

# TCEQ Interoffice Memorandum

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**Date:** January 28, 2026

**Subject:** Health Effects Review of 2024 Ambient Air Network Monitoring Data in  
Region 12, Houston

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## Key Points

- Twenty-two out of 5,383,507 measured hourly concentrations (or approximately 0.00041%) exceeded a short-term health-based Air Monitoring Comparison Value (AMCV). A single hour level exceedance for benzene was measured at the Channelview Drive Water Tower site. Twenty-one hourly exceedances for cyclohexane were measured at the HRM 7 Baytown site.
- Five out of 5,383,507 measured hourly concentrations (or approximately 0.000093%) exceeded an odor-based AMCV. Accordingly, a few hourly levels (e.g., 1,3-butadiene; isoprene; and styrene) at three Region 12 sites could have resulted in the perception of odors if people were exposed. Assuming exposure, the monitored concentrations would not be expected to cause direct, short-term adverse health effects, and the infrequency and generally low magnitude of the exceedances are not indicative of persistent, strong odors with the potential to cause odor-related health effects (e.g., nausea, headache).
- All reported 30-minute rolling averages were below the level of the state 30-minute hydrogen sulfide (H<sub>2</sub>S) standard for residential areas (80 ppbv).
- Annual average concentrations for all chemicals and metals from 1-hour and 24-hour measurements were below their respective long-term AMCVs.

## Background

The primary purpose of this memorandum is to convey the Toxicology, Risk Assessment, and Research Division's (TD) evaluation of ambient air toxics sampling conducted at monitoring sites in Region 12-Houston during 2024. The TD reviewed summary results for volatile organic compounds (VOCs) from 24-hour canister samples, 1-hour automated gas-chromatography (autoGC) VOC samples, 8- and 24-hour carbonyl samples, 30-minute rolling averages of 5-minute hydrogen sulfide samples, and 24-hour metals samples from filters designed to collect particulate matter with an aerodynamic diameter of 2.5 microns or less (PM<sub>2.5</sub>).

Historically, this memorandum has evaluated data from the TCEQ and Enhanced Industry-

Sponsored Monitoring (EISM) sites, which are reported to TCEQ on a regular basis. Industry-sponsored air monitoring networks that are not routinely reported to TCEQ are also included. The TD requested these data from the respective industry groups and included them in our evaluation, as detailed below. Only summary data on high values and averages are provided for the Houston Regional Monitoring (HRM) 24-hour canister sites; the total number of 24-hour canister samples collected over the year is not known. Therefore, a qualifier of 'more than' is used before counts of measured concentrations that include these data. Except for lead, data for criteria pollutants (i.e., compounds having National Ambient Air Quality Standards [NAAQS]) were not evaluated for this memorandum. Appendix 1. Monitored Air Toxics in Region 12 contains the lists of the target analytes evaluated for this review.

Information regarding monitoring sites and target analyte data reviewed by the TD is presented in Table 1 and is summarized below.

- 24-hour canister VOC sampling at:
  - 9 TCEQ sites,
  - 6 HRM sites outside of the EISM sites, and
  - 3 Texas City/La Marque Community Air Monitoring Network (TCLAMN) sites.
- 24-hour carbonyl sampling at 2<sup>a</sup> sites.
- 8-hour carbonyl sampling at 1<sup>a</sup> site.
- 24-hour metals sampling at 3 sites.
- 1-hour autoGC VOC sampling at:
  - 10 TCEQ sites,
  - 7 EISM sites,
  - 1 TCLAMN site, and
  - 2 HRM sites.
- 5-minute hydrogen sulfide (H<sub>2</sub>S) sampling at:
  - 1 TCEQ site,
  - 3 EISM sites, and
  - 1 HRM site.

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<sup>a</sup> Carbonyl sampling is seasonal, depending on the site, for part of the year with durations of 8 or 24 hours.

