

# Texas Register

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rural community in the health profession for which the nominee will be trained to provide services; and

(12) a statement that the community agent is willing to provide funds to the rural scholar, and if the scholar is selected for a forgiveness loan, that it believes it will be able to provide at least 50% of the cost of education at the eligible institution in which the rural scholar enrolls.

(d) The advisory committee may request additional information and/or interviews from the community agent and the rural scholar as needed.

(e) The portfolio described in subsection (c) of this section must arrive at the center no later than the date adopted annually by the advisory committee under §500.29(9) of this title (relating to Outstanding Rural Scholar Advisory Committee).

(f) The advisory committee will rank scholars based on the information in the student portfolios.

#### §500.31. Designation of Outstanding Rural Scholars.

(a) The advisory committee shall select and rank the outstanding rural scholars and inform the executive committee of their selections. The executive committee shall notify the community agents of the outstanding rural scholars selected for each year and provide the community agents with a certificate of award signed by the executive director for each outstanding rural scholar on or before the date specified in the annual timetable adopted by the advisory committee.

(b) By the date specified in the annual timetable adopted by the advisory committee, the community agent shall send the center proof of the public recognition provided each outstanding rural scholar. Such recognition must include an announcement in local newspapers of the outstanding rural scholar's selection and may include public recognition of the outstanding rural scholar at civic gatherings and school assemblies.

(c) In addition to subsection (b) of this section, the community agent of each top ranked outstanding rural scholar who may be eligible for a forgiveness loan will be asked to provide the executive committee by the date specified in the annual timetable adopted by the advisory committee:

(1) the name of the eligible institution the scholar will attend;

(2) the one-year cost of education for the scholar; and

(3) a certified statement of the community agent's commitment to provide 50% of the cost of education if their nominee receives a forgiveness loan.

(d) By the date specified in the annual timetable adopted by the advisory

committee, the executive committee shall provide institutions of higher education with lists of Outstanding Rural Scholars.

§500.33. *Priorities for Application Processing.* Applications received by the executive committee on or before the date specified in the annual timetable adopted by the advisory committee will be processed in order based upon the rank assigned the outstanding rural scholar by the advisory committee. Applications received after all appropriated funds are committed and/or after the date specified in the annual timetable adopted by the advisory committee shall be processed only if funds from loan cancellations and repayments become available during the period for which the loan is needed. Renewal applications have priority over new applications.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 9, 1991.

TRD-9112518

Bryan P. Sperry  
Executive Director  
Center for Rural Health  
Initiatives

Effective date: November 1, 1991

Proposal publication date: July 2, 1991

For further information, please call: (512) 479-8893

## TITLE 31. NATURAL RESOURCES AND CONSERVATION

### Part III. Texas Air Control Board

#### Chapter 111. Control of Air Pollution from Visible Emissions and Particulate Matter

##### Abrasive Blasting of Water Storage Tanks Performed by Portable Operations

###### • 31 TAC §§111.131, 111.133, 11.135, 111.137, 111.139

The Texas Air Control Board (TACB) adopts amendments to §§111.131, 111.133, 111.135, 111.137, and 111.139, with changes to the proposed text as published in the April 16, 1991, issue of the *Texas Register* (16 TexReg 2214), concerning Abrasive Blasting of Water Storage Tanks Performed by Portable Operations.

The adopted new §111.131, concerning definitions, defines eight terms as they are used in regard to abrasive blasting. The adopted new §111.133, concerning testing requirements, outlines the test methods required before abrasive blasting is performed on any water storage tank. The adopted new §111.135, concerning control requirements for sur-

faces with coatings containing lead, describes the notification procedures and allowable methods that must be used during abrasive blasting operations if the coating contains 1.0% or more of lead. The adopted new §111.137, concerning control requirements for surfaces with coatings containing less than 1.0% lead, lists allowable methods that may be used during abrasive blasting operations on unleaded surfaces. The adopted new §111.139, concerning exemptions, lists the abrasive operations that are exempt from testing and control requirements.

Public hearings were held in Austin on May 21, 1991, and in Arlington on June 6, 1991. Testimony was received from 41 commenters during the comment period which ended June 7, 1991.

The following discussion initially addresses the more general comments, and then addresses the comments which deal with specific provisions of the regulation.

Two commenters, Landmark Structures Inc. (Landmark), and Neptune-Wilkinson Associates, Inc. questioned whether the intent of the rules was to limit the exposure to lead or to limit the exposure to nuisance conditions. They noted that a distinction needs to be made between the serious problem of lead exposure and the less serious problem of short-term exposure to dust which should fall under nuisance controls. A private citizen suggested that TACB is overreacting to the Cedar Park incident.

The concern about lead contamination resulting from abrasive blasting of water storage tanks was brought to the public's attention when TACB responded to a nuisance complaint, which occurred in Cedar Park, Texas in June of 1990, about an abrasive blasting job being performed on the town's water tank. Samples taken from the base of the tank confirmed that the paint contained lead. Additional samples taken in the vicinity of the tank, including adjacent residences, indicated lead levels from six pounds per million (ppm) to 11,000 ppm. The highest levels were 22 times the alert level used by United States Environmental Protection Agency (EPA) to dictate when cleanup is required. The cost of the clean up of the residential area exceeded \$1 million. In addition, lawsuits were filed in the courts due to the potential health risks resulting from lead contamination. TACB has been contacted by several municipalities requesting regulations controlling abrasive blasting. The adopted regulations limit the exposure to lead and inhalable particulate matter produced from abrasive blasting.

The Texas Water Commission (TWC) and an individual felt that the cutoff limit of 1.0% (10,000 ppm) was too high. TWC suggested a limit of 200 ppm and the private citizen suggested 0.5%. Exxon was interested in how the limit of 1.0% was derived.

Based upon the data received from the Cedar Park incident, the staff performed extensive modeling tests and determined that a limit of 1.0% would produce an average level of soil contamination equal to 420 ppm which is just under the 500 ppm EPA alert level. Additionally, there are very few leaded paints with levels below 1.0%. Since the 1.0% cutoff results in a limit which is below the EPA alert level and since leaded paints seldom contain less than 1.0% lead, the staff did not believe

that reducing the cutoff limit further would serve a useful purpose.

Several commenters indicated that the TACB staff did not research all aspects of the issue well enough. One commenter, (Tank Sandblasting & Painting, Inc.), suggested that the TACB staff obtain the advice of personnel who actually perform the blasting before writing any of the regulations. Several commenters (Archaie, Inc., Texas Rural Water Association (TRWA), Allied Tank Services (Allied), and an individual) requested that the Texas Department of Health (TDH) and TWC be contacted and consulted prior to implementing the new regulations. Another commenter, Travis Industrial Painters (Travis), commented that the staff did not show an interest in viewing demonstrations of different techniques, and an individual claimed that arrangements had been made for the staff to view wet blasting and hydroblasting operations, and that the staff did not take the time to observe these demonstrations. The individual stated TACB should spend more time studying the learning experiences of other states before implementing new regulations. Vickers Industrial Coatings (Vickers) suggested that there are other, more reasonable, methods of abrasive blasting being employed by other states, and that the staff should have considered some of those.

