Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

Exhibit E

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HEARING REPORT

Prepared Pursuant to Section 4-168(d) of the Connecticut General Statutes and Section 22a-3a-3(d)(5) of the Department of Energy and Environmental Protection Rules of Practice

Regarding
Amendment of Air Quality Regulations Concerning Volatile Organic Compound Emissions from Storage Tanks

Hearing Officer:
Robin D. Baena

Date of Hearing: March 7, 2013

On January 10, 2013, the Commissioner of the Department of Energy and Environmental Protection (DEEP) published a notice of intent to amend section 22a-174-20 of the Regulations of Connecticut State Agencies (RCSA). Pursuant to such notice, a public hearing was held on March 7, 2013, with the public comment period closing on March 8, 2013.

I. Hearing Report Content

As required by section 4-168(d) of the Connecticut General Statutes (CGS), this report describes the proposal, identifies principal reasons in support of and in opposition to the proposal, and summarizes and responds to all comments on the proposal.

The proposal is included as Attachment 2 to this report. A final revised version of the proposal based on the recommendations in this report is included as Attachment 3. A statement in satisfaction of CGS section 22a-6(h) is included as Attachment 1.

II. Summary of Proposal

The commissioner is proposing to revise subsections (a), (b), (c) and (x) of RCSA section 22a-174-20. The primary purpose of the proposal is to update requirements concerned with the control of volatile organic compound (VOC) emissions from large aboveground storage tanks (AST) through revisions to RCSA section 22a-174-20(a). DEEP is proposing to:

- Remove the option of using an undomed floating roof tank to store VOCs, clarify inspection requirements and add requirements for roof landing events and degassing and cleaning operations;
- Require timely repair of leaks throughout any VOC storage and transfer facility;
- Update the floating roof requirements for VOC and water separators; and

- Revise the leak control provisions for synthetic organic chemical and polymer manufacturing equipment by removing an outdated regulatory reference and clarifying the time limit for retesting.

Based on the 2007 Connecticut emissions inventory, there are 45 AST in the state that would be subject to the AST requirements of this proposal. All 45 AST are floating roof tanks. As a group, these tanks emit approximately 150 tons, or less than two-tenths of one percent, of the over 86,000 tons[1] of the anthropogenic VOC emitted in Connecticut annually. AST owners and operators are attentive to practices that limit loss of stored product, which has a co-benefit of limiting VOC emissions. There is, therefore, little opportunity for a significant reduction in emissions as a result of this proposal. Rather, the proposal serves as regulatory maintenance and satisfies a commitment to other Northeastern states to adopt reasonable controls for AST emissions.

III. Opposition to the Proposal

No submitted comments oppose adoption of this proposal.

IV. Summary of Comments

Oral comment was given at the hearing by:

1. Nathan Stevens
   Cumberland Gulf Group of Companies
   100 Crossing Boulevard
   Framingham, MA 01702

Written comments were received from the following persons:

2. Anne Arnold, Manager
   Air Quality Planning Unit
   USEPA Region 1
   5 Post Office Square, Suite 100
   Boston, MA 02109-3912

3. Pamela F. Faggert
   Vice President and Chief Environmental Officer
   Dominion
   5000 Dominion Boulevard
   Glen Allen, VA 23060

4. Steve Guveyan
   Executive Director
   Connecticut Petroleum Council
   44 Capitol Ave., Suite 103-B
   Hartford, CT 06106

1 2008 National Emissions Inventory, http://www.epa.gov/ttn/chief/net/2008inventory.html

5. Christian A. Herb
Vice President
Connecticut Energy Marketers Association (CEMA)
10 Alcap Ridge
Cromwell, CT 06416

All comments submitted are summarized below with DEEP's responses. Commenters are associated with the individual comments below by the number assigned above. When changes to the proposed text are indicated in response to comment, new text is in bold font and deleted text is in strikethrough font.

Comment 1: The proposed definition of "storage tank" at RCSA section 22a-174-20(a)(1)(M)(ii) appears to prohibit the use of biocides in cases of microbial contamination of fuel. The lowering of sulfur content in fuels, combined with federally mandated requirements for ethanol use in automotive gasoline, have produced environments within the petroleum distribution infrastructure which are more conducive to microbial growth and the resultant problems of increased water content in stored fuels and product degradation. Accordingly, it is important for both product quality and safety that operators be permitted to use appropriate biocide treatments on an as-needed basis. Similar methods are widely utilized for microbial management in underground tank systems and by end users such as airlines. (1, 5)

Response: DEEP did not intend to limit the use of biocides to protect the quality of the stored product. Section 22a-174-20(a)(1)(M)(ii) should be revised as follows:

(ii) The only treatment carried out is treatment necessary to prevent change from occurring in the physical condition or chemical properties of the liquids or gases deposited into the container. Such treatment may include**, but is not limited to,** recirculating, agitating, maintaining the temperature of the stored liquids or gases, ~~or~~ replacing air in the vapor space above the stored liquids or gases with an inert gas ~~in order~~ to inhibit the occurrence of a chemical reaction **or adding a biocide to prevent microbial growth**;

Comment 2: In RCSA section 22a-174-20(a)(1), the definition of "throughput" was deleted; however, since this term is still used in the rule in a way that differs from how the term is defined in RCSA section 22a-174-1, the definition should be retained. (2)

Response: The definition of "throughput" should be retained as subsection (a)(1)(N), since the meaning of the term is distinct from that of the definition of "throughput" in RCSA section 22a-174-1. The subparagraphs following this subparagraph should be re-lettered alphabetically.

Comment 3: The use of kilopascals (kp) for the units of Reid vapor pressure (RVP) in the definition of "gasoline" in proposed subsection (a)(1)(G) is inconsistent with the units in the definition of "Reid vapor pressure" provided in proposed subsection (a)(1)(K). Pounds per square inch is the U.S. customary unit for RVP. (1, 3, 5)

Response: DEEP agrees with the commenters that consistent units should be used throughout the subsection for simplicity and clarity. In reviewing the proposed definition of "gasoline," we recognized that RVP is not necessary to define "gasoline." Gasoline is a

well-known commercially identified product. For example, the U.S. Environmental Protection Agency (EPA) defines gasoline as "any fuel sold … for use in motor vehicles and motor vehicle engines, and commonly or commercially known or sold as gasoline" in 40 CFR 80.2(c). The definition of "gasoline" in proposed subsection (a)(1)(G) should be revised as follows:

> "Gasoline" means any petroleum distillate or petroleum distillate and alcohol blend ~~having a [reid]~~ Reid ~~vapor pressure of [four pounds]~~ 27.6 ~~kilopascals or greater~~ **commercially known or sold as "gasoline"** and **commonly** used as ~~a~~ [motor vehicle] **an** internal combustion engine fuel[.];

Comment 4: Proposed RCSA section 22a-174-20(a)(1)(N) provides a definition of "underground" which is inconsistent with 40 CFR 280.12, which regulates underground storage tanks. Similarly, this definition of "underground" is inconsistent with that contained in section 22a-449(d)-1(a)(2), the Connecticut underground storage tank regulations. The commenter recommends that the proposed definition be amended to reflect the other current definitions. (5)

Response: The term "underground" is used once in the proposal as proposed subsection (a)(6). Since it is not DEEP's intent to create an alternative meaning of this term, the proposed definition of "underground" should be revised as follows:

> "Underground" means ~~situated below the grade of the land and completely covered with soil~~ **"underground" as defined in section 22a-449(d)-1(a)(2) of the Regulations of Connecticut State Agencies**;

The definition of "underground" in RCSA section 22a-449(d)-1(a)(2) reads as follows:

> "Underground" when referring to a facility or facility component means that ten percent or more of the volumetric capacity of the facility or component is below the surface of the ground and that portion which is below the surface of the ground is not fully visible for inspection.

Comment 5: The proposed revisions contain multiple provisions where the facility is allowed to use alternative controls or alternative test methods that have been approved by the commissioner. Such state discretion is not allowed in rules that are incorporated into a State Implementation Plan (SIP). Therefore, each of the following subsections of section 22a-174-20 should be revised to also require EPA approval: (a)(2)(C)(iv), (a)(2)(D), (a)(9)(A)(ii)(IV), (a)(9)(B)(i)(V), (a)(10)(B)(ii), (b)(17) and (c)(4). (2)

Response: As suggested in the comment, DEEP should require the EPA administrator and the DEEP commissioner to approve alternative controls and test methods in proposed subsections (a)(2)(C)(iv), (a)(2)(D), (a)(9)(B)(i)(V), (a)(10)(B)(ii), (b)(17) and (c)(4). Subsection (a)(9)(A)(ii)(IV) should be deleted as described in the response to comments 8 and 9.

Specifically, subsection (a)(2)(C)(iv) should be revised as follows:

> Once per month, demonstrate compliance with this subsection by inspecting the fittings located on the roof, piping, pressure relief valves and all other valves to

ensure they are leak-free using EPA Method 21 or using another method approved by the commissioner **and the Administrator**; or

Subsection (a)(2)(D) should be revised as follows:

[Other] The tank is equipped with other equipment or means of air pollution control with an efficiency equal to or greater than that required under subparagraph [22a-174-20(a)(2)(B)] (C) of this subdivision [for purposes of "air pollution" control as may be] that is approved by the ["Commissioner"] commissioner ~~by~~ **in a** permit or order**, where such permit or order has been approved by the Administrator**.

Proposed subsection (a)(9)(B)(i)(V) (subsection (a)(9)(C)(i)(V) in the final proposal as described in the response to comments 8 and 9) should be revised as follows:

Another cleaning agent approved by the commissioner **and the Administrator**, or

Subsection (a)(10)(B)(ii) should be revised as follows:

Documentation of control device efficiency and capture efficiency, if applicable, using an applicable EPA reference method or alternate method as approved by the commissioner **and the Administrator**,

The third sentence of subsection (b)(17) should be revised as follows:

… A request to delay a repair of a leak may be made to the commissioner **and the Administrator** in writing if the repair is infeasible for technical or safety reasons. …

Subsection (c)(4) should be revised as follows:

A container having other equipment of [equal] equivalent efficiency [for the purpose of "air pollution" control as required by subdivision (3) of this subsection] may be approved by the ["Commissioner"] commissioner [by] in a permit or order**, where such permit or order has been approved by the Administrator**.

In addition, owners or operators should keep records of Administrator approvals. Therefore, proposed subsection (a)(10)(B)(vii) (subsection (a)(10)(B)(viii) in the final proposal) should be revised as follows:

Any approval by the commissioner **or Administrator** issued pursuant to this subsection.