**Table 1. Monitoring Sites Located in TCEQ Region 12**

County	EPA Site ID	Site Name and Location	Network	Monitored Compounds
Galveston	N/A	2nd Avenue Monitoring Station (29.386981, -94.91912)	TCLAMN <sup>b</sup>	VOC (autoGC; 24-hour canister, 1/12 days <sup>c</sup> )
Galveston	N/A	Avenue A Monitoring Station (29.37435, -94.96364)	TCLAMN	VOC (24-hour canister)
Harris	48-201-6000	<a href="#">Cesar Chavez</a> 4829A Galveston Rd	TCEQ	VOC (autoGC)
Harris	48-201-0026	<a href="#">Channelview</a> 1405 Sheldon Rd	TCEQ	VOC (autoGC)
Harris	48-201-0036	<a href="#">Channelview Drive Water Tower</a> 15913 Channelview Drive	TCEQ	VOC (autoGC)
Harris	48-201-1035	<a href="#">Clinton</a> 9525 ½ Clinton Dr	TCEQ	VOC (autoGC), Carbonyls <sup>d</sup> Metals (PM <sub>2.5</sub> )
Brazoria	48-039-1003	<a href="#">Clute</a> 426 Commerce St	TCEQ	VOC (24-hour canister)
Brazoria	48-039-1012	<a href="#">Freeport South Ave I</a> 207 South Avenue I	TCEQ	Metals (PM <sub>2.5</sub> )
Harris	48-201-0057	<a href="#">Galena Park</a> 1713 2 <sup>nd</sup> St	TCEQ	VOC (autoGC, 24-hour canister)
Harris	48-201-0055	<a href="#">Houston Bayland Park</a> <sup>e</sup> 6400 Bissonnet St	TCEQ	VOC (24-hour canister)

<sup>b</sup> TCLAMN – Texas City/La Marque Community Air Monitoring Network.

<sup>c</sup> The typical schedule for 24-hour canisters is to collect one 24-hour sample every six days. This sampler is collecting one 24-hour sample every twelve days.

<sup>d</sup> This carbonyl sampler collects seasonally. In 2024, one 24-hour sample was collected every six days from April through October. From January through March and November through December no samples were collected.

<sup>e</sup> This monitor collected data from January 1 to 31, 2024. This monitor was deactivated on February 1, 2024 and was relocated to the Houston East monitoring site.

County	EPA Site ID	Site Name and Location	Network	Monitored Compounds
Harris	48-201-1039	<a href="#">Houston Deer Park #2</a> <sup>f</sup> 4514 ½ Durant St	TCEQ	VOC (autoGC, 24-hour canister), Carbonyls <sup>g</sup> , Metals (PM <sub>2.5</sub> )
Harris	48-201-1034	<a href="#">Houston East</a> <sup>h</sup> 1262 ½ Mae Dr	TCEQ	VOC (24-hour canister)
Harris	48-201-0803	<a href="#">HRM #3 Haden Rd</a> 1504 ½ Haden Rd	TCEQ/EISM – HRM <sup>i</sup>	VOC (24-hour canister/ autoGC)
Harris	N/A	HRM 1 Central Street 1453-1479 Central Street, Houston	HRM	VOCs (24-hour canister)
Harris	N/A	HRM 4 Sheldon Rd 16028-16836 Miller Road 1, Houston	HRM	VOC (24-hour canister)
Harris	48-201-0807	<a href="#">HRM 7 Baytown</a> 4621-4639 W. Baker Rd	HRM	VOC (24-hour canister/ autoGC)
Harris	N/A	HRM 8 LaPorte 12500 B Bay Area Blvd, Pasadena	HRM	VOC (24-hour canister)
Chambers	N/A	HRM 10 Mont Belvieu 11610 Hatcherville Rd, Baytown	HRM	VOC (24-hour canister)
Chambers	N/A	HRM 11 E Baytown 7352 West Bay Exit	HRM	VOC (24-hour canister)
Harris	48-201-1614	<a href="#">HRM 16 Deer Park</a> 600-658 Luella Ave	HRM	VOC (autoGC), H <sub>2</sub> S
Brazoria	48-039-1016	<a href="#">Lake Jackson</a> 109-B Brazoria Hwy 332-W	EISM – FI Group <sup>j</sup>	VOC (autoGC)

<sup>f</sup> The current address for this monitoring site is 4413 Glenwood Ave; this monitor was relocated from 4514 ½ Durant St on May 30, 2025.

<sup>g</sup> This carbonyl sampler collects seasonally. In 2024, one 24-hour sample was collected every six days from April through May and September through October. From June through August, this sampler switched to a more intensive sampling schedule where it collected three 8-hour samples every three days. From January through March and November through December no samples were collected.