The TACB staff that were involved in investigating this problem included members from Health Effects, Permits, Modeling, Sampling and Analysis, Legal, and Regulation Development. Because of the complexity of the issue, the staff performed extensive research and discussed in detail a wide range of issues with engineers, contractors, health officials, and other experts from the industry, and relied heavily upon their judgments. TWC also supplied formal comments during the hearing process. As part of the staff's research, they did observe demonstrations of hydro-blasting and dry abrasive blasting. The research of the staff indicates that the adoptions are consistent with most states that have adopted abrasive blasting rules. Particularly noteworthy was the February 1991 issue of *Journal of Protective Coatings & Linings* (JPCL), which reviewed the abrasive blasting regulations of all 50 states and the District of Columbia. While many states were shown not to have any regulations specifically governing abrasive blasting, existing rules were examined in considerable detail. The methods included in the adopted regulations were chosen from those most commonly used by other states and considered the most environmentally sound.

The City of Wichita Falls (Wichita Falls) raised the concern that other types of paint removal had not been considered and, therefore, the cities did not have all of the options available to them to make the most cost-effective decision regarding abrasive blasting. Pentek, Inc. (Pentek) requested that their technology of vacuum assisted power tool cleaning be specifically listed as an approved method.

The regulation has been designed to allow alternative methods that are used infrequently or have not yet been developed. The staff is aware of nonabrasive methods of paint removal, but the adopted rules only address abrasive blasting which is more likely to result

in particulate air pollution. Pentek's technology is a nonabrasive blasting method that is not excluded by the adopted regulations.

Several commenters asserted that the rules should contain additional requirements. TWC and an individual requested that the regulations specify that waste be disposed of in accordance with all applicable regulations or include provisions on how to dispose of the waste generated by the operation. TWC also recommended that the rules include requirements for the use of a ground cover. An individual stated that §111.135(c) and §111.137(b) should specify that all blasting projects be regulated for nuisance dust. Several commenters, Coating Society of Houston Area (Coating Society), Vickers and an individual, expressed concern over the absence of rule language concerning the need to collect contaminated water which would accumulate as a result of wet blasting or hydroblasting. The individual stated that the regulation should prohibit any blasting that could cause a violation of the federal lead standard at the property line. The Harris County Pollution Control Department and the Galveston County Health Department suggested that the notification requirement in §111.135(b) should include notifying affected local governments concerning blasting activities. The Galveston County Health Department suggested adding similar language for unleaded surfaces in §111.137.

The use of ground covers, the disposal of the waste generated during the blasting, and the control of the water resulting from wet blasting or hydroblasting do not fall under the TACB's jurisdiction, and regulating another agency's rules is not possible.

Language regarding the control of nuisance dust and the necessity of complying with all other applicable laws, ordinances, and regulations is already contained in §111.135(a) and §111.137(a). The staff also believes that the adopted rules will prevent the violation of standards because the techniques specified in the regulation are proven methods of minimizing the release of lead and inhalable particulates. The staff believes that the comment regarding notification of affected local authorities concerning blasting activities has merit in cases where lead is involved, and added the appropriate language to §111.135(b). However, in cases covered under §111.137, where the lead content is less than 1.0%, the staff believes the requirement for local notification should be handled by a local ordinance or similar means.

One commenter, (Travis), was not convinced that shrouding could contain the emissions as effectively as many experts claim.

As stated earlier the staff has performed extensive research and discussed in detail the complexities of this issue, including the use and effectiveness of a shroud. The staff relies heavily upon the judgments of these experts. Therefore, the staff is convinced that the adopted requirements concerning the use of a shroud provide the best means of protection available and are far more effective than not requiring a shroud at all.

An individual requested that the new regulations allow for partial shrouding downwind of the blasting instead of requiring total enclosure.

The staff believed that this suggestion would not provide adequate protection of the envi-

ronment from lead particulate, because it does not account for wind shifts or the swirling effects of wind caused by towers.

An individual expressed concern over the economic burden the new regulations would impose if TDH were to require painting of municipal water towers for purely aesthetic reasons.

Although the staff thinks it is highly unlikely that TDH would impose such requirements, TACB cannot be responsible for the TDH's actions. Moreover, painting can be done as often as desired as long as no abrasive blasting is performed.

A commenter representing Exxon expressed concern that not enough factors were being considered regarding the exposure of the worker. Specifically, he was concerned about the working environment which would be created by the shroud.

The safety of the worker falls under the jurisdiction of TDH and Occupational Safety and Health Administration. Furthermore, the language in §111.135(a) and §111.137(a) will alert the operators to the fact that other regulations exist.

The City of Denton (Denton) had several comments concerning alternative ways to minimize, or avoid dealing with, the financial aspects of the adopted regulations. Specifically mentioned were: they are more willing to pay the \$5,000-\$10,000 in clean-up costs than the \$60,000 estimated for shrouding, they are willing to pay for heating/cooling bills to keep houses closed up during blasting and they are willing to pay for the cleaning of cars in affected communities. They also suggested that most citizens would be more willing to pay for the cost of clean-up than face higher water bills. The city also expressed concern that the use of unleaded paints would require repainting to be done every 7-10 years instead of the once every 20 years, which is now the average with leaded paints. They indicated that this would be difficult to finance with the current capital finance plans. Denton also insisted there are enough controls in place on the local level that the involvement of the state in this issue is not warranted.

As mentioned previously, the cost to clean up Cedar Park after the incident was well over \$1 million, not including the pending civil lawsuits filed by area residents. The Cedar Park incident demonstrated that clean up of the smaller particles was exceedingly difficult to accomplish. Furthermore, due to the data supporting the adverse health affects of lead, many of the city's ideas were not viable alternatives if protecting the health, safety, and general welfare of the community is a priority. Another problem of these alternatives is the ability of TACB to enforce them. In response to the comment concerning the increased requirement for painting using unleaded paints, in light of the overwhelming evidence concerning the adverse health effects due to the toxicity of lead, it is more environmentally sound and in the best interests of the population of Texas to use unleaded paint. As for the comment regarding the necessity of the state's involvement, TACB is reacting in direct response to requests from municipalities to regulate abrasive blasting to prevent the recurrence of a similar incident.

Denton believed that the cost to implement and enforce these regulations will cost TACB

an extra \$12,000, which could only be recovered through increased taxes or fees.

The staff intentionally kept the regulations simple so as to be able to use current TACB resources to implement and enforce them. In concert with that thought, enforcement costs will be considerably lower, if industry complies with the new regulations, because there will be less pollutants released and, therefore, less citizen complaints to investigate.

Two commenters, Tank Sandblasting & Painting, Inc. and Travis, raised concerns regarding liability insurance involved with abrasive blasting, where shrouding and the release of pollutants are involved.

TACB is charged with protecting air quality and believes that blasting lead in an uncontrolled manner will result in even higher liability rates due to the increased number of lawsuits which would result. So, in actuality, the regulation will reduce the liability by reducing the amount of pollutants released.

One commenter, representing the TRWA and Allied, questioned whether or not TACB knew what background levels of lead existed prior to Cedar Park or in other cases, since no testing was done in the area prior to the blasting. And if TACB was able to positively determine that lead levels increased, how would they be able to say it was due to the abrasive blasting and not to some other past event?