Comment 6: The applicability of proposed subsection (a)(4) is not clear and should be explicitly stated. The proposed new regulatory language of subsection (a)(4), which contains requirements to complete repairs or replacements for defects in tanks and/or equipment associated with the tanks, does not contain a clear or direct reference back to subsection (a)(3), which applies to tanks with capacities of 40,000 gallons or greater, and could be inadvertently misinterpreted to apply to tanks of any size. The commenter suggests adding the phrase "as a result of the inspection required under subsection (a)(3) or other observations of the equipment specified in subsection (a)(2)" to clarify applicability. (3)

Response: DEEP agrees with the commenter that the applicability of proposed subsection (a)(4) is not clear. Subsection (a)(4) is intended to apply to tanks subject to subsection (a)(2). Therefore, subsection (a)(4) should be revised as follows:

> **For any tank subject to subdivision (2) of this subsection,** ~~If~~ **if** any piping, valves, vents, seals, gaskets or covers of roof openings are found to have defects or visible gaps or the VOC control requirements of this subsection are not met, the owner or operator shall: …

Comment 7: Proposed subsection (a)(5) that requires submerged fill pipes to have a discharge point not more than six inches from the bottom of the tank is problematic. A fill pipe that close to the floor would clearly stir up sludge, dirt and/or water that has accumulated, thereby creating product quality issues. The bottom of the tank serves an important purpose in protecting product quality from impurities that may be introduced along the transportation route to the terminal. It is unclear to us what the agency's intent is in proposing this change, as lowering the fill discharge would not reduce vapor emissions. Even cable-suspended internal floating roofs cannot be lowered to heights less than three feet from the tank floor due to piping and structures within the tank. It appears that the negative impacts of this change would far outweigh any possible positive impacts. (4)

Response: DEEP agrees that the six-inch maximum height from the floor requirement is not necessary for tanks with floating roofs. This provision is intended to reduce splashing and vapor generation as a tank is filled by ensuring the discharge point is below the level of the liquid in the tank. For tanks with floating roofs the discharge point will be below the surface of the liquid, except when the roof is landed, which is governed by proposed subsection (a)(8). Therefore, proposed subsection (a)(6) should be revised to exempt tanks with floating roofs from the requirements of proposed subsection (a)(5) as follows:

> The provisions of subdivision [22a-174-20(a)(3)] (5) of this subsection shall not apply to the **following**:
>
> **(A)** ~~loading~~ **Loading** of ["volatile organic compounds"] VOC into any storage vessel having a capacity of less than one-thousand (1,000) gallons [which was] installed prior to June 1, 1972~~, nor to~~**;**
>
> **(B)** ~~any~~ **Any** underground storage vessel installed prior to June 1, 1972, where the fill pipe between the fill connection and the storage vessel is an ["]offset fill pipe~~.~~["]**; or**
>
> **(C) Any aboveground storage tank equipped with a floating roof**.

Comment 8: Section 22a-174-20(a)(9)(A) proposes to restrict degassing and cleaning of tanks from May 1 through September 30. Degassing and cleaning during this period would be allowed only if VOCs contained in the tank vapor space are routed to a vapor control system rated at a minimum 95 percent efficiency. The proposal imparts an additional financial obligation on industry, and an unintended effect on the environment.

The standard industry solutions implemented in these situations, at locations from Texas to Massachusetts, take the form of combustion, either in an internal combustion engine, flare, or a similar device. These treatment technologies are not without cost, and may provide limited

benefits when the total impact is considered. A recent tank degassing vapor control system required by regulators in another New England state during the degassing and cleaning of three gasoline storage tanks indicated the following:

1. The operator spent an additional $100,000 extra for vapor controls;
2. There were 6 days additional days of downtime of the tanks;
3. A total of 9,407 pounds of VOCs were incinerated (a treatment cost of $10.63 per pound); and,
4. An estimated total of 42,396 pounds of carbon dioxide (a greenhouse gas) were emitted directly by this combustion[2], including from the combustion of propane as a make-up gas, but not including the impacts of transporting the combustion units and propane to the site.

In short, the requirement to dramatically increase greenhouse gas emissions due to terminal operations seems inconsistent with the goal of Connecticut's *Public Act No. 08-98, An Act Concerning Global Warming Solutions.* (1, 5)

Comment 9: The time-frame for banning summertime tank cleanings without vapor control should be narrowed. While the agency's intent regarding the ban is understandable, the time-frame is unnecessarily long, considering that May and September typically are not hot-weather months in Connecticut. According to the Weather Underground historical data, the average mean temperatures in New Haven are: May – 62, June – 69, July – 76, August – 75, September – 66, so the May 1st through September 30th date range seems excessive. The date range should be shortened to June 1st through August 31st. An alternative would be ending it on September 15th to coincide with the end of the RVP season. (4)

Response to comments 8 & 9: Emissions from degassing in the summer months are a concern because they contribute VOCs that can react in the atmosphere to form ozone during the time when exceedences of the ozone national ambient air quality standards are most likely. Degassing emissions are also a public health concern given the local impact of the release of VOC and toxics. However, given the information submitted on control costs and carbon dioxide emissions, DEEP should revisit the proposed degassing requirements.

Degassing VOC emissions are relatively low in Connecticut. DEEP understands that owners and operators degas and clean their tanks relatively infrequently, averaging once every ten years. On average, four or five of the 45 floating roof tanks located in the state are degassed annually. Average degassing VOC emissions, based on the commenters' data, are approximately 1.5 tons per tank. The staff report for the 2005 revisions to San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4623[3,4] estimated degassing VOC emissions to be one half ton per tank. With four or five tanks degassing annually, total state-wide degassing emissions are estimated to be in the range of two to seven tons per year.

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2 Determination of greenhouse gas emissions based on the United States Environmental Protection Agency's *Emission Factors for Greenhouse Gas Inventories*, last modified November 7, 2011.

3 The degassing and cleaning requirements in the proposal are from an OTC model rule, which is based on the New Jersey VOC stationary storage tank rule. The degassing and cleaning requirements in the New Jersey rule are based on SJVAPCD Rule 4623.

4 San Joaquin Valley Air Pollution Control District. "Final Staff Report, Proposed Amendments to Rule 4623 (Storage of Organic Liquids)." May 19, 2005.

The commenters calculated the cost effectiveness of degassing controls to be $10.63 per pound (approximately $22,000 per ton) of VOC removed by dividing the cost of degassing controls ($100,000) by the emissions reductions (9,407 pounds of VOC). This cost is higher than DEEP generally considers cost effective for VOC controls.

On the other hand, SJVAPCD and New Jersey (based on the SJVAPCD staff report) determined that degassing controls were cost effective. The SJVAPCD Rule 4623 staff report reported a cost of $6,283 to $11,781 for degassing controls on a 2.6 million gallon tank. Annualizing the cost over ten years with an interest rate of 10% (resulting in a cost recovery factor of 0.163), SJVAPCD calculated a prorated annual cost range of $1,024 to $1,920 and a cost effectiveness ranging from $2,288 to $4,290 per ton of VOC removed. The cost effectiveness numbers represent the cost each year over the ten-year maintenance cycle, including those years when the tank is not degassed, for each ton of VOC treated. It is not a total cost per ton.

For comparison with the commenters' cost effectiveness calculations, the hearing officer calculated the cost per ton of VOC removed using the SJVAPCD data without annualizing the costs over ten years. By dividing the cost of degassing controls per tank ($6,283 to $11,781) by the average emissions reductions per tank (0.5 ton), the cost effectiveness calculated ranged from approximately $12,000 to $24,000 per ton of VOC removed. These costs are congruent with those provided by the commenter and exceed those generally considered cost effective for VOC control.

In recognition of the environmental impact of emissions from using combustion as a control, the small quantity of VOC emissions likely to be released in uncontrolled degassing and the cost of controlling those VOC emissions, DEEP should revise the proposal to prohibit degassing for planned routine maintenance and inspection during June, July and August. Tank owners/operators may degas to inspect and perform maintenance on their tanks without controls any time during the months of September through May. Degassing necessary to repair a tank, where such repairs are necessary for safe and proper function of the tank, should not be restricted.

In reviewing the proposed degassing and cleaning requirements of subdivision (9), the hearing officer recognizes the need to clarify the use of low-VOC solvents for cleaning and makes that clarification, as well, in the following revised text.

Subdivision (9) of subsection (a) should be revised as follows:

~~(9) On and after one year after the effective date of this subsection, the owner or operator of any aboveground storage tank subject to subdivision (2) of this subsection shall not perform degassing and cleaning during the period from May 1 through September 30 of any year unless the owner or operator complies with the requirements of this subdivision.~~

~~(A) An owner or operator may degas a tank if the owner or operator:~~

~~(i) Empties the tank of the VOC liquid.~~

~~(ii) Minimizes VOC vapors in the tank vapor space by one of the methods identified in subclauses (I) through (IV) of this clause.~~

~~(I) Exhausts VOCs contained in the tank vapor space to a vapor control system rated at a minimum 95 percent efficiency until the organic vapor concentration is 5,000 parts per million by volume (ppmv) or less as methane, or is 10 percent or less of the lower explosive limit, whichever is less;~~

~~(II) Displaces VOCs contained in the tank vapor space to a vapor control system rated at a minimum 95 percent efficiency by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a vapor pressure of less than 0.5 pounds per square inch, water, clean produced water, or produced water derived from crude oil having a vapor pressure less than 0.5 pounds per square inch.~~

~~(III) If the tank is a free-water knockout tank, degases the tank vapor space by restricting the outflow of water and floating off the oilpad, such that at least 90 percent of the tank volume is displaced, or~~

~~(IV) Uses another measure approved by the commissioner as being equally or more effective in preventing VOC emissions to the outdoor atmosphere. A request to use such a measure shall be submitted in writing to the commissioner no less than 30 days prior to conducting degassing, and~~

~~(V) For a floating roof tank, the vapor in the vapor space below the floating roof shall be controlled, and~~

~~(iii) As appropriate, temporarily removes a suitable tank fitting, such as a manway, to facilitate connection to an external vapor control system for no longer than one hour;~~

(9) An owner or operator of an aboveground storage tank shall perform degassing and cleaning as set out in this subdivision.

(A) Beginning with the first June 1 after the effective date of this subsection, an owner or operator shall not perform degassing of any aboveground storage tank subject to subdivision (2) of this subsection during the period from June 1 through August 31 of any calendar year, except as provided in subparagraph (B) of this subdivision;

(B) Notwithstanding subparagraph (A) of this subdivision, an owner or operator may degas an aboveground storage tank at any time for the purpose of performing a repair that is necessary for safe and proper function of the tank. An owner or operator shall notify the commissioner when a tank is emptied and degassed under this subparagraph within 72 hours of completing the degassing and repair. Such notification shall be submitted to

the Compliance Assistance and Coordination Unit of the Bureau of Air Management and shall include the following information:

(i) **Identification of the facility and the tank degassed,**

(ii) **Identification of the VOC stored,**

(iii) **An explanation of the need to degas the tank during the period from June 1 through August 31,**

(iv) **The date the owner or operator determined that degassing and repair would be necessary,**

(v) **The dates that degassing commenced and was completed,**

(vi) **The date that inspection, repair and refilling was or is anticipated to be completed; and**

~~(B)~~ **(C)** ~~The~~ **An** owner or operator shall clean ~~a tank if~~ **an aboveground storage tank subject to subdivision (2) of this subsection using one or more of the following methods**:

(i) ~~At least one of the~~ **Using any of the** following cleaning agents ~~is used~~:

(I) Diesel fuel,

(II) A solvent with an initial boiling point of greater than 302 degrees Fahrenheit,

(III) A solvent with a vapor pressure less than 0.5 pounds per square inch,

(IV) A solvent with 50 grams per liter VOC content or less, or

(V) Another cleaning agent approved by the commissioner **and the Administrator**, or

(ii) Steam cleaning ~~is performed; and~~**.**

~~(C) The owner or operator shall control emissions from the sludge removed from a tank that stores a VOC with a vapor pressure of 1.5 pounds per square inch or greater at standard conditions by:~~

~~(i) During sludge removal, controlling emissions from the receiving vessel by operating a vapor control system that reduces VOC emissions by at least 95 percent,~~

~~(ii) Transferring removed sludge into containers that are vapor-tight and free of liquid leaks, and~~

~~(iii) For sludge stored onsite, storing removed sludge in containers that are vapor-tight and free of liquid leaks or in tanks that comply with subdivision (2) of this subsection.~~

(*The revision recommended in response to comment 5 is included in the above text.)*

In addition, the recordkeeping requirement for degassing and cleaning in proposed subdivision (10)(B)(vi) should be revised to be reflect the changes to proposed subdivision (9). Subdivisions (10)(B)(vi) and (vii) should be revised as follows:

(vi) ~~Records~~ **Dates** of all tank degassing~~, cleaning and sludge removal~~ activities performed pursuant **to subparagraphs (A) or (B) of** subdivision (9) of this subsection, ~~and~~

(vii) Date, cleaning method and cleaning agents used for any cleaning performed pursuant to subparagraph (C) of subdivision (9) of this subsection, and

~~(vii)~~ **(viii)** Any approval by the commissioner **or Administrator** issued pursuant to this subsection.

