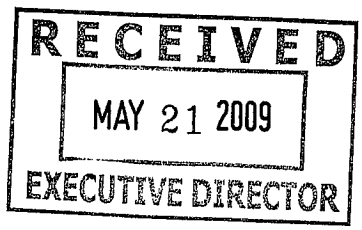
30523
DLS1
Russ K.

Henry T. Hilliard, Jr.
3100 Edloe Street Ste 350
Houston TX 77027

20 May, 2009



Mark R. Vickery, P.G. Executive Director
Texas Commission on Environmental Quality MC 109
P.O. Box 13087
Austin, TX 78711-3087

Re: Hilliard Petition for rulemaking #1, #3

TEXAS ADMINISTRATIVE CODE
TITLE 30 ENVIRONMENTAL QUALITY
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 115 CONTROL OF AIR POLLUTION FROM VOLATILE ORGANIC COMPOUNDS
SUBCHAPTER F MISCELLANEOUS INDUSTRIAL SOURCES
DIVISION 3 DEGASSING OR CLEANING OF STATIONARY, MARINE, AND TRANSPORT VESSELS

Dear Mr. Vickery,
In my petition for rulemaking submitted on April 14, 2009, I suggested changes to make the rule more effective. I noted that David C Schanbacher, P.E. in his posted response to my petition says I am making the rule less effective and will have the reverse effect of reducing emissions.

I therefore modified 2 of my petitions to language that addresses Mr. Schanbachers point. I do not want to make the rule ineffective. Copies enclosed.

Enclosed are my new Petition #1 and #3. Please substitute them in place of the existing.

If this is not possible I will formally refile. I will suggest that if Mr. Schanbacher or his office would have corresponded with me, we could have resolved it easily before this time.

In other points of his response, you should know that Mr. Schanbacher must have no idea where the tank degassing contractors connect to the tanks or how many tanks are being degassed in the State of Texas. This is fundamental information that he must know.

I believe there are over 4,000,000 pounds of VOC in these tanks and much of it is being released uncontrolled at ground level.

Very truly yours,

Henry Hilliard

#1 #3

Enclosure: Petition for Rulemaking #3 dated 20 May, 2009.

Henry T. Hilliard, Jr.
3100 Edloe Street Ste 350
Houston TX 77027

20 May, 2009

Mark R. Vickery, P.G. Executive Director
Texas Commission on Environmental Quality MC 109
P.O. Box 13087
Austin, TX 78711-3087

Petition for rulemaking #1

TEXAS ADMINISTRATIVE CODE
TITLE 30 ENVIRONMENTAL QUALITY
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 115 CONTROL OF AIR POLLUTION FROM VOLATILE ORGANIC COMPOUNDS SUBCHAPTER F MISCELLANEOUS INDUSTRIAL SOURCES
DIVISION 3 DEGASSING OR CLEANING OF STATIONARY, MARINE, AND TRANSPORT VESSELS

Dear Mr. Vickery,
Rule 115.542 says that the tank vapor space will have no more than 34,000 ppmv of residual vapor before it is disconnected from the degassing device. The intent of the rule is that the entire tank vapor space must meet that specification to reduce air emissions and pollution from tank degassing.

However, tanks subject to the rule above are not always being degassed to meet the intent of the regulation. Teresa Hurley said in a presentation on 15 May 2008 that VOC emissions that are measured do not match the Emission Inventory reports submitted to the State.

A condition called 'channeling' occurs during degassing and it causes a false indication that the tank is in compliance with the rules. The result is that VOC emissions are not being controlled. Because of the effect of channeling[1], clean air dilutes the tank vapors at the removal point, where sampling occurs. Hydrocarbon vapors are heavy and form a cloud inside the tank that may not be tested. The result is that the majority of the tank vapors are not being removed by the control device. Tank vapors follow the path of least resistance and they must be mixed for degassing to be effective. Continuance of the existing language allows undesirable concentrated tank vapors to be released into the air which endangers the health of residents and affects air quality.