Reference literature detailing expected background levels and laboratory results from samples taken at Cedar Park gave TACB a very good indication of what lead levels to expect. Furthermore, the high lead levels found at Cedar Park were found in the presence of paint chips and spent abrasive material.

The Coating Society commented that the monitoring of emissions outside of a containment would be easier with dry blasting than it would be with wet blasting.

The adopted regulations do not require monitoring outside of a containment area.

Several commenters (Wichita Falls, Travis, and an individual) expressed concern over the safety factors involved with hanging a shroud. One commenter stated that hanging a shroud on an empty, elevated tank might create a wind load, which could cause the tank to topple. Another mentioned the fact that older tanks may not be designed to withstand the weight of a shroud. There was one general comment expressing concern with the safety hazards of hanging a shroud from a 150-foot water tower.

The wind load is a factor of wind speed and of the shroud's area, and contractors should know at what wind speed the shroud be lowered to prevent exceeding the wind load. If the wind load is unknown, an engineering study should be conducted. In general, the concern of the weight of the shroud was slight since the tanks are designed to withstand the weight of the water they hold.

An individual expressed concern that requiring a shroud would prevent the contractor from working inside the tank at the same time he is working on the outside, resulting in an extended job time and, therefore, increased costs.

The TACB staff observed a demonstration of shrouded blasting at a job site in Lakeway. During the demonstration, they observed that the contractor had adequate access to the inside of the tank while the shroud was up and, in fact, was able to perform work on the inside as work on the outside progressed. Other sources also indicate that shrouding does not hinder access to the tank, outside or inside.

Several commenters (Coating Society, Travis, Vickers, and an individual) expressed concern over the technique of vacuum blasting. The comments concerned the efficiency of capturing high velocity particles once they hit the tower, and the concern that a high-efficiency particulate filter should be required for the vacuum blasting device.

Once the particles hit the tank's surface, they are no longer high velocity particles and the staff has a great deal of information from marketers and contractors who have used vacuum blasting to ensure the efficiency of capturing these particles. The staff does agree that the vacuum blasting machine should be equipped with a high-efficiency particulate filter and changed the definition of vacuum blasting to accommodate this clarification.

Several commenters from both the regulated community and the general public (Neptune-Wilkinson Associates, Inc., Landmark, Vickers, TRWA, Allied, and Denton) expressed a great deal of concern that the adopted amendments do not regulate the abrasive blasting of the exterior of all metal structures. Several stated that singling out the water tank industry is discriminatory and will produce an economical burden on that part of the industry which will not be experienced by other parts.

The staff wholeheartedly agrees with the need to regulate other types of abrasive blasting activities. TACB is in the process of obtaining soil samples in residential and industrial areas surrounding facilities where abrasive blasting has occurred. TACB is also soliciting the oil and gas industry for additional data concerning the abrasive blasting of their structures. Depending on the results of the sampling and the additional data which TACB will receive, it is the intention of TACB to return to hearing with more inclusive language in the near future.

An individual suggested that the definition of private residence in §111.131 be clarified.

The definition used is language that has been used historically in the TACB's standard exemption list.

Several commenters (Exxon, OxyChem, Landmark, and an individual) expressed some confusion over the definition of a shroud. One commenter requested that the definition specify that leakage of spent material between the ground and the shroud be prohibited. Another commenter requested the change from "amount of area" to "percent of area..." One commenter requested clarification on how impermeable the shroud should be, what size particles are we shrouding for, and by what test method should impermeability be checked. A commenter requested clarification on how high up the shroud should be, and one commenter stated that, as written, the definition would preclude the use of clear plastic sheeting.

The staff feels that the definition, as written, is clear enough concerning the requirements of containing spent material. They did agree that the word "amount" be changed to "percent" to remain consistent with the rest of the definition. The intent of the staff was not to preclude the use of clear plastic sheeting, so the staff changed the words "impermeable to particles and sunlight" to "impermeable to particles or sunlight" To clarify the comment concerning the height of the shroud, the staff added to the language "the shroud shall have overlapping seams to prevent leakage of particles, shall extend a minimum of 15 feet above the area being blasted, and shall have a shade factor of 95%." The staff decided that setting a control factor of 95% of particles of 100 gnt or greater would clarify the comments concerning impermeability, size of particles, and test methods since this would standardize the shroud.

An individual felt that the definition of public area was vague and needed to read "public would" instead of "public could." His argument was that mere access to an area is insufficient to classify the area as a public area.

The staff disagreed with this argument and felt that mere access is sufficient to warrant the controls suggested by the recommended regulation. The staff feels that the definition is sufficiently clear as worded.

Several commenters from the regulated community (OxyChem, Texas Chemical Council, Ethyl Corporation, Texas Eastman Company, DuPont, Exxon, and Houston Lighting & Power) commented that the rule language is ambiguous and that the definition of water storage tank should refer to those tanks specifically storing water for public or municipal water supplies.

The staff agreed that since the intent of this regulation is to control abrasive blasting of municipal water tanks and has changed the regulation to specify "potable" water tanks is desirable.

One commenter (Houston Lighting & Power) suggested the definition of water storage tank should specify a minimum height of 50 feet above the ground. They commented that structures which are not elevated would not likely cause an impact on surrounding areas during abrasive blasting operations.

The staff disagreed with this comment and feels the adopted changes to the definition are sufficient to achieve the desired controls.

A representative of Exxon questioned the methods used in §11.333 to accurately determine if 1.0% of lead exists and if this sampling takes into account that some areas of a tank's surface may contain less lead by weight than other areas.

The EPA test procedures specified in §11.133(a) require that samples be collected in accordance with a detailed sampling plan explained in Chapter 9 of the Environmental Protection Agency SW-846, Test Methods for Evaluating Solid Waste. This testing plan ensures a representative sample and an accurate and precise result.

Concerning §11.135, Denton believes that there is not enough evidence documented, concerning the adverse health effects of lead, to justify the controls imposed by these regulations.

It is well documented, in scientific literature, that lead is a known toxic and is especially hazardous to children (causing learning disabilities) and to pregnant women (causing damage to the central nervous system of the fetus). Furthermore, lead is detrimental to all animals and is very persistent in the environment. Once deposited, it does not break down to harmless components but maintains its toxicity in the soil for decades.

An individual commented that other heavy metal-based paints should be controlled as well.

The staff agrees that other heavy metals may also need to be controlled, however, lead is by far the largest constituent by weight in paint and the toxic effects of lead are well known and documented. Consequently, lead is the main concern at this time. The staff, nevertheless, does intend to revisit this issue at a later date.

Several commenters (Lakeway MUD, Landmark, Archaie, Vickers, Trinity, Coating Society, Houston Lighting & Power, and several individuals) stated that dry abrasive blasting of surfaces containing leaded paints should be allowed. Lakeway MUD submitted evidence of samples taken after shrouded dry blasting was performed, which, they contend, is absolute proof of the effectiveness of a shroud. Another commenter stated that TACB did not have enough evidence to conclusively state that use of a shroud is not safe or effective.