(*The revision recommended in response to comment 5 is included in the above text.)*

Comment 10: Proposed subsection (a)(10)(B)(iv) should explicitly state that documentation of leaks is required for leaks detected under subdivision (4). (3)

Response: DEEP agrees with the commenter that proposed subsection (a)(10)(B)(iv) should limit recordkeeping to leaks regulated by subsection (a)(4) as follows:

Documentation of any leak detected **pursuant to subdivision (4) of this subsection**, including, but not limited to, the date the leak was detected, location of the leak, type of repair made and the date of repair and explanation of the reason for delaying repair, if applicable,

Comment 11: The applicability of proposed subsection (b)(17) is not clear and should be explicitly stated. The commenter suggests revising the text to read: "The owner or operator *of any loading facility, dispensing facility or delivery vehicle subject to the provisions of this subsection* shall …" to make the applicability clear. (3)

Response: DEEP agrees with the commenter that the applicability of proposed subsection (b)(17) should be clarified. The provision is intended to apply to facilities that have a daily throughput of 4,000 gallons or greater (*i.e.* those facilities subject to subdivision (4) or (5) of subsection (b)). DEEP does not intend for this provision to apply to delivery vehicles, addressed in subsection (b)(12) through (14), or dispensing facilities (gas stations). Further, proposed subsection (b)(17) should be revised to clarify that any one of the four determinants – sight, smell, sound or measurement of VOC – trigger the repair requirement. Therefore, subsection (b)(17) should be revised to read as follow:

The owner or operator **of a loading facility with a throughput of 4,000 gallons or more in any day** shall not cause, allow or permit leakage from any equipment in VOC service, including but not limited to pumps, valves and compressors. The owner or operator of

any equipment in VOC service that is leaking as determined by sight, smell, sound or **measurement of** VOC ~~measured~~ in excess of 5000 parts per million shall repair such leak no later than fifteen days after detection. A request to delay a repair of a leak may be made to the commissioner **and the Administrator** in writing if the repair is infeasible for technical or safety reasons. Such a request shall be submitted no later than 15 days after detection of the leak.

(*The revision recommended in response to comment 5 is included in the above text.)*

V. Comments of Hearing Officer

The hearing officer suggests the following additional revisions to the proposal. The suggested revisions are minor, noncontroversial and will make for a clearer final proposal.

(1) The definitions of "aboveground" and "degassing" should placed in alphabetical order in subsection (a)(1), and subsection (a)(1) should be re-lettered accordingly.

(2) The period after the millimeter abbreviation in subsection (a)(2)(B) is unnecessary and should be removed. Subsection (a)(2)(B) should be revised to read as follows:

> … This control equipment is not permitted if the ["volatile organic compound"] VOC has a vapor pressure of 11.0 pounds per square inch absolute (568 mm~~.~~ Hg)[,] or greater under [actual storage] standard conditions…

(3) The first sentence of proposed subsection (a)(2)(B) is awkward and should be revised as follows for clarity:

> [A] The tank is equipped with a fixed roof and a ["]vapor recovery system[" which collects all volatile organic compound vapors and gases discharged from the tank and a vapor return or disposal system which] that is designed and operated to [process such vapors so as to] reduce [their emission] emissions **of VOC** to the atmosphere ~~of VOC~~ by at least 95 percent by weight.

(4) The word "replacement" in subsection (a)(4)(A) should be in the plural form as follows:

> (A) If the tank is not storing liquid, complete repairs or ~~replacement~~ **replacements** prior to filling the tank;

(5) Subsection (a)(4)(B) should be revised by replacing the word "replacement" with its plural form, by replacing the phrase "needed repair or replacement" with "defect or visible gap" to improve clarity, and by adding a hyphen between "45" and "day" in the phrase "45-day period" as follows:

> (B) If the tank is storing liquid, complete repairs or ~~replacement~~ **replacements** or remove the tank from service within 45 days after discovery of the ~~needed repair or replacement~~ **defect or visible gap**. If the owner or operator anticipates that a repair or replacement cannot be completed or the tank cannot be emptied within 45 days, the owner or operator shall notify the commissioner prior to the end of the 45~~-~~day period. …

(6) Subsection (a)(4)(C) should be revised as follows:

(C) Any evidence of leakage as described in this subsection shall also be treated as a malfunction of control equipment as described in section 22a-174-7 of the Regulations of Connecticut State Agencies. ~~A re-inspection~~ **An inspection** in accordance with the provisions of this subdivision (3) if this subsection shall be performed immediately after all required repairs are complete.

(7) For consistency, the word "before" should be replaced with "prior to" in subsection (a)(5) as follows:

…Submerged fill pipes installed on or ~~before~~ **prior to** the effective date of this subsection shall have a discharge point no more than 18 inches from the bottom of the storage tank or be compliant with the requirements of 40 CFR 63 Subpart CCCCCC. …

(8) The process of emptying and filling a tank during roof landings should be continuous, without starts and stops. However, as written, subsection (a)(8)(A) could be read to imply that emptying and filling a tank during roof landings needs to be conducted in a hurried manner. For clarity, subsection (a)(8)(A) should be revised as follows:

(A) When the roof is resting on its leg supports or suspended by cables or hangers, ~~the process of filling, emptying or refilling shall be continuous and shall be accomplished as rapidly as possible~~ **empty and refill the tank as a continuous process**; and

(9) The acronym RVP is defined in the definition of Reid vapor pressure in subsection (a)(1)(K) and should be used in subdivisions (13) and (14) of subsection (a) as follows:

(13) Samples to be analyzed for ~~Reid vapor pressure~~ **RVP** shall be collected and handled according to the applicable procedures in American Society for Testing and Materials method D 5842–95(2000), "Standard Practice for Sampling and Handling of Fuels for Volatility Measurement."

(14) ~~Reid vapor pressure~~ **RVP** shall be determined using American Society for Testing and Materials method D5191-07 (2007)…

(10) The acronym for Code of Federal Regulations, CFR, is defined in RCSA section 22a-174-1(23) and should be used in subsection (b)(2)(B). Subsection (b)(2)(B) should be revised as follows:

(B) [the] The amount of [volatile organic compounds] VOCs released to the ambient air is less than 80 milligrams per liter of liquid loaded over a six (6) hour period. To determine compliance with this requirement the reference methods and test procedures found in [Title] 40 ~~Code of Federal Regulations~~ **CFR** [Part] 60.503(a) and [Part] 60.503(c), respectively, shall be used.

(11) Referencing subsection (a)(2)(B) in proposed subsection (c)(2) makes the scope and intent of proposed subsection (c)(2) unclear. Since VOC and water separators are generally much smaller than the AST regulated under subsection (a)(2) and their potential emissions much lower, DEEP does not intend that VOC and water separators comply with the same requirements as large AST. A floating roof, as is required in current subsection (c)(2), is an appropriate level of control for these sources. Therefore, the reference to subsection (a)(2)(B) should be removed. In addition, subsection (c)(2) should be revised to clarify that the types of floating roofs allowed are not limited to pontoon-type or double deck covers. Finally, the term "gas tight" is not defined and should be replaced with the defined term "vapor-tight." Subsection (c)(2) should be revised as follows:

> (2) A container ~~[~~equipped with a floating roof~~, consisting of a pontoon type, double deck type roof, or internal floating cover, which will rest~~ **that rests** on the surface of the contents and ~~be~~ **is** equipped with a closure seal or seals to close the space between the roof edge and container wall. All gauging and sampling devices shall be ~~gas tight~~ **vapor-tight** except when gauging or sampling is taking place~~.]~~ ~~meeting the requirements of subparagraph (a)(2)(B) of this section~~;

VI. Conclusion

Based upon the comments addressed in this Hearing Report, I recommend the proposal be revised as recommended herein and that the recommended final proposal, included as Attachment 3 to this report, be submitted by the Commissioner for approval by the Attorney General and the Legislative Regulations Review Committee and upon adoption, be submitted to the EPA as a SIP revision.

/s/ Robin D Baena — 08/22/2013

Robin D. Baena, Hearing Officer — Date

ATTACHMENT 1
STATEMENT PURSUANT TO SECTION 22a-6(h) OF THE GENERAL STATUTES:
FEDERAL STANDARDS ANALYSIS

Pursuant to section 22a-6(h) of the Connecticut General Statutes (CGS), the Commissioner of the Department of Energy and Environmental Protection (the Department) is authorized to adopt regulations pertaining to activities for which the federal government has adopted standards or procedures. At the time of public notice, the Commissioner must distinguish clearly all provisions of a regulatory proposal that differ from federal standards or procedures either within the regulatory language or through supplemental documentation accompanying the proposal. In addition, the Commissioner must provide an explanation for all such provisions in the regulation-making record required under CGS Title 4, Chapter 54 and make such explanation publicly available at the time of the publication of the notice of intent required under CGS section 4-168.

In accordance with the requirements of CGS section 22a-6(h), the following statement is entered into the administrative record in the matter of the proposed revisions to section 22a-174-20 of the Regulations of Connecticut State Agencies (RCSA):

The proposal primarily enhances existing requirements concerned with the control of volatile organic compound (VOC) emissions from large aboveground storage tanks through revisions to RCSA section 22a-174-20. The Department is proposing to:

- remove the option of using an undomed floating roof tank to store VOCs, clarify inspection requirements and add requirements for roof landing events and degassing and cleaning operations;
- require timely repair of leaks throughout the VOC storage and transfer facility;
- revise the floating roof requirements for VOC and water separators to be consistent with the floating roof requirements for storage tanks; and
- revise the leak control provisions for synthetic organic chemical and polymer manufacturing equipment by removing an outdated regulatory reference and clarifying the time limit for retesting.

The Department performed a comparison of the proposal to analogous federal regulations, namely, 40 Code of Federal Regulations (CFR) 60 Subpart Kb, *New Source Performance Standards (NSPS) for VOC Storage Tanks for which Construction, Reconstruction or Modification Commenced After July 23, 1984* and 40 CFR 63 Subpart R, *National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)*. Subpart Kb identifies seal and deck fitting specifications for internal and external floating roof tanks as well as inspection criteria for the seals and fittings. Subpart R refers to Subpart Kb for seal and deck fitting specifications and specifies inspection criteria for all equipment in gasoline service. Both Subpart Kb and Subpart R identify timelines for repairs when inspections indicate that repairs are necessary.[5]

[5] Storage tank control requirements, including the use of an internal or external floating roof, are also set out in 40 CFR 63 subpart WW, *National Emission Standards for Storage Vessels (Tanks) – Control Level 2*. However, the applicability of subpart WW is based on a reference to subpart WW in another subpart of the CFR. The Department is not aware of such a reference and is not aware of any storage tank located in Connecticut subject to subpart WW.