<sup>h</sup> This monitor was relocated from Houston Bayland Park and was activated on March 1, 2024.

<sup>i</sup> HRM – Houston Regional Monitoring.

<sup>j</sup> FI Group – Freeport Industry Group.

County	EPA Site ID	Site Name and Location	Network	Monitored Compounds
Harris	48-201-1015	<a href="#">Lynchburg Ferry</a> 4364 Independence Parkway South	TCEQ/EISM - HRM	VOC (24-hour canister/ autoGC)
Harris	48-201-0307	<a href="#">Manchester East Avenue N</a> 9415 East Avenue N	TCEQ	VOC (autoGC)
Harris	48-201-0069	<a href="#">Milby Park</a> 2201A Central St	TCEQ	VOC (autoGC)
Galveston	N/A	North Site (29.429228, -94.971503)	TCLAMN	VOC (24-hour canister, 1/12 days)
Brazoria	48-039-1607	<a href="#">Oyster Creek</a> 901 County Road 792	EISM - Freeport LNG	VOC (autoGC), H <sub>2</sub> S
Harris	48-201-1049	<a href="#">Pasadena Richey Elementary School</a> 610 2/3 South Richey St	TCEQ	VOC (autoGC)
Harris	48-201-0061	<a href="#">Shore Acres</a> 3903 ½ Old Hwy 146	TCEQ	VOC (24-hour canister)
Galveston	48-167-0056	<a href="#">Texas City 34th St</a> 2212 North 34th St	EISM - TCLAMN	VOC (autoGC)
Galveston	48-167-0005	<a href="#">Texas City Ball Park</a> 2516 ½ Texas Ave	TCEQ	H <sub>2</sub> S, VOC (24-hour canister)
Galveston	48-167-0615	<a href="#">Texas City BP 31st Street (Site 1)</a> 302 31st Street South	EISM – Marathon Petroleum Co.	H <sub>2</sub> S, 4 VOCs (SRIGC)
Galveston	48-167-0621	<a href="#">Texas City BP Logan Street (Site 3)</a> 303 Logan Street	EISM – Marathon Petroleum Co.	H <sub>2</sub> S, 4 VOCs (SRIGC)
Harris	48-201-0617	<a href="#">Wallisville Rd</a> 4727 Wallisville Rd	EISM - HRM	VOC (autoGC)

All data collected at TCEQ monitors are analyzed by the TCEQ laboratory and should meet a 75% data completeness objective. At EISM and industry network monitors, data are collected by a third-party contractor and should also meet a 75% data completeness objective. Data that do not meet a 75% completeness cannot be evaluated on a long-term basis. One-hour autoGC VOC, 30-minute H<sub>2</sub>S, as well as 8-hour carbonyl data were evaluated for potential acute health (e.g., irritation), odor, and vegetation concerns, as were any 24-hour sample results (e.g., VOCs, carbonyls, metals) that exceeded short-term AMCVs. Twenty-four-hour air samples collected

every 6<sup>th</sup> day on a yearly basis are designed to provide representative long-term average concentrations. To enable evaluation of 24-hour monitoring data more fully, TCEQ has developed 24-hour AMCVs for specific chemicals. As such, 24-hour sample results were compared to the available TCEQ 24-hour AMCVs for the following:

- 1,3-Butadiene
- 2,2-Dimethylbutane
- 2,3-Dimethylbutane
- 2-Methylpentane
- 3-Methylpentane
- Acrolein
- Aluminum
- Arsenic
- Benzene
- Cadmium
- Carbon tetrachloride
- Chromium
- Cobalt
- Crotonaldehyde
- Ethylene dibromide
- Ethylene dichloride
- Formaldehyde
- Manganese
- Molybdenum
- Nickel
- n-Hexane
- Vanadium

However, because short-term or peak concentrations may be significantly different than 24-hour sample concentrations, daily concentrations have limited use in evaluating the potential for more acute (e.g., 30-60 minute) health effects, unlike the shorter-term data reviewed herein (e.g., 1-hour autoGC data, 30-minute H<sub>2</sub>S data). The annual averages from 1-hour autoGC and 24-hour samples (VOCs, carbonyls, and metals) were evaluated for potential chronic health and vegetation concerns. Measured chemical concentrations were compared to appropriate comparison values (e.g., the NAAQS value, TCEQ health-, odor-, and vegetation-based AMCVs). Hydrogen sulfide samples were compared to the numerical value of the 30-minute residential state standard for H<sub>2</sub>S (80 ppbv). Information on AMCVs may be obtained via the internet (<https://www.tceq.texas.gov/toxicology/amcv/about>) or by contacting the TD by phone at (512) 239-1795 or by email at [TOX@tceq.texas.gov](mailto:TOX@tceq.texas.gov). Exceedance of an AMCV does not necessarily mean that adverse effects would be expected (e.g., health-based AMCVs are set at levels well below concentrations at which adverse effects have been observed), but rather that further evaluation is required.