The 500-foot distance requirement was chosen for two reasons it is consistent with the distance requirement in TACB's Standard Exemption 102, concerning abrasive blasting from a permanent facility; and modeling of the proposed dry abrasive blasting within a shroud verified this distance to be an accurate estimate. Therefore, based on this data and the sampling results submitted by Lakeway MUD (collected from a dry abrasive blasting job where a shroud was used), the staff has added to the rule that shrouded dry abrasive blasting be allowed, provided there are no private residences or public areas within a distance of 500 feet of the water storage tank.

Several commenters (Neptune-Wilkinson Associates, Inc., Coating Society, Archaie, and Travis) commented that wet abrasive blasting would create more problems than dry abrasive blasting. They specifically mentioned the following concerns: wet abrasive blasting leads to a greater risk of water runoff and infiltration into the ground; wet waste is more difficult to control than dry waste; wet blasting would cause the tanks to rust quicker, requiring the use of inhibitors to prevent this which would compromise the adhering capabilities of the tanks' surface; and hydroblasting does not provide a surface adequate for coating adherence.

The staff investigation showed that the use of wet abrasive blasting and hydroblasting are being performed effectively throughout the industry. Wet abrasive blasting and hydroblasting minimize airborne particulate matter resulting from paint removal operations and are necessary to control lead contamination of surrounding properties. Because of the added problems inherent in wet blasting methods, the staff recommends that shrouded dry abrasive blasting be al-

lowed, provided there are no private residences or public areas within a distance of 500 feet of the water storage tank.

Several commenters (Landmark, Archaie, City of San Antonio Water Board, Vickers, TRWA, Allied, Travis, Exxon, Texas Sandblasting and Painting, Inc., and several individuals) expressed concern over the staff's estimates of cost and questioned the actual economic effects. One commenter stated that the costs would be so high that many tank owners would postpone necessary painting, and another stated that the costs were so high that no one would be able to economically comply with the adopted regulations. Another commenter stated that the requirement for wet blasting or hydroblasting would produce rust, and the staff's cost estimates did not include removal of the rust. One commenter claimed that the cost of the new regulations would result in only the insides of tanks being repainted and not the outside. Another commenter stated that the higher costs would force many companies out of business.

The staff believes that by allowing dry abrasive blasting within a shroud many of these arguments are no longer valid. Costs are likely to be higher when using a shroud; however, the use of a shroud should prevent the costs of clean up and litigation brought on by citizen suits. Shrouding is, therefore, believed to be an ultimate cost savings, as well as an environmentally responsible practice.

An individual expressed concern that the platform where the workers stand would become unsafe to stand on with the added weight of wet abrasive debris.

The adoption to allow dry blasting in a shroud eliminates this point as an issue.

Concerning §111.137, several commenters (Wichita Falls, Archaie, Neptune-Wilkinson, and Landmark) stated that the requirements for unleaded storage tanks are too stringent. Neptune-Wilkinson felt that tanks having paint which contained no lead should be excluded from the adopted regulations. Landmark felt that if the paint on the tank's surface contained less than 1.0% lead by weight, it should be exempt from regulation.

The staff has received a number of complaints regarding blasting in residential areas and concluded that the regulations adopted for paints containing less than 1.0% lead are the best way to minimize nuisance situations which could arise if no controls were imposed. It is also important to note that control of particulate matter as well as control of lead particulate emission is required to protect the health of the citizens in the case of abrasive blasting. Furthermore, staff research indicated that this is a common regulation in many other states.

Concerning §111.139, two commenters (Harris County Pollution Control Department, and an individual), opposed allowing any exemptions, or, in the case where an exemption is required, that the operator should maintain a daily record of abrasive usage.

The adopted exemption is designed for small activities, which experience has shown, would be unlikely to create nuisance conditions or adverse health effects. Research also indicates that most blasting operations propel at least 500 pounds per hour. Thus, relatively

few operations would qualify for the exemption.

A representative from Vickers stated that there should be an allowance for a waiver if the residents within the area of control are few and have given their consent for the work to continue. Specifically mentioned was a case involving one residence, upwind of the job.

The staff has grave concerns over allowing a blanket waiver for such instances. This would not protect future landowners from inheriting the residual lead left on the property. In addition, the scenario does not account for wind shifts or the swirling effect of the wind around the tank. Nevertheless, TACB has a standard procedure for requesting a variance from any of its regulations, through an appeal process directly to TACB.

The amendments are adopted under the Texas Clean Air Act (TCAA), §382.017, Texas Health and Safety Code, Annotated (Vernon 1990), which provides TACB with the authority to adopt rules consistent with the policy and purpose of the TCAA.

**§111.131. Definitions.** The following words and terms, when used in this undesignated head, shall have the following meanings, unless the context indicates otherwise.

**Abrasive blasting**—The operation of cleaning or preparing a surface by forcibly propelling a stream of abrasive material against the surface.

**Hydroblasting**—Any abrasive blasting using high pressure liquid as the propelling force or as the active cleaning agent.

**Private residence**—A residence not occupied or used solely by the owner of the property upon which the water storage tank to be blasted is located.

**Public area**—An outdoor area where it may be reasonably anticipated that the public could congregate for more than short-term periods, including, but not limited to, schools, day care centers, convalescent centers, parks, and recreation areas.

**Shroud**—A device which is designed to enclose or surround the area being blasted to minimize the atmospheric entrainment of fine particulates and direct that material to a confined area for disposal. The shroud shall have overlapping seams to prevent leakage of particulates, shall extend a minimum of 15 feet above the area being blasted, and shall have a shade factor of 95% or a control factor of 95% of particles 100 grit or greater. A shade factor is defined as the percent of area impermeable to particles or sunlight.

**Vacuum blasting**—Any abrasive blasting in which the spent abrasive, surface material, and dust resulting from blasting are immediately collected by a vacuum device, equipped with a high efficiency particulate filter.

**Water storage tank**—Any above-ground vessel designed and constructed for the purpose of storing potable water.

**Wet abrasive blasting**—Any abrasive blasting using compressed air as the propel-

ling force, which mixes with water to minimize emissions.

#### §111.133. Testing Requirements.

(a) Before abrasive blasting is performed on any previously-coated water storage tank, the owner or operator of the tank must determine if lead is present in the existing protective coating by applying the following test methods from the United States Environmental Protection Agency SW-846, Test Methods for Evaluating Solid Waste:

(1) Method 3050, Acid Digestion of Sediments, Sludges, and soils; and

(2) Method 6010, Inductively Coupled Plasma Atomic Emission Spectroscopy, or Method 7000, Atomic Absorption Methods. Lead concentrations should be reported in micrograms per gram (ug/gm); or

(3) An alternate method approved in advance by the Executive Director or a designated representative of the Texas Air Control Board (TACB).

(b) Results of the test(s) required in subsection (a) of this section must be available to the TACB staff or staff from governmental entities having jurisdiction at the site for the duration of the abrasive blasting project. The results must include the name of the testing facility and a person responsible for the accuracy of the test results.

(c) Successive coatings need not be retested following initial testing, provided the owner or operator of the water storage tank can furnish verifiable documentation that the lead level of the post-testing coatings is less than 1.0% (10,000 ug/gm) lead by weight.