I hereby petition that this be added to the above rule:
115.542 (a) (7) Tank vapors must be measured at multiple points around the tank at different levels to ensure that no one is more than 34,000 ppmv. Or the tank vapors can be mixed by circulation, recirculation or other means so that the tank vapors are uniform and 6 tests over a period of 30 minutes do not exceed 34,000 ppmv. During this 30 minute sampling period, the test must be taken at approximately 5 minute intervals of the circulated vapors. No vapor may be released from the tank that exceeds 34,000 ppmv. The circulation must be sufficient to eliminate stagnant vapors.
115.542 (b) (6) Tank vapors must be measured at multiple points around the tank at different levels to ensure that no one is more than 34,000 ppmv. Or the tank vapors can be mixed by circulation, recirculation or other means so that the tank vapors are uniform and 6 tests over a period of 30 minutes do not exceed 34,000 ppmv. During this 30 minute sampling period, the test must be taken at approximately 5 minute intervals of the circulated vapors. No vapor may be released from the tank that exceeds 34,000 ppmv. The circulation must be sufficient to eliminate stagnant vapors.

Very truly yours,
Henry Hilliard

1. Industrial Ventilation, A Manual of Recommended Practice 21st Edition, American Conference of Governmental Industrial Hygienists and also referenced by: "The Shipyard Competent Person Confined Space Safe Practices Training Workbook" published by the Division for Continuing Education, National Fire Protection Association, 1 Batterymarch Park, Quincy MA 02269

CC: Mark R. Vickery, P.G. Executive Director, TCEQ Commissioners: Buddy Garcia, Larry Soward, Bryan Shaw; Houston Mayor: Bill White, Russell Kimble, TCEQ

Henry T. Hilliard, Jr.
3100 Edloe Street Ste 350
Houston TX 77027
20 May, 2009

Mark R. Vickery, P.G. Executive Director
Texas Commission on Environmental Quality MC 109
P.O. Box 13087
Austin, TX 78711-3087

Petition for rulemaking #3

TEXAS ADMINISTRATIVE CODE
TITLE 30 ENVIRONMENTAL QUALITY
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 115 CONTROL OF AIR POLLUTION FROM VOLATILE ORGANIC COMPOUNDS SUBCHAPTER F MISCELLANEOUS INDUSTRIAL SOURCES
DIVISION 3 DEGASSING OR CLEANING OF STATIONARY, MARINE, AND TRANSPORT VESSELS

Dear Mr. Vickery,
RULE §115.542 contains these paragraphs regarding the vapor concentration inside the storage tank:

(a)(5) and (b)(6) After January 1, 2009, in the Houston/Galveston/Brazoria area, vapors must be routed to the control device until the VOC measured concentration before the inlet to the control device is less than 34,000 ppmv as methane or less than 50% of the lower explosive limit (LEL). After this condition has been satisfied, the storage tank or transport vessel may be vented to the atmosphere for the remainder of the degassing or cleaning process provided that the VOC concentration remains below 34,000 ppmv as methane or less than 50% of the LEL.

The intent of the rule is that the tank vapors must be at or under 34,000 ppmv but it is easily circumvented by connecting high up on the tank. It is well known that hydrocarbon vapors are heavier than air, so connecting high up on the tank side or on the roof avoids heavy vapors below the connection point. I believe this is a common practice because it is allowed under the existing rule.

I petition this rule be changed to read:

(a)(5) and (b)(6) After January 1, 2009, in the Houston/Galveston/Brazoria area, vapors must be routed to the control device until the VOC measured concentration before the inlet to the control device and throughout the tank is less than 34,000 ppmv as methane or less than 50% of the lower explosive limit (LEL). After this condition has been satisfied, the storage tank or transport vessel may be vented to the atmosphere for the remainder of the degassing or cleaning process provided that the VOC concentration remains below 34,000 ppmv as methane or less than 50% of the LEL. Released vapor must be tested immediately upon opening of the tank and continue on 5 minute intervals for 30 minutes to ensure that the concentration of vapor released is no more than 34,000 ppmv. The tank must be secured and the control device restarted if the vapor concentration is greater than 34,000 ppmv.

Commercially speaking it is not difficult to get the entire tank vapor down to 34,000 ppmv. Continuance of the existing language allows undesirable concentrated tank vapors to be released into the air which endangers the health of residents and affects air quality.

My personal direct experience with local tanks is that there may easily be 2,000 pounds of VOC liquid in each one, so the great number of tank degassing events (believed to be over 2,000 annually) may put over 2,000 tons of VOC vapor into the air in the air around Houston alone.