## Evaluation

### ***30-Minute, 1-hour, and 8-hour Concentrations***

The vast majority of the 1-hour autoGC VOC concentrations were below their respective TCEQ short-term, health-, odor-, and/or vegetation-based AMCVs. For example, about 99.9995% of the 5,383,507 1-hour VOC measurements from the TCEQ, EISM, HRM, and TCLAMN network autoGC monitors in Region 12 were below their short-term AMCVs. Twenty-two hourly concentrations (approximately 0.00041%) exceeded the respective short-term health-based AMCV. Five hourly measurements (approximately 0.000093%) exceeded an odor-based AMCV over this time period (Table 2). Additionally, all 1,479 8-hour carbonyl concentrations measured in Region 12 were below their respective AMCVs. All of the 30-minute rolling averages for H<sub>2</sub>S

were below the numerical value of the state 30-minute H<sub>2</sub>S standard for residential areas (80 ppbv). Therefore, the TD would not expect short-term, adverse health effects, vegetation effects, or odors to be associated with the vast majority of the 1-hour, 8-hour, or 30-minute measurements monitored in Region 12. Further evaluation was conducted for the monitored concentrations that exceeded their respective short-term, odor- and/or vegetation-based AMCVs to determine the potential for adverse health effects, odors, or effects on vegetation.

#### Health-Based AMCV Exceedances

One concentration of benzene exceeded the short-term, health-based AMCV. This benzene exceedance occurred at Channelview Drive Water Tower, where the reported hourly benzene concentration of 296 ppbv was measured on March 4, 2024, at 5 am. This measured value was 1.6 times higher than the health-based 1-hour AMCV of 180 ppbv. The magnitude of the exceedance is low and transient in nature (the only exceedance measured in 2024). Considering the inherent precautionary nature of the 1-hour AMCV along with the underlying toxicity data, adverse health effects would not be expected if exposure to this concentration of benzene had occurred.

Twenty-one hourly concentrations of cyclohexane exceeded the short-term, health-based AMCV. These exceedances occurred at HRM 7 Baytown. The measured concentrations ranged from 1,008 to 2,383 ppbv and occurred during 15 days in 2024. Most of the occurrences were sporadic and transient and occurred for one hour during the day; however, there were four days where the hourly exceedances occurred for two or more hours. The longest duration was for 6 hours, and lasted from 8 pm on February 23, 2024, through 1 am on February 24, 2024. The measured hourly values were more than 1 times to 2.4 times higher than the health-based 1-hour AMCV of 1,000 ppbv. Overall, these measured concentrations were well below concentrations where health effects occur. The lowest concentration that has shown cyclohexane-specific health effects (eye irritation, headache, and/or dry throat in 1 or 2 out of 12 individuals exposed for 4 hours) is 25,000 ppbv.

#### Odor-Based AMCV Exceedances

The monitored 1-hour autoGC VOC concentrations that exceeded their respective odor-based comparison values are shown in Table 2. In total, there were 5 odor-based AMCV exceedances by 1-hour autoGC data in Region 12. The total number of exceedances are similar to the number of exceedances in 2020 (5 exceedances), 2019 (6 exceedances), 2017 (5 exceedances), 2016 (7 exceedances), 2015 (5 exceedances), 2014 (5 exceedances), and 2013 (8 exceedances). However, the total number of exceedances are significantly lower compared to 2023 (24 exceedances), 2022 (44 exceedances), 2021 (17 exceedances), 2018 (11 exceedances), 2012 (14 exceedances), 2011 (19 exceedances), 2010 (75 exceedances), 2009 (37 exceedances), 2008 (82 exceedances), and 2007 (103 exceedances).