#### §111.135. Control Requirements For Surfaces with Coatings Containing Lead.

(a) The authority to conduct abrasive blasting activities under this section does not exempt or excuse any person from responsibility for the consequences, damages, or injuries resulting from the abrasive cleaning. The authority to conduct such activities under this regulation also does not exempt or excuse anyone from complying with all other applicable laws or ordinances, regulations, and orders of governmental entities having jurisdiction, even though the abrasive blasting is otherwise conducted in compliance with this regulation. The owner or operator of the water storage tank being blasted must control emissions from abrasive blasting in a manner that does not cause nuisance conditions, as defined in §101.4 of this title (relating to Nuisance).

(b) For water storage tanks with lead concentrations of 1.0% (10,000 ug/gm) or greater in the coating, the owner or operator of the tank shall notify the appropriate TACB regional office and any local authorities having jurisdiction over abrasive blast-

ing activities of the blasting in writing at least 10, but not more than 30, working days prior to the date scheduled for the beginning of blasting operations. The notification must include:

- (1) the location of the tank;
- (2) the name of the abrasive blasting company;
- (3) the weight percent of lead in the coating;
- (4) the control methods to be used;
- (5) the expected hours of operation and scheduled start and finish dates.

(c) Emissions from abrasive blasting of water storage tanks which have lead in concentrations of 1.0% (10,000 ug/gm) or greater by weight in the coating must be controlled by one of the following methods:

- (1) vacuum blasting;
- (2) shrouded wet abrasive blasting;
- (3) shrouded dry abrasive blasting, provided there are no private residences or public areas within 500 feet of the water storage tank;
- (4) shrouded hydroblasting; or
- (5) equivalent method approved in advance by the executive director or a designated representative of TACB.

#### §111.137. Control Requirements For Surfaces with Coatings Containing Less Than One Percent Lead.

(a) The authority to conduct abrasive blasting activities under this section does not exempt or excuse any person from responsibility for the consequences, damages, or injuries resulting from the abrasive cleaning. The authority to conduct such activities under this regulation also does not exempt or excuse anyone from complying with all other applicable laws or ordinances, regulations, and orders of governmental entities having jurisdiction, even though the abrasive blasting is otherwise conducted in compliance with this regulation. The owner or operator of the water storage tank being blasted must control emissions from abrasive blasting in a manner that does not cause nuisance conditions, as defined in §101.4 of this title (relating to Nuisance).

(b) When there are private residences or public areas within a distance of 500 feet of the water storage tank or 10 times the height of the tank, whichever is greater, the owner or operator of the tank must control emissions from abrasive blasting by one of the following methods:

- (1) vacuum blasting;
- (2) shrouded wet abrasive blast-

(3) shrouded dry blasting;

(4) shrouded hydroblasting; or

(5) equivalent method approved in advance by the executive director or a designated representative of TACB.

(c) When there are no private residences or public areas within a distance of 500 feet of the water storage tank or 10 times the height of the tank, whichever is greater, no additional controls are required beyond those stipulated in subsection (a) of this section.

#### §111.139. Exemptions.

(a) Interior abrasive blasting of water storage tanks is exempt from §111.133 of this title (relating to Testing Requirements); §111.135 of this title (relating to Control Requirements For Surfaces with Coatings Containing Lead); and §111.137 of this title (relating to Control Requirements For Surfaces with Coatings Containing Less Than One Percent Lead), if no visible emissions to the atmosphere result from such cleaning.

(b) Any abrasive blasting process which propels abrasives at a rate of less than 500 pounds per day is exempt from §§111.133, 111.135, and 111.137.

(c) Any alternate control method approved in advance by the executive director or a designated representative of the TACB may be exempted from §111.135 and §111.137. An exemption may be revoked by TACB at any time if the blasting project is causing nuisance conditions or a violation of any air quality standard.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## Chapter 115. Control of Air Pollution from Volatile Organic Compounds

### Subchapter A. Definitions Definitions

#### • 31 TAC §115.10

The Texas Air Control Board (TACB) adopts an amendment to §115.10, concerning definitions, without changes to the proposed text as published in the July 2, 1991, issue of the *Texas Register* (16 TexReg 3676). The amendment satisfies a requirement by the

United States Environmental Protection Agency (EPA) to correct certain regulation deficiencies and inconsistencies to ensure compliance with applicable requirements for control and collection systems of volatile organic compounds.

The amendment to §115.10 adds definitions for capture efficiency, capture system, carbon adsorber, carbon adsorption system, control device, and control system. These new definitions will ensure consistency with terminology now used by EPA.

A public hearing was held on July 22, 1991, in Austin. No oral testimony was presented. Written testimony was received from two commenters during the comment period which was extended from July 23 until July 30, 1991.

EPA approved the proposed definitions and suggested that additional definitions may be needed for clarification. The staff is unable to add definitions at this time without conducting an additional public hearing; however, such definitions do not appear to be critical to understanding the concepts at issue in the proposal.

One individual wished to see the definition of capture efficiency changed to read that capture efficiency would be the difference between the percentage of volatile organic compounds entering both the capture system and control device and that leaving the exit vent. Since the proposed definition was made in response to an EPA requirement and contains the exact wording used by EPA, revising the definition could jeopardize EPA approval.

The amendments are adopted under the Texas Clean Air Act (TCAA), §382.017, Texas Health and Safety Code, Annotated (Vernon 1990), which provides TACB with the authority to adopt rules consistent with the policy and purposes of the TCAA.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 10, 1991.

TRD-9112621 Lane Hartscock  
Deputy Director, Air Quality  
Planning  
Texas Air Control Board

Effective date: November 1, 1991

Proposal publication date: July 2, 1991

For further information, please call: (512) 908-1451

## Subchapter B. General Volatile Organic Compound Sources

### Vent Gas Control

#### • 31 TAC §115.126, §115.129

The Texas Air Control Board (TACB) adopts amendments to §115.126, concerning recordkeeping requirements and §115.129, concerning counties and compliance schedules, without changes to the proposed text as published in the July 2, 1991, issue of the *Texas Register* (16 TexReg 3676). The amendments satisfy a requirement by the United States Environmental Protection

Agency to correct certain regulation deficiencies and inconsistencies to ensure compliance with applicable requirements for control and collection systems of volatile organic compounds.

The amendment to §115.126 adds an additional reference to provide consistency in maintaining temperature, maintenance, and testing records for facilities required to comply with §115.121(a)(3). The amendment to §115.129 identifies a compliance date for the additional recordkeeping requirements.

A public hearing was held on July 22, 1991, in Austin. No oral testimony was received. One written comment was received during the comment period which was extended from July 23 until July 30, 1991.

The individual remarked that company records should be available for public review, analysis, and assessment and that the records should be kept at some public place for public inspection. Much of the required recordkeeping may involve confidential company information. TACB rules are developed to prevent the misuse of proprietary information while allowing access to data which can be used to determine actual operating parameters. This individual also commented that §115.126(1) could allow a company to use fraudulent data instead of actual inspection data to determine whether control equipment was functioning properly. The staff can not discount that a possibility exists for fraudulent or incorrect data being recorded. However, the staff believes the majority of recordkeeping to be accurate because it is in the facility's best interest to ensure proper operation of control devices for numerous safety, economic, and environmental reasons. TACB also conducts periodic unannounced inspections as well as scheduled formal inspections to ensure company compliance with applicable rules and regulations.