Very truly yours,

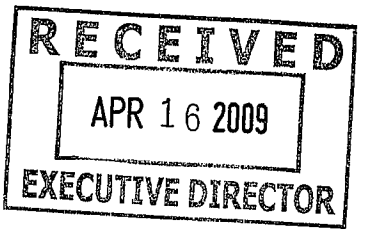
Henry Hilliard

CC: Mark R. Vickery, P.G. Executive Director, TCEQ Commissioners: Buddy Garcia, Larry Soward, Bryan Shaw; Houston Mayor: Bill White, Russell Kimble, TCEQ

30376
OLS

Henry T. Hilliard, Jr.
3100 Edloe Street Ste 350
Houston TX 77027

2 April, 2009



Mark R. Vickery, P.G. Executive Director
Texas Commission on Environmental Quality MC 109
P.O. Box 13087
Austin, TX 78711-3087

Petition for rulemaking #1

TEXAS ADMINISTRATIVE CODE
TITLE 30 ENVIRONMENTAL QUALITY
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 115 CONTROL OF AIR POLLUTION FROM VOLATILE ORGANIC COMPOUNDS SUBCHAPTER F MISCELLANEOUS INDUSTRIAL SOURCES
DIVISION 3 DEGASSING OR CLEANING OF STATIONARY, MARINE, AND TRANSPORT VESSELS

Dear Mr. Vickery,
Rule 115.542 says that the tank vapor space will have no more than 34,000 ppmv of residual vapor before it is disconnected from the degassing device. The intent of the rule is that the entire tank vapor space must meet that specification to reduce air emissions and pollution from tank degassing.

However, tanks subject to the rule above are not always being degassed to meet the intent of the regulation. Teresa Hurley said in a presentation on 15 May 2008 that VOC emissions that are measured do not match the Emission Inventory reports submitted to the State.

A condition called 'channeling' occurs during degassing and it causes a false indication that the tank is in compliance with the rules. The result is that VOC emissions are not being controlled. Because of the effect of channeling[1], clean air dilutes the tank vapors at the removal point, where sampling occurs. Hydrocarbon vapors are heavy and form a cloud inside the tank that may not be tested. The result is that the majority of the tank vapors are not being removed by the control device. Tank vapors follow the path of least resistance and they must be mixed for degassing to be effective. Continuance of the existing language allows undesirable concentrated tank vapors to be released into the air which endangers the health of residents and affects air quality.

I hereby petition that this be added to the above rule:
115.542 (a) (7) Tank vapors must be measured at multiple points around the tank at different levels to ensure that no one is more than 34,000 ppmv. Or the tank vapors can be mixed by circulation, recirculation or other means so that the tank vapors are uniform and 6 tests over a period of 30 minutes do not exceed 34,000 ppmv. Test must be taken at approximately 5 minute intervals during the circulation. No vapor may be released from the tank that exceeds 34,000 ppmv.
115.542 (b) (6) Tank vapors must be measured at multiple points around the tank at different levels to ensure that no one is more than 34,000 ppmv. Or the tank vapors can be mixed by circulation, recirculation or other means so that the tank vapors are uniform and 6 tests over a period of 30 minutes do not exceed 34,000 ppmv. Test must be taken at approximately 5 minute intervals during the circulation. No vapor may be released from the tank that exceeds 34,000 ppmv.

Very truly yours,

Henry Hilliard

1. Industrial Ventilation, A Manual of Recommended Practice 21st Edition, American Conference of Governmental Industrial Hygienists and also referenced by: "The Shipyard Competent Person Confined Space Safe Practices Training Workbook" published by the Division for Continuing Education, National Fire Protection Association, 1 Batterymarch Park, Quincy MA 02269

CC: Mark R. Vickery, P.G. Executive Director, TCEQ Commissioners: Buddy Garcia, Larry Soward, Bryan Shaw; Houston Mayor: Bill White, Russell Kimble, TCEQ

Henry T. Hilliard, Jr.
3100 Edloe Street Ste 350
Houston TX 77027

14 April, 2009

Mark R. Vickery, P.G. Executive Director
Texas Commission on Environmental Quality MC 109
P.O. Box 13087
Austin, TX 78711-3087