**Table 2. Odor-Based AMCV Exceedances by 1-Hour AutoGC VOC Concentrations**

Site	Chemical	Number of 1-Hour Concentrations above Odor-Based AMCV	Maximum Measured Concentration (ppbv)	Odor-Based AMCV (ppbv)
HRM 7 Baytown	isoprene	1	60	47
HRM 7 Baytown	styrene	1	38	26
Lynchburg Ferry	styrene	1	36	26
Milby Park	1,3-butadiene	1	400	230
Milby Park	styrene	1	28	26

The monitored odor-based AMCV exceedances would not be expected to cause direct acute adverse health effects. Additionally, the infrequency (approximately 0.000093% of hourly measurements) and generally low magnitude of the exceedances (e.g.,  $\leq 1.7$  times the odor-based AMCV) are not indicative of persistent, strong odors with the potential to cause odor-related indirect health effects (e.g., nausea, headache), although exposure to some chemical concentrations could have resulted in the perception of odors.

**24-Hour Concentrations**

More than 48,708 24-hour canister VOC measurements, for which there are 24-hour, chemical-specific AMCVs available, were below their health- and welfare-based AMCVs in Region 12.

All 901 24-hour carbonyl measurements were below their health- and welfare-based AMCVs in Region 12.

Therefore, these monitored concentrations would not be expected to cause short-term adverse health effects or odorous conditions.

**Annual Average Concentrations**

All annual averages were below their respective long-term AMCVs.

- Based on averages from 5,383,507 hourly autoGC measurements (TCEQ, EISM, HRM, and TCLAMN network autoGC sites), all annual VOC concentrations were less than their respective long-term AMCVs.

- Based on averages from more than 48,708 24-hour canister measurements (TCEQ, HRM, and TCLAMN network canister sites), all annual VOC concentrations were less than their respective long-term AMCVs.
- Based on the averages from 4,502 24-hour metals measurements, all monitored annual average concentrations of metals were below their respective long-term comparison values (e.g., long-term AMCVs).
- In conclusion, 100% of all annual averages were below their respective long-term AMCVs, and no long-term, adverse health or vegetation effects would be expected due to exposure to those concentrations.

***Freeport Air Pollutant Watch List (APWL) Area for Arsenic, Cobalt, Nickel, & Vanadium***

Elevated short-term nickel, arsenic, vanadium, and cobalt levels exceeding their respective short-term AMCVs were measured near Gulf Chemical and Metallurgical Corporation in Freeport during yearly mobile monitoring trips conducted 2005-2010. Due to the elevated metals concentrations, the Freeport area (Site# 1201<sup>k</sup>) was added to the APWL in 2005. In May 2011, the Freeport South Avenue I monitoring site was activated. This site is located northeast of the facility of concern, within a residential area, and monitors for speciated PM<sub>2.5</sub> metals. Since this site's activation in May of 2011, all speciated PM<sub>2.5</sub> metals short-term and annual averages have been below their respective AMCVs; no adverse health effects would be expected due to exposure to these concentrations. TCEQ will continue to evaluate relevant air monitoring data and any additional information for this APWL site within the context of the APWL ([APWL Protocol Revised \(texas.gov\)](#)). For questions regarding the APWL, you may visit the TCEQ website at <https://www.tceq.texas.gov/toxicology/apwl/apwl.html>.

If you have any questions regarding this memorandum, please contact Janet Hamilton, Ph.D., D.A.B.T. by phone at (512) 239-0557 or email at [Janet.Hamilton@tceq.texas.gov](mailto:Janet.Hamilton@tceq.texas.gov), or Stony Lo, Ph.D. by phone at (512) 239-0576 or email at [Stony.Lo@tceq.texas.gov](mailto:Stony.Lo@tceq.texas.gov), or Mariana Saitas, Ph.D. by phone at (512) 239-1498 or email at [Mariana.Saitas@tceq.texas.gov](mailto:Mariana.Saitas@tceq.texas.gov).