The amendments are adopted under the Texas Clean Air Act (TCAA), §382.017, Texas Health and Safety Code, Annotated (Vernon 1990), which provides TACB with the authority to adopt rules consistent with the policy and purposes of the TCAA.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 10, 1991.

TRD-9112600 Lane Hartscock  
Deputy Director, Air Quality  
Planning  
Texas Air Control Board

Effective date: November 1, 1991

Proposal publication date: July 2, 1991

For further information, please call: (512) 908-1451

### Water Separation

#### • 31 TAC §115.136, §115.139

The Texas Air Control Board (TACB) adopts amendments to §115.136, concerning recordkeeping requirements and §115.139, concerning counties and compliance schedules, without changes to the proposed text as published in the July 2, 1991, issue of the

*Texas Register* (16 TexReg 3676). The amendments satisfy a requirement by the United States Environmental Protection Agency to correct certain regulation deficiencies and inconsistencies to ensure compliance with applicable requirements for control and collection systems of volatile organic compounds.

The amendment to §115.136 adds a requirement to continuously monitor the exhaust gas temperature immediately downstream of a direct-flame incinerator. The amendment to §115.139 identifies a compliance date for the additional monitoring requirement.

A public hearing was held on July 22, 1991, in Austin. No oral or written testimony was received on this undesignated head during the comment period which was extended from July 23 until July 30, 1991.

The amendments are adopted under the Texas Clean Air Act (TCAA), §382.017, Texas Health and Safety Code, Annotated (Vernon 1990), which provides TACB with the authority to adopt rules consistent with the policy and purposes of the TCAA.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 10, 1991.

TRD-9112623 Lane Hartscock  
Deputy Director, Air Quality  
Planning  
Texas Air Control Board

Effective date: November 1, 1991

Proposal publication date: July 2, 1991

For further information, please call: (512) 908-1451

## Subchapter C. Volatile Organic Compound Marketing Operations

### Filling of Gasoline Storage Vessels (State I) For Motor Vehicle Fuel Dispensing Facilities

#### • 31 TAC §115.224, §115.229

The Texas Air Control Board (TACB) adopts amendments to §115.224, concerning inspection requirements and §115.229, concerning counties and compliance schedules, without changes to the proposed text as published in the July 2, 1991, issue of the *Texas Register* (16 TexReg 3676). The amendments satisfy a requirement by the United States Environmental Protection Agency to correct certain regulation deficiencies and inconsistencies to ensure compliance with applicable requirements for control and collection systems of volatile organic compounds.

The amendment to §115.224 adds Brazoria and Galveston Counties to the requirement that gasoline tank-trucks be annually inspected for leaks as evidenced by a prominently displayed certification. The amendment to §115.229 identifies a compliance date for the additional inspection requirement.

A public hearing was held on July 22, 1991, in Austin. No oral or written testimony was received on this undesignated head during the comment period which was extended from July 23 until July 30, 1991.

The amendments are adopted under the Texas Clean Air Act (TCAA), §382.017, Texas Health and Safety Code, Annotated (Vernon 1990), which provides TACB with the authority to adopt rules consistent with the policy and purposes of the TCAA.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 10, 1991.

TRD-9112624 Lane Hartsock  
Deputy Director, Air Quality  
Planning  
Texas Air Control Board

Effective date: November 1, 1991

Proposal publication date: July 2, 1991

For further information, please call: (512) 908-1451

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Subchapter E. Solvent-Using  
Processes

Surface Coating Processes

- 31 TAC §§115.422, 115.423, 115.425, 115.426, 115.429

The Texas Air Control Board (TACB) adopts amendments to §115.422, concerning control requirements; §115.423, concerning alternate control requirements; §115.425, concerning testing requirements; §115.426, concerning recordkeeping requirements; and §115.429, concerning counties and compliance schedules. Sections 115.422, 115.425, and 115.426 are adopted with changes to the proposed text as published in the July 2, 1991, issue of the *Texas Register* (16 TexReg 3676). Section 115.423 and §115.429 are adopted without changes and will not be republished. The amendments sat-

isfy a requirement by the United States Environmental Protection Agency (EPA) to correct certain regulation deficiencies and inconsistencies to ensure compliance with applicable requirements for control and collection systems of volatile organic compounds.

The amendment to §115.422 changes the wording to clarify the intent of the "once in, always in" philosophy adopted during the last change and clarify the reference to counties and compliance schedules. The amendment to §115.423 changes the reference paragraph for capture efficiency testing protocol. The amendment to §115.425 adds additional requirements for capture efficiency compliance testing to be consistent with EPA guidance. The amendment to §115.426 adds a paragraph to explain the additional recordkeeping required by new capture efficiency testing. The amendment to §115.429 adds a new compliance date for new requirements.

A public hearing was held on July 22, 1991, in Austin. No oral testimony was received. Only EPA submitted written testimony during the comment period which was extended from July 23 until July 30, 1991.

In general, EPA stated that additional provisions were necessary for consistency with EPA's model capture efficiency rule. EPA's interpretation of the proposed rules is that they are more stringent than EPA requirements and need additional clarification to determine capture efficiency testing. Specifically, the following three comments were submitted:

Section 115.422 references counties listed in §115.429(2)(A), but no counties are listed in this section. The staff agreed with EPA and changed the reference to reflect §115.429 only.

Section 115.425 does not include any exemptions which are available for sources which install an EPA-approved permanent total enclosure and for sources which use a carbon absorber provided certain restrictions are met. Additionally, the four protocols used to measure capture efficiency should be specifically identified. The staff agreed with EPA

and revised this section to reflect these comments.

Section 115.426(3) does not clearly give a deadline for submittal of capture efficiency test results required by §115.425(4). The staff concurred and added a sentence to clarify that the test results shall be submitted within 60 days after the actual test date. Another sentence was added to clarify that capture efficiency operating parameter records shall be maintained at the facility for a minimum of one year.

The amendments are adopted under the Texas Clean Air Act (TCAA), §382.017, Texas Health and Safety Code, Annotated (Vernon 1990), which provides TACB with the authority to adopt rules consistent with the policy and purposes of the TCAA.

**§115.422. Control Requirements.** For the counties referenced in §115.429 of this title (relating to Counties and Compliance Schedules).

(1) (No change.)

(2) Any surface coating operation that becomes subject to the provisions of §115.421 of this title (relating to Emission Specifications) by exceeding the provisions of §115.427 of this title (relating to Exemptions) shall remain subject to the provisions in §115.421, even if throughput or emissions later fall below exemption limits.

**§115.425. Testing Requirements.** For the counties referenced in §115.429 of this title (relating to Counties and Compliance Schedules), the following testing requirements shall apply.

(1)-(3) (No change.)

(4) The capture efficiency shall be measured using applicable procedures outlined in 40 Code of Federal Regulations (CFR), Part 52.741, Subpart O, Appendix B. These procedures are:

- Procedure T - Criteria for and Verification of a  
Permanent or Temporary Total Enclosure
- Procedure L - Volatile Organic Compounds (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 are exemptions to capture efficiency testing requirements.