Based on its review of Federal regulations, the Department has determined that the proposed amendment is more stringent in requiring that all floating roof tanks must be domed in Connecticut. As all existing tanks are domed, the restriction has no impact on existing tank owners and operators.

With regard to the proposed roof landing requirements and ozone season degassing and cleaning requirements, there are no equivalent federal requirements in 40 CFR 60 Subpart Kb or 40 CFR 63 Subpart R. .

With regard to the remaining provisions of the amendment, the requirements are consistent with the federal requirements.

4 January 2013
Date

/s/Merrily A. Gere
Bureau of Air Management

Attachment 2

Proposal

Section 1. Subsection (a) of section 22a-174-20 of the Regulations of Connecticut State Agencies is amended to read as follows:

Sec. 22a-174-20. Control of organic compound emissions

(a) Storage of [“]volatile organic compounds[”] and restrictions for the Reid [Vapor Pressure] vapor pressure of gasoline.

[(a)](1) Definitions. For the purposes of this subsection and subsections (b) and (c) of this section:

(A) “Approved control system” means, a vapor balance system or a vapor recovery system[.];

(B) “Delivery vehicle” means a tank truck, tank-equipped trailer, railroad tank car, or other [“]mobile source[”] equipped with a storage [“]tank[”] used for the transportation of gasoline from [“]sources[”] of supply to any stationary storage [“]tank[.”];

(C) “Aboveground” means located on or above the surface of the ground, partially buried, bunkered or located in a subterranean vault;

(D) “Degassing” means the process of removing organic vapors from a storage tank in preparation for human entry;

(E) “Dispensing facility” means any site where gasoline is delivered to motor vehicles other than agricultural vehicles from any stationary storage [“]tank[”] with a capacity of 250 gallons or more[.];

(F) “Floating roof” means a movable roof in a storage vessel consisting of a floating deck resting on the surface of the liquid contents, a continuous seal supported against the inner surface of the tank shell, and an envelope closing the gap between the floating deck and the seal. The entire deck, seal and envelope combination is free to rise and fall with the surface of the liquid during filling and emptying of the storage vessel;

(G) “Gasoline” means any petroleum distillate or petroleum distillate and alcohol blend having a [reid] Reid vapor pressure of [four pounds] 27.6 kilopascals or greater and used as a [motor vehicle] internal combustion engine fuel[.];

(H) “Gasoline storage tank farm” means a [“premise”] premises with any individual [“]gasoline[”] storage [“]tank[”] with a capacity equal to or greater than forty thousand (40,000) gallons[.];

(I) “Leak-free” means a condition that exists when the reading on a portable hydrocarbon analyzer is less than 500 ppm, expressed as methane, above background, measured using EPA Method 21, as identified in 40 CFR Part 60, Appendix A, Determination of Volatile Organic Compounds Leaks;

(J) "Loading facility" means any combination of equipment located on a premises and used to load or unload any VOC with a vapor pressure of 0.75 pounds per square inch or greater under standard conditions;

(K) "Reid [Vapor Pressure] vapor pressure" or "RVP" means the vapor pressure of a liquid in pounds per square inch absolute at one hundred (100) degrees fahrenheit as determined by American Society for Testing and Materials method [D323-82 "Standard Method for Vapor Pressure of Petroleum Products (Reid Method).] D5191-07 "Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method);"

(L) "Roof landing" means the reduction of the liquid level in a floating roof tank so that the floating roof is no longer floating on the surface of the stored liquid but is resting on its legs or is supported from above by cables or hangers;

(M) "Storage tank" means any tank, reservoir or vessel that is a container for liquids or gases, wherein:

(i) No manufacturing process, or part thereof, other than filling or emptying takes place, and

(ii) The only treatment carried out is treatment necessary to prevent change from occurring in the physical condition or chemical properties of the liquids or gases deposited into the container. Such treatment may include recirculating, agitating, maintaining the temperature of the stored liquids or gases, or replacing air in the vapor space above the stored liquids or gases with an inert gas in order to inhibit the occurrence of a chemical reaction;

["Throughput" means the number of gallons delivered through all equipment at a dispensing facility or a loading facility over a specified time interval.]

(N) "Underground" means situated below the grade of the land and completely covered with soil;

(O) "Vapor balance system" means a combination of pipes or hoses [which] that creates a closed connection between the vapor spaces of an unloading ["]tank["] and receiving ["]tank["] such that vapors displaced from the receiving ["]tank["] are transferred to the ["]tank["] being unloaded and for which the vapor space connections on the unloading tank, the receiving tank and the pipes or hoses used are equipped with fittings [which] that are vapor-tight and [which] will automatically and immediately close upon disconnection so as to prevent the release of vapors. [The complete system as a whole and not just the individual components shall have been tested and approved by a nationally recognized testing laboratory.];

(P) "Vapor recovery system" means a device or system [of devices with attendant valves, fittings, piping, and other appurtenances incorporating a means for the incineration of vapors or the liquefaction of vapors by absorption, adsorption, condensation or other means. The complete system as a whole and not just the

individual components shall have been tested and approved by a nationally recognized testing laboratory.] that collects vapors to prevent release into the atmosphere. Collected vapors are recovered for use or destroyed; and

(Q) "Vapor-tight" means not capable of allowing the passage of gases at the pressures encountered.

[(a)(2) No "person" shall place, store or hold in any stationary "tank" reservoir or other container of more than 40,000 gallons capacity any "volatile organic compound" with a vapor pressure of 1.5 pounds per square inch absolute or greater under actual storage conditions unless the "tank," reservoir or other container is a pressure "tank" capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the atmosphere or is designed, and equipped, with one of the vapor loss control devices listed in subparagraphs (A) through (D) below. If the control devices specified in subparagraphs 22a-174- 20(a)(2)(A) or (a)(2)(D) are used to comply with the requirements of this subdivision, then the requirements of subdivision 22a-174-20(a)(8) must also be met.]

(2) No owner or operator shall place, store or hold in any aboveground storage tank of 40,000 gallons (150,000 liters) capacity or greater any VOC with a vapor pressure of 0.75 pounds per square inch or greater under standard conditions unless the tank is designed and equipped with a vapor loss control device identified in either subparagraph (A), (B), (C) or (D) of this subdivision.

(A) The tank is a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the atmosphere;

[(A)](B) [A] The tank is equipped with a fixed roof and a floating roof[, consisting of a pontoon type, double deck type roof or internal floating cover, which will rest] that rests on the surface of the liquid contents and [be] is equipped with a closure seal or seals to close the space between the roof edge and ["]tank["] wall. This control equipment is not permitted if the ["volatile organic compound"] VOC has a vapor pressure of 11.0 pounds per square inch absolute (568 mm. Hg)[,] or greater under [actual storage] standard conditions. [All "tank" gauging or sampling devices must be gas-tight except when "tank" gauging or sampling is taking place.] The owner or operator shall operate and maintain such a tank to ensure that:

(i) There are no visible holes, tears or other openings in the seal or any seal fabric or materials,

(ii) All openings except stub drains are equipped with covers, lids or seals such that:

(I) The cover, lid or seal is in the closed position at all times except when in actual use,

(II) Automatic bleeder vents are closed at all times except when the roof is being floated off or being landed on the roof leg supports, and

(III) Rim vents, if provided, are set to open to the manufacturer's recommended setting when the roof is floated off the roof leg supports or cables,

(iii) All tank gauging and sampling devices are vapor-tight except when tank gauging or sampling is taking place, and

(iv) No liquid accumulates on the top of the floating roof;

[(B)](C) [A] The tank is equipped with a fixed roof and a ["]vapor recovery system[" which collects all volatile organic compound vapors and gases discharged from the tank and a vapor return or disposal system which] that is designed and operated to [process such vapors so as to] reduce [their emission] emissions to the atmosphere of VOC by at least 95 percent by weight. An owner or operator limiting vapor loss according to this subparagraph shall perform the following actions no later than ten years after the effective date of this subsection if the tank is in existence prior to the effective date of this subsection or by the initial fill date if a tank is constructed on or after the effective date of this subsection:

(i) Equip any gauging or sampling device on the tank with a leak-free cover that shall be closed at all times, with no visible gaps, except during gauging or sampling,

(ii) Maintain the fixed roof in a leak-free condition with no holes, tears or uncovered openings, and

(iii) Install and maintain each roof opening in a leak-free condition at all times except when the cover is open for access or when a vent is required to be open to relieve excess pressure or vacuum in accordance with the manufacturer's design, or

(iv) Once per month, demonstrate compliance with this subsection by inspecting the fittings located on the roof, piping, pressure relief valves and all other valves to ensure they are leak-free using EPA Method 21 or using another method approved by the commissioner; or

[(C)](D) [Other] The tank is equipped with other equipment or means of air pollution control with an efficiency equal to or greater than that required under subparagraph [22a-174-20(a)(2)(B)] (C) of this subdivision [for purposes of "air pollution" control as may be] that is approved by the ["Commissioner"] commissioner by permit or order.

[(D) On or after June 1, 1985 a floating roof, consisting of a pontoon type, double deck type roof or external floating cover, which will rest on the surface of the liquid contents and be equipped with primary and secondary closure seals to close the space between the roof edge and the tank wall. This control equipment is not permitted if the volatile organic compound has a vapor pressure of 11.0 pounds per square inch absolute (568 mm. Hg), or greater under actual storage conditions. All tank gauging or sampling devices must be gas-tight except when tank gauging or

sampling is taking place. The owner or operator of any tank subject to this provision shall ensure that:

(i) Any seal is intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall;

(ii) The total area of gaps, determined in accordance with the requirements of subdivision 22a-174-20(a)(9), exceeding 0.125 inches in width between the secondary closure seal and the tank wall does not exceed 1.0 square inch per foot of tank diameter;

(iii) A secondary closure seal gap measurement as specified in (ii) above is made annually;

(iv) A visual inspection of the secondary closure seal is conducted semi-annually;

(v) Any emergency roof drain is provided with a slotted fabric cover which covers at least ninety percent (90%) of the area opening.]

(3) An owner or operator limiting vapor loss according to subdivision (2)(B) of this subsection shall conduct inspections as follows:

(A) Once per month visually inspect the floating roof deck, deck fittings and rim seal system through the roof hatches of the fixed roof to determine compliance with the requirements of subdivision (2)(B) of this subsection; and

(B) Whenever the tank is emptied and degassed, but no less than once every 10 years, conduct an inspection from within the tank by:

(i) Visually inspecting the floating roof deck, deck fittings and rim seal system to determine compliance with the requirements of subdivision (2)(B) of this subsection and ensure that the seal between the floating roof and the tank wall is uniform, and

(ii) Physically measuring gaps between any deck fitting gasket, seal or wiper and any surface that it is intended to seal. Gaps shall not exceed 0.125 inches.

(C) The inspection specified in subparagraph (B) of this subdivision may be performed entirely from the top side of the floating roof as long as there is visual access to all deck components specified in subdivision (2)(B) of this subsection.