Petition for rulemaking #2

TEXAS ADMINISTRATIVE CODE
TITLE 30 ENVIRONMENTAL QUALITY
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 115 CONTROL OF AIR POLLUTION FROM VOLATILE ORGANIC COMPOUNDS
SUBCHAPTER F MISCELLANEOUS INDUSTRIAL SOURCES
DIVISION 3 DEGASSING OR CLEANING OF STATIONARY, MARINE, AND TRANSPORT VESSELS

Dear Mr. Vickery,
Rule 115.541 - 115.549 has no provision for notification to the Agency that a facility is going to perform vapor control, tank degassing or roof landing. The intent of the rule is that the tank is degassed to meet the specification in Rule 115.542, but if the Agency does not know when the vapor control operation is happening, it is impossible for them to send inspectors to observe or witness the event.

Knowing that the Agency has little or no chance of accidentally arriving on the scene at the correct moment to observe the degassing, the facility owner (or managers) may or may not follow the rules.

When tanks are degassed, vapors flowing to control devices take the path of least resistance, called channeling. The result is that vapors sampled for the purpose of identifying compliance may actually give a false indication that the tank is in compliance with the rules. Because of the effect of channeling[1], clean air may dilute the tank vapors at the removal point. Then sampling to confirm compliance with the rules is not representative of the actual tank contents and the vapor control is stopped prematurely. The result is that the majority of the tank vapors are not removed by the control device; instead the VOC is simply blown out with air blowers. Since the Agency is not notified, there is very likely no inspection and no oversight.

I hereby petition that this be added to the above rule:

115.544 (3) Except during an emergency, the Texas Commission on Environmental Quality shall be notified verbally or in writing at least 24 hours prior to starting any tank degassing operation of tanks subject to 115.541. Such notification shall include an identification and location of the tank(s) to be degassed and the air pollution control method to be employed. If a tank degassing operation was required due to an emergency, the TCEQ shall be notified as soon as reasonably possible but no later 96 hours after completion of the operation.

The tank owners always know in advance when the tanks will be taken out of service or the roof landed. Transfer of cargo is a planned event.

Very truly yours,
Henry Hilliard

1. Industrial Ventilation, A Manual of Recommended Practice 21st Edition, American Conference of Governmental Industrial Hygienists and also referenced by: "The Shipyard Competent Person Confined Space Safe Practices Training Workbook" published by the Division for Continuing Education, National Fire Protection Association, 1 Batterymarch Park, Quincy MA 02269

CC: Mark R. Vickery, P.G. Executive Director, TCEQ Commissioners: Buddy Garcia, Larry Soward, Bryan Shaw; Houston Mayor: Bill White, Russell Kimble, TCEQ

30356
OLS

Henry T. Hilliard, Jr.
3100 Edloe Street Ste 350
Houston TX 77027

9 April, 2009

Mark R. Vickery, P.G. Executive Director
Texas Commission on Environmental Quality MC 109
P.O. Box 13087
Austin, TX 78711-3087

Petition for rulemaking #3

Ref: TAC 30, Chapter 115.54, F Degassing or cleaning of stationary and transport vessels

Dear Mr. Vickery,
RULE §115.542 contains this language regarding the vapor concentration inside the storage tank:

(6) After January 1, 2009, in the Houston/Galveston/Brazoria area, vapors must be routed to the control device until the VOC measured concentration before the inlet to the control device is less than 34,000 ppmv as methane or less than 50% of the lower explosive limit (LEL). After this condition has been satisfied, the storage tank or transport vessel may be vented to the atmosphere for the remainder of the degassing or cleaning process provided that the VOC concentration remains below 34,000 ppmv as methane or less than 50% of the LEL.

The intent of the rule is that the tank vapors must be at or under 34,000 ppmv but it is easily circumvented by connecting high up on the tank. It is well known that hydrocarbon vapors are heavier than air, so connecting high up on the tank side or on the roof avoids heavy vapors below the connection point. I believe this is a common practice because it is allowed under the existing rule. This rule must be changed to read:

(6) After January 1, 2009, in the Houston/Galveston/Brazoria area, vapors must be routed to the control device until the VOC measured concentration ~~before the inlet to the control device~~ in the tank is less than 34,000 ppmv as methane or less than 50% of the lower explosive limit (LEL). After this condition has been satisfied, the storage tank or transport vessel may be vented to the atmosphere for the remainder of the degassing or cleaning process provided that the VOC concentration remains below 34,000 ppmv as methane or less than 50% of the LEL.

