuously measure and record operational parameters of any control device installed to meet applicable control

requirements. Such records must be sufficient to demonstrate proper functioning of those devices to design specifications, including:

(A) the exhaust gas temperature of direct-flame incinerators or the gas temperature immediately upstream and downstream of any catalyst bed;

(B) the total amount of VOC recovered by a carbon adsorption or other solvent recovery system during a calendar month;

(C) in Victoria County, the exhaust gas VOC concentration of any carbon adsorption system, as defined in §115.10 of this title, to determine if breakthrough has occurred; and

(D) the dates and reasons for any maintenance and repair of the required control devices and the estimated quantity and duration of VOC emissions during such activities;

(4) maintain the results of any testing conducted at an affected facility in accordance with the provisions specified in §115.435(b) of this title; and

(5) maintain all records at the affected facility for at least two years and make such records available upon request to authorized representatives of the executive director, the EPA, or any local air pollution agency with jurisdiction.

(c) Beginning March 1, 2013, in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas, the owner or operator of a flexible package printing line subject to this division shall comply with the following monitoring and recordkeeping requirements.

(1) The owner or operator shall maintain records of the VOC content of all coatings, as defined in §101.1 of this title (relating to Definitions), as applied to the substrate. The composition of coatings may be determined by the methods referenced in §115.435(a) of this title or by examining the manufacturer's formulation data and the amount of dilution solvent added to adjust the viscosity of coatings prior to application to the substrate. Additionally, records of the quantity of each coating used must be maintained.

(2) For flexible package printing lines subject to the control requirements in §115.432(c) of this title (relating to Control Requirements), the owner or operator shall maintain records of the quantity and type of each coating and solvent consumed if any of the coatings, as applied, exceed the applicable VOC content or emission limits in §115.432(c) of this title. Records must be sufficient to demonstrate compliance with the applicable VOC content or emission limit on a daily weighted average.

(3) For flexible package printing lines subject to the control requirements in §115.432(a) of this title, the owner or operator shall maintain daily records of the quantity of each ink and solvent used at a facility subject to the requirements of an alternate means of control approved by the executive director in accordance with §115.433 of this title that allows the application of inks exceeding the applicable control

limits. Such records must be sufficient to demonstrate compliance with the applicable emission limitation in §115.432(a) of this title on a daily weighted average.

(4) The owner or operator shall install and maintain monitors to continuously measure and record operational parameters of any control device installed to meet applicable control requirements in §115.432(a) or (c) of this title. Such records must be sufficient to demonstrate proper functioning of those devices to design specifications, including:

(A) the exhaust gas temperature of direct-flame incinerators or gas temperature immediately upstream and downstream of any catalyst bed;

(B) the total amount of VOC recovered by a carbon adsorption or other solvent recovery system during a calendar month;

(C) the exhaust gas VOC concentration of any carbon adsorption system, as defined in §115.10 of this title, to determine if breakthrough has occurred; and

(D) the dates and reasons for any maintenance and repair of the required control devices and the estimated quantity and duration of VOC emissions during such activities.

(5) The owner or operator shall maintain the results of any testing conducted at an affected facility in accordance with the provisions specified in §115.435(a) of this title.

(6) The owner or operator shall maintain all records at the affected facility for at least two years and make such records available upon request to authorized representatives of the executive director, the EPA, or any local air pollution agency with jurisdiction.

(7) The owner or operator shall maintain on file the capture efficiency protocol submitted under §115.435(a)(8) of this title. The owner or operator shall submit all results of the test methods and capture efficiency protocols to the executive director within 60 days of the actual test date. The source owner or operator shall maintain records of the capture efficiency operating parameter values on-site for a minimum of one year. If any changes are made to capture or control equipment, the owner or operator is required to notify the executive director in writing within 30 days of these changes, and a new capture efficiency or control device destruction or removal efficiency test may be required.

§115.439. Counties and Compliance Schedules.

(a) Except as specified in subsection (c) and (d) of this section, for the owner or operator of a flexographic or rotogravure printing line subject to this division in Brazoria, Chambers, Collin, Dallas, Denton, El Paso, Fort Bend, Galveston, Gregg,

Hardin, Harris, Jefferson, Liberty, Montgomery, Nueces, Orange, Tarrant, Victoria, and Waller Counties the compliance date has already passed and the owner or operator shall continue to comply with applicable sections of this division.

(b) Except as specified in subsection (c) and (d) of this section, in Ellis, Johnson, Kaufman, Parker, and Rockwall Counties the compliance date has already passed and the owner or operator of a flexographic or rotogravure printing line subject to this division shall continue to comply with this division.

(c) The owner or operator of a flexible package printing line in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions), shall comply with the requirements in §115.432(c) and (d) and §115.436(c) of this title (relating to Control Requirements; and Monitoring and Recordkeeping Requirements) no later than March 1, 2013. Testing required by §115.435 of this title (relating to Testing Requirements) to demonstrate compliance with the requirements of §115.432(c) of this title must be completed, and the results submitted to the executive director no later than March 1, 2013.

(d) The owner or operator of a flexible package printing line in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas that becomes subject to the requirements of this division after March 1, 2013, shall comply with the requirements in this division no later than 60 days after becoming subject.