(4) If any piping, valves, vents, seals, gaskets or covers of roof openings are found to have defects or visible gaps or the VOC control requirements of this subsection are not met, the owner or operator shall:

(A) If the tank is not storing liquid, complete repairs or replacement prior to filling the tank;

(B) If the tank is storing liquid, complete repairs or replacement or remove the tank from service within 45 days after discovery of the needed repair or replacement. If

the owner or operator anticipates that a repair or replacement cannot be completed or the tank cannot be emptied within 45 days, the owner or operator shall notify the commissioner prior to the end of the 45 day period. The owner or operator shall make repairs or completely empty the tank as soon as possible; and

(C) Any evidence of leakage as described in this subsection shall also be treated as a malfunction of control equipment as described in section 22a-174-7 of the Regulations of Connecticut State Agencies. A re-inspection in accordance with the provisions of this subdivision (3) if this subsection shall be performed immediately after all required repairs are complete.

[(a)(3)](5) No ["]person["] shall place, store, or hold in any stationary storage vessel of more than 250-gallon (950 liter) capacity any ["volatile organic compound"] VOC with a vapor pressure of [1.5] 0.75 pounds per square inch or greater under [actual storage] standard conditions unless such vessel is equipped with a permanent ["]submerged fill pipe[" with a discharge point eighteen (18) inches or less from the bottom of the storage vessel] or is a pressure ["]tank["] as described in subdivision [22a-174-20(a)(2)] (2)(A) of this subsection. Submerged fill pipes installed on or before the effective date of this subsection shall have a discharge point no more than 18 inches from the bottom of the storage tank or be compliant with the requirements of 40 CFR 63 Subpart CCCCCC. Submerged fill pipes installed after the effective date of this subsection shall have a discharge point no more than six inches from the bottom of the storage tank.

[(a)(4)](6) The provisions of subdivision [22a-174-20(a)(3)] (5) of this subsection shall not apply to the loading of ["volatile organic compounds"] VOC into any storage vessel having a capacity of less than one-thousand (1,000) gallons [which was] installed prior to June 1, 1972, nor to any underground storage vessel installed prior to June 1, 1972, where the fill pipe between the fill connection and the storage vessel is an ["]offset fill pipe.["]

(7) The external surfaces of any storage tank containing VOC with a vapor pressure of 0.75 pounds per square inch or greater under standard conditions that has a maximum capacity of 2,000 gallons (7,570 liters) or greater and is exposed to the rays of the sun shall be either mill-finished aluminum or painted and maintained white upon the next painting of the tank, or upon being returned to service after being out of service for the first time after the effective date of this subsection, whichever is sooner, and no less than 10 years after the effective date of this subsection, except the requirement to use mill-finished aluminum or white paint shall not apply to words and logograms applied to the external surface of the storage tank for purposes of identification provided such symbols do not cover more than 20 percent of the external surface area of the tank's sides and top or more than 200 square feet (18.6 square meters), whichever is less.

(8) When performing a roof landing of a floating roof tank, the owner or operator of any tank shall:

(A) When the roof is resting on its leg supports or suspended by cables or hangers, the process of filling, emptying or refilling shall be continuous and shall be accomplished as rapidly as possible; and

(B) After the tank is degassed for the first time after the effective date of this subsection, any in-service roof landing shall be with the landed height of the floating roof at its minimum setting.

(9) On and after one year after the effective date of this subsection, the owner or operator of any aboveground storage tank subject to subdivision (2) of this subsection shall not perform degassing and cleaning during the period from May 1 through September 30 of any year unless the owner or operator complies with the requirements of this subdivision.

(A) An owner or operator may degas a tank if the owner or operator:

(i) Empties the tank of the VOC liquid,

(ii) Minimizes VOC vapors in the tank vapor space by one of the methods identified in subclauses (I) through (IV) of this clause.

(I) Exhausts VOCs contained in the tank vapor space to a vapor control system rated at a minimum 95 percent efficiency until the organic vapor concentration is 5,000 parts per million by volume (ppmv) or less as methane, or is 10 percent or less of the lower explosive limit, whichever is less,

(II) Displaces VOCs contained in the tank vapor space to a vapor control system rated at a minimum 95 percent efficiency by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a vapor pressure of less than 0.5 pounds per square inch, water, clean produced water, or produced water derived from crude oil having a vapor pressure less than 0.5 pounds per square inch,

(III) If the tank is a free-water knockout tank, degases the tank vapor space by restricting the outflow of water and floating off the oilpad, such that at least 90 percent of the tank volume is displaced, or

(IV) Uses another measure approved by the commissioner as being equally or more effective in preventing VOC emissions to the outdoor atmosphere. A request to use such a measure shall be submitted in writing to the commissioner no less than 30 days prior to conducting degassing, and

(V) For a floating roof tank, the vapor in the vapor space below the floating roof shall be controlled, and

(iii) As appropriate, temporarily removes a suitable tank fitting, such as a manway, to facilitate connection to an external vapor control system for no longer than one hour;

(B) The owner or operator may clean a tank if:

(i) At least one of the following cleaning agents is used:

(I) Diesel fuel,

(II) A solvent with an initial boiling point of greater than 302 degrees Fahrenheit,

(III) A solvent with a vapor pressure less than 0.5 pounds per square inch,

(IV) A solvent with 50 grams per liter VOC content or less, or

(V) Another cleaning agent approved by the commissioner, or

(ii) Steam cleaning is performed; and

(C) The owner or operator shall control emissions from the sludge removed from a tank that stores a VOC with a vapor pressure of 1.5 pounds per square inch or greater at standard conditions by:

(i) During sludge removal, controlling emissions from the receiving vessel by operating a vapor control system that reduces VOC emissions by at least 95 percent,

(ii) Transferring removed sludge into containers that are vapor-tight and free of liquid leaks, and

(iii) For sludge stored onsite, storing removed sludge in containers that are vapor-tight and free of liquid leaks or in tanks that comply with subdivision (2) of this subsection.

(10) Records.

(A) An owner or operator shall maintain records including, at a minimum, the information described in subparagraph (B) of this subdivision. All such records shall be:

(i) Made available to the commissioner to inspect and copy upon request, and

(ii) Maintained for five years from the date such record is created.

(B) An owner or operator shall maintain records of the following information:

(i) For a tank equipped with a vapor loss control device specified in subdivision (2) of this subsection:

(I) Type of VOC stored, vapor pressure and monthly throughput,

(II) A Material Safety Data Sheet or Environmental Data Sheet for each VOC stored, and

(III) Records of the inspections conducted under subdivision (3) of this subsection including, but not limited to, date of the inspection, results and corrective actions taken, if applicable,

(ii) Documentation of control device efficiency and capture efficiency, if applicable, using an applicable EPA reference method or alternate method as approved by the commissioner,

(iii) Date and type of maintenance performed on air pollution control equipment, if applicable,

(iv) Documentation of any leak detected, including, but not limited to, the date the leak was detected, location of the leak, type of repair made and the date of repair and explanation of the reason for delaying repair, if applicable,

(v) For each floating roof landing event, the tank contents before landing and after refilling, landed height of the floating roof, height of any liquid remaining in the bottom of the tank after landing, duration of landing and landing emissions calculated using AP-42 Chapter 7 methodology,

(vi) Records of all tank degassing, cleaning and sludge removal activities performed pursuant subdivision (9) of this subsection, and

(vii) Any approval by the commissioner issued pursuant to this subsection.

[(a)(5)](11) Between May 1 and September 15 the owner or [“]operator[”] of any [“]gasoline storage tank farm[”] shall not offer for sale, sell or deliver to any [“]dispensing facility[”] in Connecticut [“]gasoline[”] with a [“]Reid Vapor Pressure[”] in excess of 9.0 pounds per square inch.

[(a)(6)](12) In addition to the requirements of section 22a-174-4 of the Regulations of Connecticut State Agencies, the [“Commissioner”] commissioner may by permit or order require the owner or [“]operator[”] of any [“]gasoline storage tank farm[”] to provide records of the analysis of [“]gasoline[”] samples to determine compliance with the provisions of subdivision [22a-174-20(a)(5)] (11) of this subsection.

[(a)(7) Any “person” who samples or tests “gasoline” for the purposes of determining compliance with subdivision 22a-174-20(a)(5) shall use the following American Society for Testing and Materials (ASTM) test methods:

(A) ASTM Method D323-82, “Standard Method for Vapor Pressure of Petroleum Products (Reid Method)”;

(B) ASTM Method D4057-81, “Standard Practice for Sampling of Petroleum and Petroleum Products”; or

(C) ASTM Method D270 "Standard Method of Sampling of Petroleum and Petroleum Products."]

(13) Samples to be analyzed for Reid vapor pressure shall be collected and handled according to the applicable procedures in American Society for Testing and Materials method D 5842–95(2000), "Standard Practice for Sampling and Handling of Fuels for Volatility Measurement."

(14) Reid vapor pressure shall be determined using American Society for Testing and Materials method D5191-07 (2007), except that the following correlation equation shall be used:

RVP psi = (0.956 * X) − 0.347.

[(a)(8) The owner or operator of any "tank" which uses the control devices specified in subparagraphs 22a-174-20(a)(2)(A) or (a)(2)(D) shall ensure that such "tank" meets the requirements of subparagraphs (A) through (F) of this subdivision.

(A) There are no visible holes, tears or other openings in the seal or any seal fabric or materials.

(B) All openings except stub drains are equipped with covers, lids or seals such that:

(i) the cover, lid or seal is in the closed position at all times except in actual use; and

(ii) automatic bleeder vents are closed at all times except when the roof is being floated off or being landed on the roof leg supports; and

(iii) rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

(C) Routine inspections are conducted through roof hatches once per month.

(D) A complete inspection of cover and seal is conducted whenever the "tank" is emptied for non-operational reasons but in any event at least once per year; and

(E) Records of the average monthly storage temperature, true vapor pressure, monthly throughput and type of volatile organic compounds stored are maintained and kept for a minimum of two (2) years after such record is made.

(F) Records of the results of the inspections conducted under subparagraphs (C) and (D) of this subdivision are maintained and kept for a minimum of two (2) years after such record is made.

(a)(9) Compliance with the requirements regarding the total area of gaps under subparagraph 22a-174-20(a)(2)(D) shall be determined by physically measuring the length and width of all gaps around the entire circumference of the secondary seal in each place where a O.32 cm (1/8 in.) uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and the tank wall and summing the area of the individual gaps. Any person who proposes to conduct this test shall notify the Department's Air Compliance Unit not less than thirty (30) days before the test so the Department may, at its option, observe the test.

(a)(10) The owner or operator of any tank with a capacity in excess of 40,000 gallons and which is equipped with an external floating roof shall maintain records of the average monthly storage temperature, the type of liquid stored and its vapor pressure, for any "volatile organic

compound" with a vapor pressure under actual storage conditions which is greater than 1.0 pounds per square inch but less than 1.5 pounds per square inch.]

Sec 2. Subdivisions (1) through (4) of subsection (b) of section 22a-174-20 of the Regulations of Connecticut State Agencies are amended to read as follows:

(1) [Additional definitions. For the purposes of this subsection the following definition shall apply:

"Loading facility" means any aggregation or combination of equipment located on a premises and used to load or unload any volatile organic compound with a vapor pressure of 1.5 pounds per square inch or greater under actual storage conditions.] Reserved.