Commercially speaking it is not difficult to get the entire tank vapor down to 34,000 ppmv. Continuance of the existing language allows undesirable concentrated tank vapors to be released into the air which endangers the health of residents and affects air quality.

I hereby petition that text in the existing rule be changed to the suggested language as quickly as possible.

My personal direct experience with local tanks is that there may easily be 2,000 pounds of VOC liquid in each one, so the great number of tank degassing events (believed to be over 2,000 annually) may put over 2,000 tons of VOC vapor into the air in the air around Houston alone.

Very truly yours,

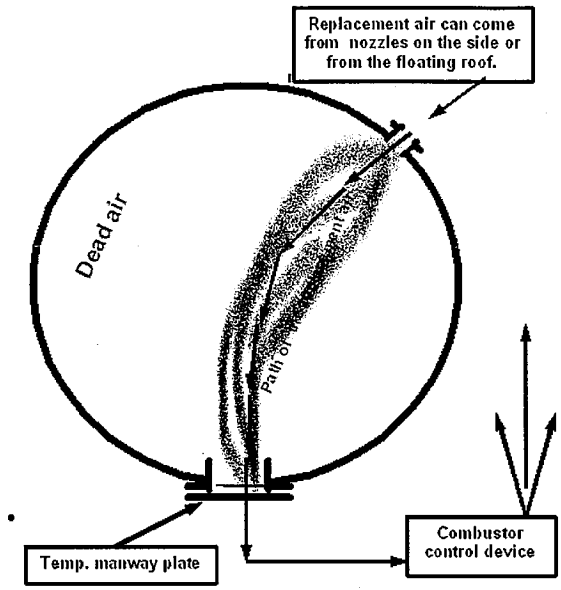
Henry Hilliard

CC: TCEQ Commissioners: Buddy Garcia, Larry Soward, Bryan Shaw; Houston Mayor: Bill White

Hilliard Emission Controls, Inc.
3100 Edloe Street Suite 350
Houston, TX 77027
888-621-3132 hank.hilliard@purgit.com

The problem of vapor channeling* and vapor clouds in tank degassing

The problem of channeling (looking down on the tank)



Storage Tank Detail of Flow Routes
Plan view
No scale

In Texas, the emission inventory declared by emission sources does not always reconcile with the amount of VOC measured in the air testing stations. The EI is low and the sampling stations are high. Part of the reason is uncontrolled emissions from tank degassing.
http://www.purgit.com/TCEQ_EI_report.html

Channeling of vapor inside tanks during degassing is a problem. Without mixing of the vapor inside the tank it is nearly impossible to de-gas the 'dead spots' in the vapor space.

Combustor systems pull air into the tank to replace the tank vapors they pull out. The replacement air comes in through vents on or around the roof and that air continues on the path of least resistance to the exit port.

The plan view diagram on the left represents channeling from a single inlet nozzle on a tank. This replacement air channels to the exit and that makes the vapor at the exit not representative of the vapor in the tank. When the vapor stream at the combustor is sampled, it shows a misrepresentation of the vapors in the tank. The testing will show lean vapors that do not reflect the concentrated vapors in other parts of the tank.

That results in premature opening of the tank, and that results in uncontrolled emissions. We believe that is one reason the air sampling in Texas does not match the emission inventory.

Almost all hydrocarbon vapors are heavier than air. That point is widely known and accepted. Heavy hydrocarbon vapors are present in the form of 'clouds' that lay on the floor inside storage tanks.

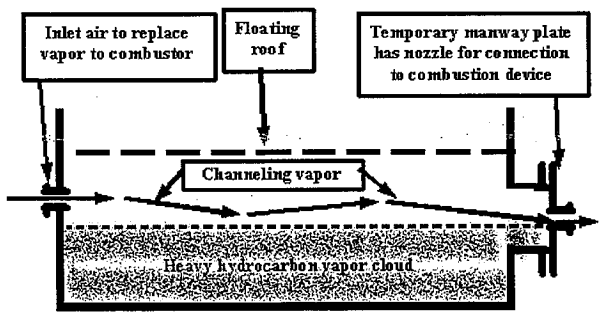
The clouds are the result of regeneration. Regeneration is the term that applies to the evaporation and development of the vapor cloud inside the tank.