(i) If a source installs a permanent total enclosure (PTE) which meets the specifications of Procedure T and which directs all VOC to a control device, then the capture efficiency is assumed to be 100%, and the source is exempted 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 PTE are met during testing for control efficiency.

(ii) If a source uses a control device designed to collect and recover VOC (e.g., carbon absorber), 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 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 must be done within 72 hours following each 24-hour period.

(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 absorber 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 shall be calculated using one of the following four protocols referenced. Any affected source must use one of these protocols, unless a suitable alternative protocol is approved by the executive director and the United States Environmental Protection Agency (EPA).

(i) Gas/gas method using Temporary Total Enclosure (TTE). EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:

The capture efficiency equation to be used for this protocol is:

$$CE = Gw / (Gw + Fw)$$

where: CE = capture efficiency, decimal fraction

Gw = mass of VOC captured and delivered to control device using a TTE (use Procedure G.2)

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

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

$$CE = (L - F) / L$$

where: CE = capture efficiency, decimal fraction

L = mass of liquid VOC input to process (use Procedure L)

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

(iii) Gas/gas method using the building or room in which the affected source is located as the enclosure

(BE) and in which G and F are measured while operating only the affected facility. All fans and blowers in the BE must be operating as they would under normal pro-

duction. The capture efficiency equation to be used for this protocol is:

$$CE = G / (G + Fb)$$

where: CE = capture efficiency, decimal fraction

G = mass of VOC captured and delivered to a control device (use Procedure G.2)

Fb = mass of fugitive VOC that escapes from building enclosure (use Procedure F.2)

(iv) Liquid/gas method using a BE in which L and F are measured while operating only the affected facility. All fans and blowers in the building or room must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:

$$CE = (L - Fb) / L$$

where: CE = capture efficiency, decimal fraction

L = mass of liquid VOC input to process (use Procedure L)

Fb = mass of fugitive VOC that escapes from BE (use Procedure F.2)

must be met in measuring capture efficiency.

sociated with a test protocol may not be incorporated into the results of a capture efficiency test.

(C) The following conditions

(i) Any error margin as-

(ii) All affected facilities shall accomplish the initial capture efficiency testing by the schedule in §115.429.

(iii) During an initial pre-test meeting, the Texas Air Control Board (TACB) and the source owner or operator shall identify those operating parameters which shall be monitored to ensure that capture efficiency does not change significantly over time. These parameters shall be monitored and recorded initially during the capture efficiency testing and thereafter during facility operation. TACB may require a new capture efficiency test if the operating parameter values change significantly from those recorded during the initial capture efficiency test.

**§115.426. Recordkeeping Requirements.** For the counties referenced in §115.429 of this title (relating to Counties and Compliance Schedules), the following recordkeeping requirements shall apply.

(1)-(2) (No change.)

(3) The owner or operator shall maintain, on file, the capture efficiency protocol submitted under §115.425(4) of this title (relating to Testing Requirements). The owner or operator shall submit all results of the test methods and capture efficiency protocols to TACB 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 and/or control device destruction or removal efficiency test may be required.

(4) In accordance with the schedule referenced in §115.429(1), records shall be maintained sufficient to document the applicability of the conditions for exemptions referenced in §115.427 of this title (relating to Exemptions).

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 10, 1991.

TRD-9112628

Lane Hartscock  
Deputy Director, Air Quality  
Planning  
Texas Air Control Board

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Proposal publication date: July 2, 1991

For further information, please call: (512) 908-1451

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**Subchapter E. Solvent-Using Processes**

**Graphic Arts (Printing) By Rotogravure and Flexographic Processes**

• **31 TAC §§115.435, 115.436, 115.439**

The Texas Air Control Board (TACB) adopts amendments to §115.435, concerning testing requirements; §115.436, concerning recordkeeping requirements; and §115.439, concerning counties and compliance schedules. Sections 115.435 and 115.436 are adopted with changes to the proposed text as published in the July 2, 1991, issue of the *Texas Register* (16 TexReg 3676). Section 115.439 is adopted without changes and will not be republished. The amendment satisfies a requirement by the United States Environmental Protection Agency (EPA) to correct certain regulation deficiencies and inconsistencies to ensure compliance with applicable requirements for control and collection systems of volatile organic compounds.

The amendment to §115.435 adds additional requirements for capture efficiency compliance testing to be consistent with EPA guidance. The amendment to §115.436 adds a paragraph to explain the additional recordkeeping requirements required by new capture efficiency testing. The amendment to §115.439 adds a new compliance date for new requirements.

A public hearing was held on July 22, 1991, in Austin. No oral testimony was presented. Written testimony was received from two commenters during the comment period which was extended from July 23 until July 30, 1991.

EPA comments concerning clarification, exemptions, and alternative protocols (covered in detail under §115.425) were also incorporated into the final rule language of §115.435.

Flexible Packaging Association (FPA) was concerned with the lack of demonstrable improvement in accuracy, cost effectiveness, length of test, and lack of universal applicability of the capture efficiency testing in §115.435. EPA has determined that a liquid/gas mass balance can not normally be used to satisfy the capture efficiency testing requirements, because of the high probability error associated with the procedure. The staff can appreciate the investments of FPA members to develop alternative ink and coating formulations, enhancements in application techniques, and the installation of add-on collection devices, and additional volatile organic compounds (VOC) destruction devices in order to reduce emissions. Even though improvements have been made, the overall process efficiency can only be determined by testing both capture (collection) efficiency and control device efficiency. The cost of performing capture efficiency testing could possibly be high; however, if a permanent total enclosure or a building or room enclosure exists, then the facility may meet an exemption or need only to perform a one-time capture efficiency test, thereby minimizing expenses. The staff incorporated certain exemptions and alternative method approval procedures in the final rule language which will provide for a determination on a case-by-case basis.

The staff adopted EPA's comment that test results required by §115.436 should be submitted within 60 days of the actual test date and that capture efficiency operating parameter records shall be maintained at the facility for a minimum of one year.

The amendments are adopted under the Texas Clean Air Act (TCAA), §382.017, Texas Health and Safety Code, Annotated (Vernon 1990), which provides TACB with the authority to adopt rules consistent with the policy and purposes of the TCAA.

**§115.435. Testing Requirements.** For the counties referenced in §115.439 of this title (relating to Counties and Compliance Schedules), compliance shall be determined by applying the following test methods, as appropriate:

(1)-(6) (No change.)

(7) the capture efficiency which shall be measured using applicable procedures outlined in 40 Code of Federal Regulations (CFR), Part 52.741, Subpart O, Appendix B. These procedures are:

- Procedure T - Criteria for and Verification of a  
Permanent or Temporary Total Enclosure
- Procedure L - Volatile Organic Compounds (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 are exemptions to capture efficiency testing requirements.

(i) If a source installs a permanent total enclosure (PTE) which meets the specifications of Procedure T and which directs all VOC to a control device, then the capture efficiency is assumed to be 100%, and the source is exempted 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 PTE are met during testing for control efficiency.

(ii) If a source uses a control device designed to collect and recover VOC (e.g., carbon absorber), 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 Code of Federal Regulation (CFR), §60.433 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 must be done within 72 hours following each 24-hour period.