(2) No person shall load or permit the loading of any [volatile organic compound] VOC with a vapor pressure of [1.5] 0.75 pounds per square inch or greater under [actual storage] standard conditions into any delivery vehicle from any loading facility with a throughput of 10,000 gallons or more in any one day unless such loading facility is equipped with a vapor collection and [disposal] vapor recovery system or its equivalent, properly installed, in good working order, and in operation, and:

(A) [the] The vapors discharged from the delivery vehicle during loading are processed by a vapor recovery system; and

(B) [the] The amount of [volatile organic compounds] VOCs released to the ambient air is less than 80 milligrams per liter of liquid loaded over a six (6) hour period. To determine compliance with this requirement the reference methods and test procedures found in [Title] 40 Code of Federal Regulations [Part] 60.503(a) and [Part] 60.503(c), respectively, shall be used.

(3) No person shall load or permit the loading of any [volatile organic compounds] VOC with a vapor pressure of [1.5] 0.75 pounds per square inch or greater under [actual storage] standard conditions into any delivery vehicle having a capacity in excess of 200 gallons (760 liters) from any loading facility with a throughput of 10,000 gallons or more in any one day unless such loading facility is equipped with a loading arm with a vapor collection adaptor, pneumatic, hydraulic, or other mechanical means to force a vapor-tight seal between the adaptor and the hatch. A means shall be provided to prevent liquid organic compounds drainage from the loading device when it is removed from the hatch of any delivery vehicle, or to accomplish complete drainage before such removal. When loading is effected through means other than hatches, all loading and vapor lines shall be equipped with fittings [which] that make vapor-tight connections and [which] close automatically when disconnected.

(4) Subdivisions (2) and (3) of this subsection shall apply only to the loading of [volatile organic compounds] VOC with a vapor pressure of [1.5] 0.75 pounds per square inch or greater under [actual storage] standard conditions at a facility from which at least 10,000 gallons of such organic compounds are loaded in any one day. The applicability of subdivisions (2) and (3) of this subsection shall be based upon a thirty day rolling average, and once a loading facility exceeds this limit, the requirements of subdivisions (2) and (3) of this subsection shall [always] apply.

Sec 3. Subsection (b) of section 22a-174-20 of the Regulations of Connecticut State Agencies is amended by adding subdivision (17):

(NEW)

(17) The owner or operator shall not cause, allow or permit leakage from any equipment in VOC service, including but not limited to pumps, valves and compressors. The owner or operator of any equipment in VOC service that is leaking as determined by sight, smell, sound or VOC measured in excess of 5000 parts per million shall repair such leak no later than fifteen days after detection. A request to delay a repair of a leak may be made to the commissioner in writing if the repair is infeasible for technical or safety reasons. Such a request shall be submitted no later than 15 days after detection of the leak.

Sec 4. Subsection (c) of section 22a-174-20 of the Regulations of Connecticut State Agencies is amended to read as follows:

(c) [“]Volatile organic compound[” /] and water separation. No [“person”] owner or operator shall use any compartment of any single or multiple compartment [“]volatile organic compound[”/ “] and waste water separator[” which] that receives effluent water containing 200 gallons (760 liters) a day or more of any [“volatile organic compound”] VOC with a vapor pressure of 1.5 pounds per square inch or more from any equipment processing, refining, treating, storing, or handling [“volatile organic compounds”] VOC unless such compartment is equipped with one or more of the following vapor loss control devices, properly installed, in good working order, and in operation:

(1) A container having all openings sealed and totally enclosing the liquid contents. All gauging and sampling devices shall be [gas-tight] vapor-tight except when gauging or sampling is taking place[.];

(2) A container [equipped with a floating roof, consisting of a pontoon type, double deck type roof, or internal floating cover, which will rest on the surface of the contents and be equipped with a closure seal or seals to close the space between the roof edge and container wall. All gauging and sampling devices shall be gas tight except when gauging or sampling is taking place.] meeting the requirements of subparagraph (a)(2)(B) of this section;

(3) A container equipped with a [“]vapor recovery system[” which collects all volatile organic compound vapors discharged from the container and which processes such vapors to reduce their] that reduces VOC emissions by at least 95 per cent by weight[.]; or

(4) A container having other equipment of [equal] equivalent efficiency [for the purpose of “air pollution” control as required by subdivision (3) of this subsection] may be approved by the [“Commissioner”] commissioner by permit or order.

Sec 5. Subsection (x)(12) of section 22a-174-20 of the Regulations of Connecticut State Agencies is amended to read as follows:

(12) Notice and retests.

Any evidence of leakage as described in this subsection shall [also] be treated as a malfunction of control equipment or methods as described in section 22a-174-7 of the Regulations of Connecticut State Agencies. [Corrective actions shall be taken in accordance with the provisions of subsection [22a-174-7(c).] A retest in accordance with the provisions of subdivision [(x)(8)]

(8) of [section 22a-174-20] this subsection [must] shall be performed [immediately] not more than two business days after all required repairs are complete.

Statement of purpose

The main purpose of this proposal is to enhance existing and add new requirements to control volatile organic compound (VOC) emissions from large aboveground storage tanks (AST). The requirements are consistent with those in other Northeastern states and generally conform to measures used by AST owners and operators as a means to limit product loss. The proposal will also create a small reduction in VOC emissions that will assist Connecticut to attain and maintain the federal national ambient air quality standard for ozone.

The Department of Energy and Environmental Protection (DEEP) currently regulates VOC emissions from storage and transfer of VOC-containing substances under section 22a-174-20 of the Regulations of Connecticut State Agencies. DEEP is proposing to remove the option of using an undomed floating roof tank to store VOC, clarify inspection requirements and add requirements for roof landing events and degassing and cleaning operations. (Section 1) For storage and transfer of VOC, DEEP is also proposing to include a lower vapor pressure floor for determining applicability and simplify that provision by basing it on absolute vapor pressure rather than actual vapor pressure. (Sections 1 and 2) To minimize fugitive emissions facility-wide, DEEP is proposing to require timely repair of leaks throughout the VOC storage and transfer facility. (Section 3) In addition, DEEP is proposing to revise the floating roof requirements for volatile organic compound and water separators to be consistent with the floating roof requirements for storage tanks. (Section 4)

Minor revisions are proposed to the leak control provisions for synthetic organic chemical and polymer manufacturing equipment by removing an outdated regulatory reference and clarifying the time limit for retesting. (Section 5)

The proposal has no legal impact beyond the direct impact on operations of the owners and operators of equipment subject to the revised requirements.

Attachment 3

Final Text of the Proposal, Based on Recommendations in the Hearing Officer's Report

Section 1. Subsection (a) of section 22a-174-20 of the Regulations of Connecticut State Agencies is amended to read as follows:

Sec. 22a-174-20. Control of organic compound emissions

(a) Storage of [“]volatile organic compounds[”] and restrictions for the Reid [Vapor Pressure] vapor pressure of gasoline.

[(a)](1) Definitions. For the purposes of this subsection and subsections (b) and (c) of this section:

(R) “Aboveground” means located on or above the surface of the ground, partially buried, bunkered or located in a subterranean vault;

(S) “Approved control system” means, a vapor balance system or a vapor recovery system[.];

(T) “Degassing” means the process of removing organic vapors from a storage tank in preparation for human entry;

(U) “Delivery vehicle” means a tank truck, tank-equipped trailer, railroad tank car, or other [“]mobile source[”] equipped with a storage [“]tank[”] used for the transportation of gasoline from [“]sources[”] of supply to any stationary storage [“]tank[.”];

(V) “Dispensing facility” means any site where gasoline is delivered to motor vehicles other than agricultural vehicles from any stationary storage [“]tank[”] with a capacity of 250 gallons or more[.];

(W) “Floating roof” means a movable roof in a storage vessel consisting of a floating deck resting on the surface of the liquid contents, a continuous seal supported against the inner surface of the tank shell, and an envelope closing the gap between the floating deck and the seal. The entire deck, seal and envelope combination is free to rise and fall with the surface of the liquid during filling and emptying of the storage vessel;

(X) “Gasoline” means any petroleum distillate or petroleum distillate and alcohol blend [having a reid vapor pressure of four pounds or greater] commercially known or sold as “gasoline” and commonly used as [a motor vehicle] an internal combustion engine fuel[.];

(Y) “Gasoline storage tank farm” means a [“premise”] premises with any individual [“]gasoline[”] storage [“]tank[”] with a capacity equal to or greater than forty thousand (40,000) gallons[.];

(Z) "Leak-free" means a condition that exists when the reading on a portable hydrocarbon analyzer is less than 500 ppm, expressed as methane, above background, measured using EPA Method 21, as identified in 40 CFR Part 60, Appendix A, Determination of Volatile Organic Compounds Leaks;

(AA) "Loading facility" means any combination of equipment located on a premises and used to load or unload any VOC with a vapor pressure of 0.75 pounds per square inch or greater under standard conditions;

(BB) "Reid [Vapor Pressure] vapor pressure" or "RVP" means the vapor pressure of a liquid in pounds per square inch absolute at one hundred (100) degrees fahrenheit as determined by American Society for Testing and Materials method [D323-82 "Standard Method for Vapor Pressure of Petroleum Products (Reid Method).] D5191-07 "Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method);"

(CC) "Roof landing" means the reduction of the liquid level in a floating roof tank so that the floating roof is no longer floating on the surface of the stored liquid but is resting on its legs or is supported from above by cables or hangers;

(DD) "Storage tank" means any tank, reservoir or vessel that is a container for liquids or gases, wherein:

(i) No manufacturing process, or part thereof, other than filling or emptying takes place, and

(ii) The only treatment carried out is treatment necessary to prevent change from occurring in the physical condition or chemical properties of the liquids or gases deposited into the container. Such treatment may include, but is not limited to, recirculating, agitating, maintaining the temperature of the stored liquids or gases, replacing air in the vapor space above the stored liquids or gases with an inert gas to inhibit the occurrence of a chemical reaction or adding a biocide to prevent microbial growth;

(EE) "Throughput" means the number of gallons delivered through all equipment at a dispensing facility or a loading facility over a specified time interval[.];

(FF) "Underground" means "underground" as defined in section 22a-449(d)-1(a)(2) of the Regulations of Connecticut State Agencies;

(GG) "Vapor balance system" means a combination of pipes or hoses [which] that creates a closed connection between the vapor spaces of an unloading ["]tank["] and receiving ["]tank["] such that vapors displaced from the receiving ["]tank["] are transferred to the ["]tank["] being unloaded and for which the vapor space connections on the unloading tank, the receiving tank and the pipes or hoses used are equipped with fittings [which] that are vapor-tight and [which] will automatically and immediately close upon disconnection so as to prevent the release of vapors. [The complete system as a whole and not just the individual components shall have been tested and approved by a nationally recognized testing laboratory.];

(HH) "Vapor recovery system" means a device or system [of devices with attendant valves, fittings, piping, and other appurtenances incorporating a means for the incineration of vapors or the liquefaction of vapors by absorption, adsorption, condensation or other means. The complete system as a whole and not just the individual components shall have been tested and approved by a nationally recognized testing laboratory.] that collects vapors to prevent release into the atmosphere. Collected vapors are recovered for use or destroyed; and

(II) "Vapor-tight" means not capable of allowing the passage of gases at the pressures encountered.