When a combustion device is used for tank degassing, the heavy vapors below the exit port remain virtually untouched. The light replacement air takes the path of least resistance. The vapor cloud is hardly impacted when they remove tank vapors.

The result is that the tank is not adequately degassed because the main body of vapors is not controlled. The main body of vapors is not controlled because it is not tested. It is not tested because it is inaccessible to any system that does not mix the vapors.

The conclusion is that combustion is a poor technique for tank degassing.

The problem of vapor clouds (looking sideways on the tank)



Storage tank
Elevation view
No scale

* What is vapor channeling? The 21st Edition of INDUSTRIAL VENTILATION published by the American Conference of Governmental and Industrial Hygienists says that vapors flowing inside a tank can and do channel. That means that air streams do not move evenly through the tank pulling out stagnant vapor.

Henry T. Hilliard, Jr.
3100 Edloe Street Ste 350
Houston TX 77027

14 April, 2009

Mark R. Vickery, P.G. Executive Director
Texas Commission on Environmental Quality MC 109
P.O. Box 13087
Austin, TX 78711-3087

Petition for rulemaking #3

TEXAS ADMINISTRATIVE CODE
TITLE 30 ENVIRONMENTAL QUALITY
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 115 CONTROL OF AIR POLLUTION FROM VOLATILE ORGANIC COMPOUNDS SUBCHAPTER F MISCELLANEOUS INDUSTRIAL SOURCES
DIVISION 3 DEGASSING OR CLEANING OF STATIONARY, MARINE, AND TRANSPORT VESSELS

Dear Mr. Vickery,
RULE §115.542 contains these paragraphs regarding the vapor concentration inside the storage tank:

(a)(5) and (b)(6) After January 1, 2009, in the Houston/Galveston/Brazoria area, vapors must be routed to the control device until the VOC measured concentration before the inlet to the control device is less than 34,000 ppmv as methane or less than 50% of the lower explosive limit (LEL). After this condition has been satisfied, the storage tank or transport vessel may be vented to the atmosphere for the remainder of the degassing or cleaning process provided that the VOC concentration remains below 34,000 ppmv as methane or less than 50% of the LEL.

The intent of the rule is that the tank vapors must be at or under 34,000 ppmv but it is easily circumvented by connecting high up on the tank. It is well known that hydrocarbon vapors are heavier than air, so connecting high up on the tank side or on the roof avoids heavy vapors below the connection point. I believe this is a common practice because it is allowed under the existing rule.

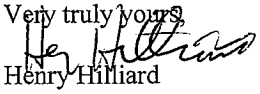
I petition this rule be changed to read:

(a)(5) and (b)(6) After January 1, 2009, in the Houston/Galveston/Brazoria area, vapors must be routed to the control device until the VOC measured concentration ~~before the inlet to the control device~~ in the tank is less than 34,000 ppmv as methane or less than 50% of the lower explosive limit (LEL). After this condition has been satisfied, the storage tank or transport vessel may be vented to the atmosphere for the remainder of the degassing or cleaning process provided that the VOC concentration remains below 34,000 ppmv as methane or less than 50% of the LEL. Released vapor must be tested immediately upon opening of the tank and continue on 5 minute intervals for 30 minutes to ensure that the concentration of vapor released is no more than 34,000 ppmv. The tank must be secured and the control device restarted if the vapor concentration is greater than 34,000.

Commercially speaking it is not difficult to get the entire tank vapor down to 34,000 ppmv. Continuance of the existing language allows undesirable concentrated tank vapors to be released into the air which endangers the health of residents and affects air quality.

My personal direct experience with local tanks is that there may easily be 2,000 pounds of VOC liquid in each one, so the great number of tank degassing events (believed to be over 2,000 annually) may put over 2,000 tons of VOC vapor into the air in the air around Houston alone.

Very truly yours,



Henry Hilliard

CC: Mark R. Vickery, P.G. Executive Director, TCEQ Commissioners: Buddy Garcia, Larry Soward, Bryan Shaw; Houston Mayor: Bill White, Russell Kimble, TCEQ