(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 absorber 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 shall be calculated using one of the following four protocols referenced. Any affected source must use one of these protocols, unless a suitable alternative protocol is approved by the executive director and EPA.

(i) Gas/gas method using temporary total enclosure (TTE). EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:

$$CE = Gw / (Gw + Fw)$$

where: CE = capture efficiency, decimal fraction

Gw = mass of VOC captured and delivered to control device using a TTE (use Procedure G.2)

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

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

$$CE = (L - F) / L$$

where: CE = capture efficiency, decimal fraction

L = mass of liquid VOC input to process (use Procedure L)

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

(iii) Gas/gas method using the building or room in which the affected source is located as the enclosure

(BE) and in which G and F are measured while operating only the affected facility. All fans and blowers in the BE must be operating as they would under normal pro-

duction. The capture efficiency equation to be used for this protocol is:

$$CE = G / (G + Fb)$$

where: CE = capture efficiency, decimal fraction

G = mass of VOC captured and delivered to a control device (use Procedure G.2)

Fb = mass of fugitive VOC that escapes from building enclosure (use Procedure F.2)

(iv) Liquid/gas method using a BE in which L and F are measured while operating only the affected facility. All fans and blowers in the building or room must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:

$$CE = (L - Fb) / L$$

where: CE = capture efficiency, decimal fraction

L = mass of liquid VOC input to process  
(use Procedure L)

Fb = mass of fugitive VOC that escapes from BE (use Procedure F.2)

(C) The following conditions must be met in measuring capture efficiency.

(i) Any error margin associated with a test protocol may not be incorporated into the results of a capture efficiency test.

(ii) All affected facilities shall accomplish the initial capture efficiency testing by the schedule in §115.439 of this title (relating to Counties and Compliance Schedules).

(iii) During an initial pre-test meeting, the Texas Air Control Board (TACB), and the source owner or operator shall identify those operating parameters which shall be monitored to ensure that capture efficiency does not change significantly over time. These parameters shall be monitored and recorded initially during the capture efficiency testing and thereafter during facility operation. TACB may require a new capture efficiency test if the operating parameter values change significantly from those recorded during the initial capture efficiency test.

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

§115.436. *Recordkeeping Requirements.* For the counties referenced in §115.439 of this title (relating to Counties and Compliance Schedules), the owner or operator of any graphic arts facility subject to the control requirements of §115.432 of this title (relating to Control Requirements) shall:

(1)-(5) (No change.)

(6) maintain on file the capture efficiency protocol submitted under §115.435(7) of this title (relating to Testing Requirements). The owner or operator shall submit all results of the test methods and capture efficiency protocols to the Texas Air Control Board (TACB) 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 and/or control device destruction or removal efficiency test may be required.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 10, 1991.

TRD-9112625 Lane Hartsock, Deputy  
Director  
Air Quality Planning  
Texas Air Control Board

Effective date: November 1, 1991

Proposal publication date: July 2, 1991

For further information, please call: (512) 908-1451

## TITLE 34. PUBLIC FI- NANCE

### Part IV. Employees Retirement System of Texas

#### • 34 TAC §71.9

The Employees Retirement System of Texas adopts the repeal of §71.9, concerning military service credit-eligible periods, without changes to the proposed text as published in the August 13, 1991, issue of the *Texas Register* (16 TexReg 60).

The rule is being repealed to comply with legislation adopted by the 72nd Legislature.

State employees will be able to purchase service credit for any active duty military service without regard to whether it was during a time of war or armed conflict.

No comments were received regarding adoption of the repeal.

The repeal is adopted under the Texas Government Code, §815.102, which provides the Employees Retirement System of Texas with the authority to adopt rules for the administration of the funds of the retirement system.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 8, 1991.

TRD-9112341 Charles D. Travis  
Executive Director  
Employees Retirement  
System of Texas

Effective date: October 29, 1991

Proposal publication date: August 13, 1991

For further information, please call: (512) 867-3336

#### • 34 TAC §71.17

The Employees Retirement System of Texas adopts an amendment to §71.17, concerning credit for unused accumulated sick leave, without changes to the proposed text as published in the August 13, 1991, issue of the *Texas Register* (16 TexReg 60).

The rule is being amended to correspond with legislation passed by the 72nd Legislative Session.

The rule is amended so as to comply with legislation passed by the 72nd Legislature, and members with over 40 years' service will be entitled to additional credit for retirement purposes.

No comments were received regarding adoption of the amendment.

The amendment is adopted under §815.102, Texas Government Code, which provides Employees Retirement System of Texas with the authority to adopt rules for the administration of the funds of the retirement system.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 8, 1991.

TRD-9112338 Charles D. Travis  
Executive Director  
Employees Retirement  
System of Texas

Effective date: October 29, 1991

Proposal publication date: August 13, 1991

For further information, please call: (512) 867-3336

### Chapter 73. Benefits.

#### • 34 TAC §73.19

The Employees Retirement System of Texas adopts the repeal of §73.19, concerning disability retiree-continuation of benefits, without changes to the proposed text as published in the August 13, 1991, issue of the *Texas Register* (16 TexReg 60).

The rule is being repealed to comply with legislation adopted by the 72nd Legislature.

The repeal will allow disability retirees to earn additional income without their disability annuity being reduced.

No comments were received regarding adoption of the repeal.

The repeal is adopted under the Texas Government Code, §815.102, which provide the Employees Retirement System of Texas with the authority to adopt rules for the administration of the funds of the retirement system.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 8, 1991.

TRD-9112340 Charles D. Travis  
Executive Director  
Employees Retirement  
System of Texas

Effective date: October 29, 1991

Proposal publication date: August 13, 1991

For further information, please call: (512) 867-3336

### Chapter 77. Judicial Retirement

#### • 34 TAC §77.5

The Employees Retirement System of Texas adopts the repeal of §77.5, concerning military service credit-eligible periods, without changes to the proposed text as published in the August 13, 1991, issue of the *Texas Register* (16 TexReg 60).

The rule is being repealed to comply with legislation adopted by the 72nd Legislature.

Members of Judicial Retirement Systems I and II will be able to purchase service credit for any active duty military service without regard to whether it was during a time of war or conflict.

No comments were received regarding adoption of the repeal.

The repeal is adopted under the Texas Government Code, §835.002 and §840.002, which provides the Employees Retirement System of Texas with the authority to adopt rules for the administration of the funds of the retirement system.

This agency hereby certifies that the rule as adopted has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Issued in Austin, Texas, on October 8, 1991.

TRD-9112339 Charles D. Travis  
Executive Director  
Employees Retirement  
System of Texas

Effective date: October 29, 1991

Proposal publication date: August 13, 1991

For further information, please call: (512) 867-3336

### Chapter 81. Insurance

#### • 34 TAC §81.7

The Employees Retirement System of Texas adopts an amendment to §81.7, concerning enrollment and participation, with changes to the proposed text as published in the August 13, 1991, issue of the *Texas Register* (16 TexReg 60).

Trustee rules are modified in compliance with legislation to allow state employees and retirees who do not reside in any HMO service area an annual opportunity to enroll eligible dependents without evidence of insurability. Rules will also be modified to clarify the effective date of coverage changes and to allow a state employee to reinstate canceled coverage without evidence of insurability when he/she returns to work from