[(a)(2) No "person" shall place, store or hold in any stationary "tank" reservoir or other container of more than 40,000 gallons capacity any "volatile organic compound" with a vapor pressure of 1.5 pounds per square inch absolute or greater under actual storage conditions unless the "tank," reservoir or other container is a pressure "tank" capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the atmosphere or is designed, and equipped, with one of the vapor loss control devices listed in subparagraphs (A) through (D) below. If the control devices specified in subparagraphs 22a-174- 20(a)(2)(A) or (a)(2)(D) are used to comply with the requirements of this subdivision, then the requirements of subdivision 22a-174-20(a)(8) must also be met.]

(2) No owner or operator shall place, store or hold in any aboveground storage tank of 40,000 gallons (150,000 liters) capacity or greater any VOC with a vapor pressure of 0.75 pounds per square inch or greater under standard conditions unless the tank is designed and equipped with a vapor loss control device identified in either subparagraph (A), (B), (C) or (D) of this subdivision.

(A) The tank is a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the atmosphere;

[(A)](B) [A] The tank is equipped with a fixed roof and a floating roof[, consisting of a pontoon type, double deck type roof or internal floating cover, which will rest] that rests on the surface of the liquid contents and [be] is equipped with a closure seal or seals to close the space between the roof edge and ["]tank["] wall. This control equipment is not permitted if the ["volatile organic compound"] VOC has a vapor pressure of 11.0 pounds per square inch absolute (568 mm[.] Hg)[,] or greater under [actual storage] standard conditions. [All "tank" gauging or sampling devices must be gas-tight except when "tank" gauging or sampling is taking place.] The owner or operator shall operate and maintain such a tank to ensure that:

(i) There are no visible holes, tears or other openings in the seal or any seal fabric or materials,

(ii) All openings except stub drains are equipped with covers, lids or seals such that:

(I) The cover, lid or seal is in the closed position at all times except when in actual use,

(II) Automatic bleeder vents are closed at all times except when the roof is being floated off or being landed on the roof leg supports, and

(III) Rim vents, if provided, are set to open to the manufacturer's recommended setting when the roof is floated off the roof leg supports or cables,

(iii) All tank gauging and sampling devices are vapor-tight except when tank gauging or sampling is taking place, and

(iv) No liquid accumulates on the top of the floating roof;

[(B)](C) [A] The tank is equipped with a fixed roof and a ["]vapor recovery system[" which collects all volatile organic compound vapors and gases discharged from the tank and a vapor return or disposal system which] that is designed and operated to [process such vapors so as to] reduce [their emission] emissions of VOC to the atmosphere by at least 95 percent by weight. An owner or operator limiting vapor loss according to this subparagraph shall perform the following actions no later than ten years after the effective date of this subsection if the tank is in existence prior to the effective date of this subsection or by the initial fill date if a tank is constructed on or after the effective date of this subsection:

(i) Equip any gauging or sampling device on the tank with a leak-free cover that shall be closed at all times, with no visible gaps, except during gauging or sampling,

(ii) Maintain the fixed roof in a leak-free condition with no holes, tears or uncovered openings, and

(iii) Install and maintain each roof opening in a leak-free condition at all times except when the cover is open for access or when a vent is required to be open to relieve excess pressure or vacuum in accordance with the manufacturer's design, or

(iv) Once per month, demonstrate compliance with this subsection by inspecting the fittings located on the roof, piping, pressure relief valves and all other valves to ensure they are leak-free using EPA Method 21 or using another method approved by the commissioner and the Administrator; or

[(C)](D) [Other] The tank is equipped with other equipment or means of air pollution control with an efficiency equal to or greater than that required under subparagraph [22a-174-20(a)(2)(B)] (C) of this subdivision [for purposes of "air pollution" control as may be] that is approved by the ["Commissioner"]

commissioner [by] in a permit or order, where such permit or order has been approved by the Administrator.

[(D) On or after June 1, 1985 a floating roof, consisting of a pontoon type, double deck type roof or external floating cover, which will rest on the surface of the liquid contents and be equipped with primary and secondary closure seals to close the space between the roof edge and the tank wall. This control equipment is not permitted if the volatile organic compound has a vapor pressure of 11.0 pounds per square inch absolute (568 mm. Hg), or greater under actual storage conditions. All tank gauging or sampling devices must be gas-tight except when tank gauging or sampling is taking place. The owner or operator of any tank subject to this provision shall ensure that:

(i) Any seal is intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall;

(ii) The total area of gaps, determined in accordance with the requirements of subdivision 22a-174-20(a)(9), exceeding 0.125 inches in width between the secondary closure seal and the tank wall does not exceed 1.0 square inch per foot of tank diameter;

(iii) A secondary closure seal gap measurement as specified in (ii) above is made annually;

(iv) A visual inspection of the secondary closure seal is conducted semi-annually;

(v) Any emergency roof drain is provided with a slotted fabric cover which covers at least ninety percent (90%) of the area opening.]

(3) An owner or operator limiting vapor loss according to subdivision (2)(B) of this subsection shall conduct inspections as follows:

(A) Once per month visually inspect the floating roof deck, deck fittings and rim seal system through the roof hatches of the fixed roof to determine compliance with the requirements of subdivision (2)(B) of this subsection; and

(B) Whenever the tank is emptied and degassed, but no less than once every 10 years, conduct an inspection from within the tank by:

(i) Visually inspecting the floating roof deck, deck fittings and rim seal system to determine compliance with the requirements of subdivision (2)(B) of this subsection and ensure that the seal between the floating roof and the tank wall is uniform, and

(ii) Physically measuring gaps between any deck fitting gasket, seal or wiper and any surface that it is intended to seal. Gaps shall not exceed 0.125 inches.

(C) The inspection specified in subparagraph (B) of this subdivision may be performed entirely from the top side of the floating roof as long as there is visual access to all deck components specified in subdivision (2)(B) of this subsection.

(4) For any tank subject to subdivision (2) of this subsection, if any piping, valves, vents, seals, gaskets or covers of roof openings are found to have defects or visible gaps or the VOC control requirements of this subsection are not met, the owner or operator shall:

(A) If the tank is not storing liquid, complete repairs or replacements prior to filling the tank;

(B) If the tank is storing liquid, complete repairs or replacements or remove the tank from service within 45 days after discovery of the defect or visible gap. If the owner or operator anticipates that a repair or replacement cannot be completed or the tank cannot be emptied within 45 days, the owner or operator shall notify the commissioner prior to the end of the 45-day period. The owner or operator shall make repairs or completely empty the tank as soon as possible; and

(C) Any evidence of leakage as described in this subsection shall also be treated as a malfunction of control equipment as described in section 22a-174-7 of the Regulations of Connecticut State Agencies. An inspection in accordance with the provisions of this subdivision (3) if this subsection shall be performed immediately after all required repairs are complete.

[(a)(3)](5) No [“]person[”] shall place, store, or hold in any stationary storage vessel of more than 250-gallon (950 liter) capacity any [“volatile organic compound”] VOC with a vapor pressure of [1.5] 0.75 pounds per square inch or greater under [actual storage] standard conditions unless such vessel is equipped with a permanent [“]submerged fill pipe[” with a discharge point eighteen (18) inches or less from the bottom of the storage vessel] or is a pressure [“]tank[”] as described in subdivision [22a-174-20(a)(2)] (2)(A) of this subsection. Submerged fill pipes installed on or prior to the effective date of this subsection shall have a discharge point no more than 18 inches from the bottom of the storage tank or be compliant with the requirements of 40 CFR 63 Subpart CCCCCC. Submerged fill pipes installed after the effective date of this subsection shall have a discharge point no more than six inches from the bottom of the storage tank.

[(a)(4)](6) The provisions of subdivision [22a-174-20(a)(3)] (5) of this subsection shall not apply to the following:

(A) [loading] Loading of [“volatile organic compounds”] VOC into any storage vessel having a capacity of less than one-thousand (1,000) gallons [which was] installed prior to June 1, 1972[,];

(B) [nor to any] Any underground storage vessel installed prior to June 1, 1972, where the fill pipe between the fill connection and the storage vessel is an [“]offset fill pipe[.”]; or

(C) Any aboveground storage tank equipped with a floating roof.

(7) The external surfaces of any storage tank containing VOC with a vapor pressure of 0.75 pounds per square inch or greater under standard conditions that has a maximum capacity of 2,000 gallons (7,570 liters) or greater and is exposed to the rays of the sun shall be either mill-finished aluminum or painted and maintained white upon the next painting of the tank, or upon

being returned to service after being out of service for the first time after the effective date of this subsection, whichever is sooner, and no less than 10 years after the effective date of this subsection, except the requirement to use mill-finished aluminum or white paint shall not apply to words and logograms applied to the external surface of the storage tank for purposes of identification provided such symbols do not cover more than 20 percent of the external surface area of the tank's sides and top or more than 200 square feet (18.6 square meters), whichever is less.

(8) When performing a roof landing of a floating roof tank, the owner or operator of any tank shall:

(A) When the roof is resting on its leg supports or suspended by cables or hangers, empty and refill the tank as a continuous process; and

(B) After the tank is degassed for the first time after the effective date of this subsection, any in-service roof landing shall be with the landed height of the floating roof at its minimum setting.

(9) An owner or operator of an aboveground storage tank shall perform degassing and cleaning as set out in this subdivision.

(A) Beginning with the first June 1 after the effective date of this subsection, an owner or operator shall not perform degassing of any aboveground storage tank subject to subdivision (2) of this subsection during the period from June 1 through August 31 of any calendar year, except as provided in subparagraph (B) of this subdivision;

(B) Notwithstanding subparagraph (A) of this subdivision, an owner or operator may degas an aboveground storage tank at any time for the purpose of performing a repair that is necessary for safe and proper function of the tank. An owner or operator shall notify the commissioner when a tank is emptied and degassed under this subparagraph within 72 hours of completing the degassing and repair. Such notification shall be submitted to the Compliance Assistance and Coordination Unit of the Bureau of Air Management and shall include the following information:

(vii) Identification of the facility and the tank degassed,

(viii) Identification of the VOC stored,

(ix) An explanation of the need to degas the tank during the period from June 1 through August 31,

(x) The date the owner or operator determined that degassing and repair would be necessary,

(xi) The dates that degassing commenced and was completed,

(xii) The date that inspection, repair and refilling was or is anticipated to be completed; and

(C) An owner or operator shall clean an aboveground storage tank subject to subdivision (2) of this subsection using one or more of the following methods:

(i) Using any of the following cleaning agents:

(I) Diesel fuel,

(II) A solvent with an initial boiling point of greater than 302 degrees Fahrenheit,

(III) A solvent with a vapor pressure less than 0.5 pounds per square inch,

(IV) A solvent with 50 grams per liter VOC content or less, or

(V) Another cleaning agent approved by the commissioner and the Administrator, or

(ii) Steam cleaning.

(10) Records.

(A) An owner or operator shall maintain records including, at a minimum, the information described in subparagraph (B) of this subdivision. All such records shall be:

(i) Made available to the commissioner to inspect and copy upon request, and

(ii) Maintained for five years from the date such record is created.

(B) An owner or operator shall maintain records of the following information:

(i) For a tank equipped with a vapor loss control device specified in subdivision (2) of this subsection:

(I) Type of VOC stored, vapor pressure and monthly throughput,

(II) A Material Safety Data Sheet or Environmental Data Sheet for each VOC stored, and

(III) Records of the inspections conducted under subdivision (3) of this subsection including, but not limited to, date of the inspection, results and corrective actions taken, if applicable,

(ii) Documentation of control device efficiency and capture efficiency, if applicable, using an applicable EPA reference method or alternate method as approved by the commissioner and the Administrator,

(iii) Date and type of maintenance performed on air pollution control equipment, if applicable,

(iv) Documentation of any leak detected pursuant to subdivision (4) of this subsection, including, but not limited to, the date the leak was detected, location of the leak, type of repair made and the date of repair and explanation of the reason for delaying repair, if applicable,

(v) For each floating roof landing event, the tank contents before landing and after refilling, landed height of the floating roof, height of any liquid remaining in the bottom of the tank after landing, duration of landing and landing emissions calculated using AP-42 Chapter 7 methodology,

(vi) Dates of all tank degassing activities performed pursuant to subparagraphs (A) or (B) of subdivision (9) of this subsection,

(vii) Date, cleaning method and cleaning agents used for any cleaning performed pursuant to subparagraph (C) of subdivision (9) of this subsection, and

(viii) Any approval by the commissioner or Administrator issued pursuant to this subsection.

[(a)(5)](11) Between May 1 and September 15 the owner or ["]operator["] of any ["]gasoline storage tank farm["] shall not offer for sale, sell or deliver to any ["]dispensing facility["] in Connecticut ["]gasoline["] with a ["]Reid Vapor Pressure["] in excess of 9.0 pounds per square inch.

[(a)(6)](12) In addition to the requirements of section 22a-174-4 of the Regulations of Connecticut State Agencies, the ["Commissioner"] commissioner may by permit or order require the owner or ["]operator["] of any ["]gasoline storage tank farm["] to provide records of the analysis of ["]gasoline["] samples to determine compliance with the provisions of subdivision [22a-174-20(a)(5)] (11) of this subsection.

[(a)(7) Any "person" who samples or tests "gasoline" for the purposes of determining compliance with subdivision 22a-174-20(a)(5) shall use the following American Society for Testing and Materials (ASTM) test methods:

(A) ASTM Method D323-82, "Standard Method for Vapor Pressure of Petroleum Products (Reid Method)";

(B) ASTM Method D4057-81, "Standard Practice for Sampling of Petroleum and Petroleum Products"; or

(C) ASTM Method D270 "Standard Method of Sampling of Petroleum and Petroleum Products."

(a)(8) The owner or operator of any "tank" which uses the control devices specified in subparagraphs 22a-174-20(a)(2)(A) or (a)(2)(D) shall ensure that such "tank" meets the requirements of subparagraphs (A) through (F) of this subdivision.

(A) There are no visible holes, tears or other openings in the seal or any seal fabric or materials.

(B) All openings except stub drains are equipped with covers, lids or seals such that:

(i) the cover, lid or seal is in the closed position at all times except in actual use; and

(ii) automatic bleeder vents are closed at all times except when the roof is being floated off or being landed on the roof leg supports; and

(iii) rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

(C) Routine inspections are conducted through roof hatches once per month.

(D) A complete inspection of cover and seal is conducted whenever the "tank" is emptied for non-operational reasons but in any event at least once per year; and

(E) Records of the average monthly storage temperature, true vapor pressure, monthly throughput and type of volatile organic compounds stored are maintained and kept for a minimum of two (2) years after such record is made.

(F) Records of the results of the inspections conducted under subparagraphs (C) and (D) of this subdivision are maintained and kept for a minimum of two (2) years after such record is made.

(a)(9) Compliance with the requirements regarding the total area of gaps under subparagraph 22a-174-20(a)(2)(D) shall be determined by physically measuring the length and width of all gaps around the entire circumference of the secondary seal in each place where a O.32 cm (1/8 in.) uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and the tank wall and summing the area of the individual gaps. Any person who proposes to conduct this test shall notify the Department's Air Compliance Unit not less than thirty (30) days before the test so the Department may, at its option, observe the test.

(a)(10) The owner or operator of any tank with a capacity in excess of 40,000 gallons and which is equipped with an external floating roof shall maintain records of the average monthly storage temperature, the type of liquid stored and its vapor pressure, for any "volatile organic compound" with a vapor pressure under actual storage conditions which is greater than 1.0 pounds per square inch but less than 1.5 pounds per square inch.]

(13) Samples to be analyzed for RVP shall be collected and handled according to the applicable procedures in American Society for Testing and Materials method D 5842–95(2000), "Standard Practice for Sampling and Handling of Fuels for Volatility Measurement."

(14) RVP shall be determined using American Society for Testing and Materials method D5191-07 (2007), except that the following correlation equation shall be used:

RVP psi = (0.956 * X) − 0.347.

Sec 2. Subdivisions (1) through (4) of subsection (b) of section 22a-174-20 of the Regulations of Connecticut State Agencies are amended to read as follows:

(1) [Additional definitions. For the purposes of this subsection the following definition shall apply:

"Loading facility" means any aggregation or combination of equipment located on a premises and used to load or unload any volatile organic compound with a vapor pressure of 1.5 pounds per square inch or greater under actual storage conditions.] Reserved.

(2) No person shall load or permit the loading of any [volatile organic compound] VOC with a vapor pressure of [1.5] 0.75 pounds per square inch or greater under [actual storage] standard conditions into any delivery vehicle from any loading facility with a throughput of 10,000 gallons or more in any one day unless such loading facility is equipped with a vapor collection and [disposal] vapor recovery system or its equivalent, properly installed, in good working order, and in operation, and:

(A) [the] The vapors discharged from the delivery vehicle during loading are processed by a vapor recovery system; and

(B) [the] The amount of [volatile organic compounds] VOCs released to the ambient air is less than 80 milligrams per liter of liquid loaded over a six (6) hour period. To determine compliance with this requirement the reference methods and test procedures found in [Title] 40 [Code of Federal Regulations Part] CFR 60.503(a) and [Part] 60.503(c), respectively, shall be used.

(3) No person shall load or permit the loading of any [volatile organic compounds] VOC with a vapor pressure of [1.5] 0.75 pounds per square inch or greater under [actual storage] standard conditions into any delivery vehicle having a capacity in excess of 200 gallons (760 liters) from any loading facility with a throughput of 10,000 gallons or more in any one day unless such loading facility is equipped with a loading arm with a vapor collection adaptor, pneumatic, hydraulic, or other mechanical means to force a vapor-tight seal between the adaptor and the hatch. A means shall be provided to prevent liquid organic compounds drainage from the loading device when it is removed from the hatch of any delivery vehicle, or to accomplish complete drainage before such removal. When loading is effected through means other than hatches, all loading and vapor lines shall be equipped with fittings [which] that make vapor-tight connections and [which] close automatically when disconnected.

(4) Subdivisions (2) and (3) of this subsection shall apply only to the loading of [volatile organic compounds] VOC with a vapor pressure of [1.5] 0.75 pounds per square inch or greater under [actual storage] standard conditions at a facility from which at least 10,000 gallons of such organic compounds are loaded in any one day. The applicability of subdivisions (2) and (3) of this subsection shall be based upon a thirty day rolling average, and once a loading facility exceeds this limit, the requirements of subdivisions (2) and (3) of this subsection shall [always] apply.

Sec 3. Subsection (b) of section 22a-174-20 of the Regulations of Connecticut State Agencies is amended by adding subdivision (17):

(NEW)

(17) The owner or operator of a loading facility with a throughput of 4,000 gallons or more in any day shall not cause, allow or permit leakage from any equipment in VOC service, including

but not limited to pumps, valves and compressors. The owner or operator of any equipment in VOC service that is leaking as determined by sight, smell, sound or measurement of VOC in excess of 5000 parts per million shall repair such leak no later than fifteen days after detection. A request to delay a repair of a leak may be made to the commissioner and the Administrator in writing if the repair is infeasible for technical or safety reasons. Such a request shall be submitted no later than 15 days after detection of the leak.

Sec 4. Subsection (c) of section 22a-174-20 of the Regulations of Connecticut State Agencies is amended to read as follows:

(c) ["]Volatile organic compound[" /] and water separation. No ["person"] owner or operator shall use any compartment of any single or multiple compartment ["]volatile organic compound["/ "] and waste water separator[" which] that receives effluent water containing 200 gallons (760 liters) a day or more of any ["volatile organic compound"] VOC with a vapor pressure of 1.5 pounds per square inch or more from any equipment processing, refining, treating, storing, or handling ["volatile organic compounds"] VOC unless such compartment is equipped with one or more of the following vapor loss control devices, properly installed, in good working order, and in operation:

(1) A container having all openings sealed and totally enclosing the liquid contents. All gauging and sampling devices shall be [gas-tight] vapor-tight except when gauging or sampling is taking place[.];

(2) A container equipped with a floating roof[, consisting of a pontoon type, double deck type roof, or internal floating cover, which will rest] that rests on the surface of the contents and [be] is equipped with a closure seal or seals to close the space between the roof edge and container wall. All gauging and sampling devices shall be [gas tight] vapor-tight except when gauging or sampling is taking place[.];

(3) A container equipped with a ["]vapor recovery system[" which collects all volatile organic compound vapors discharged from the container and which processes such vapors to reduce their] that reduces VOC emissions by at least 95 per cent by weight[.]; or

(4) A container having other equipment of [equal] equivalent efficiency [for the purpose of "air pollution" control as required by subdivision (3) of this subsection] may be approved by the ["Commissioner"] commissioner [by] in a permit or order, where such permit or order has been approved by the Administrator.

Sec 5. Subsection (x)(12) of section 22a-174-20 of the Regulations of Connecticut State Agencies is amended to read as follows:

(12) Notice and retests.

Any evidence of leakage as described in this subsection shall [also] be treated as a malfunction of control equipment or methods as described in section 22a-174-7 of the Regulations of Connecticut State Agencies. [Corrective actions shall be taken in accordance with the provisions of subsection [22a-174-7(c).] A retest in accordance with the provisions of subdivision [(x)(8)] (8) of [section 22a-174-20] this subsection [must] shall be performed [immediately] not more than two business days after all required repairs are complete.

Statement of purpose

The main purpose of this proposal is to update existing and add new requirements to control volatile organic compound (VOC) emissions from large aboveground storage tanks (AST). The requirements are consistent with those in other Northeastern states and generally conform to measures used by AST owners and operators to limit product loss. The proposal will also assist Connecticut in meeting the reasonably available control technology requirements necessary under the 2008 8-hour national ambient air quality standard for ozone.

The Department of Energy and Environmental Protection (DEEP) currently regulates VOC emissions from storage and transfer of VOC-containing substances through various provisions of section 22a-174-20 of the Regulations of Connecticut State Agencies. The main provisions of the proposal include: termination of the option of using an undomed floating roof tank to store VOC; clarification of the inspection requirements; and the addition of requirements for roof landing events and degassing and cleaning operations. (Section 1) For storage and transfer of VOC, DEEP is proposing to include a lower vapor pressure floor for determining applicability and simplify that provision by basing it on vapor pressure at standard conditions, a constant, rather than the actual vapor pressure that changes with ambient temperature. (Sections 1 and 2) To minimize fugitive emissions facility-wide, DEEP is proposing to require timely repair of leaks from loading facilities. (Section 3) In addition, DEEP is proposing to revise the floating roof requirements for VOC and water separators to clarify that roof designs are not limited to pontoon-type or double deck covers. (Section 4)

Minor revisions are proposed to the leak control provisions for synthetic organic chemical and polymer manufacturing equipment by removing an outdated regulatory reference and clarifying the time limit for retesting. (Section 5)

The proposal has no legal impact beyond the direct impact on operations of the owners and operators of equipment subject to the revised requirements.