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<sup>k</sup> <https://www.tceq.texas.gov/downloads/toxicology/air-pollutant-watch-list/maps/1201freeport.pdf>

## Appendix 1. Monitored Air Toxics in Region 12

### List 1. Target VOC Analytes in Canister Samplers

1,1,2,2-Tetrachloroethane	Acetylene	m-Ethyltoluene
1,1,2-Trichloroethane	Benzene	m-/p-Xylene
1,1-Dichloroethane	Bromomethane	n-Butane
1,1-Dichloroethylene	Carbon Tetrachloride <sup>a</sup>	n-Decane
1,2,3-Trimethylbenzene	Chlorobenzene	n-Heptane
1,2,4-Trimethylbenzene	Chloroform	n-Hexane
1,2-Dichloropropane	Chloromethane	n-Nonane
1,3,5-Trimethylbenzene	cis-1,3-Dichloropropene	n-Octane
1,3-Butadiene	cis-2-Butene	n-Pentane
1-Butene <sup>a</sup>	cis-2-Hexene	n-Propylbenzene
1-Hexene & 2-Methyl-1-Pentene <sup>a</sup>	cis-2-Pentene	n-Undecane
1-Pentene	Cyclohexane	o-Ethyltoluene
2,2,4-Trimethylpentane	Cyclopentane	o-Xylene
2,2-Dimethylbutane <sup>a</sup>	Cyclopentene	p-Diethylbenzene
2,3,4-Trimethylpentane	Dichlorodifluoromethane	p-Ethyltoluene
2,3-Dimethylbutane	Dichloromethane <sup>a</sup>	Propane
2,3-Dimethylpentane	Ethane	Propylene
2,4-Dimethylpentane	Ethylbenzene	Styrene
2-Chloropentane <sup>a</sup>	Ethylene	Tetrachloroethylene
2-Methyl-2-Butene	Ethylene Dibromide <sup>a</sup>	Toluene
2-Methylheptane	Ethylene Dichloride <sup>a</sup>	trans-1,3-Dichloropropene
2-Methylhexane <sup>a</sup>	Isobutane	trans-2-Butene
2-Methylpentane <sup>a</sup>	Isopentane	trans-2-Hexene
3-Methyl-1-Butene	Isoprene	trans-2-Pentene
3-Methylheptane	Isopropylbenzene <sup>a</sup>	Trichloroethylene
3-Methylhexane	m-Diethylbenzene	Trichlorofluoromethane
3-Methylpentane	Methyl Chloroform <sup>a</sup>	Vinyl Chloride
4-Methyl-1-Pentene	Methylcyclohexane	
	Methylcyclopentane	

<sup>a</sup> Not monitored at the HRM 1, 4, 7, 8, 10, and 11 sites.

### List 2. Target Carbonyl Analytes

2,5-Dimethylbenzaldehyde	Crotonaldehyde	Methacrolein
Acetaldehyde	Formaldehyde	o-Tolualdehyde
Acetone	Heptanal	Propionaldehyde
Acrolein - Unverified	Hexanaldehyde	Valeraldehyde
Benzaldehyde	Isovaleraldehyde	m & p-Tolualdehyde
Butyraldehyde	Methyl Ethyl Ketone (MEK)	

**List 3. Target Metal Analytes**

Aluminum (PM <sub>2.5</sub> )	Cobalt (PM <sub>2.5</sub> )	Selenium (PM <sub>2.5</sub> )
Antimony (PM <sub>2.5</sub> )	Copper (PM <sub>2.5</sub> )	Tin (PM <sub>2.5</sub> )
Arsenic (PM <sub>2.5</sub> )	Lead (PM <sub>2.5</sub> )	Vanadium (PM <sub>2.5</sub> )
Barium (PM <sub>2.5</sub> )	Manganese (PM <sub>2.5</sub> )	Zinc (PM <sub>2.5</sub> )
Cadmium (PM <sub>2.5</sub> )	Molybdenum (PM <sub>2.5</sub> )	
Chromium (PM <sub>2.5</sub> )	Nickel (PM <sub>2.5</sub> )	

**List 4. Target VOC Analytes in AutoGC**

1,2,3-Trimethylbenzene <sup>a</sup>	Acetylene	Toluene <sup>b</sup>
1,2,4-Trimethylbenzene	Benzene <sup>b,c</sup>	cis-2-Butene
1,3,5-Trimethylbenzene	Cyclohexane	cis-2-Pentene
1,3-Butadiene <sup>c</sup>	Cyclopentane	m/p Xylene
1-Butene	Ethane	n-Butane
1-Pentene	Ethylbenzene	n-Decane <sup>d</sup>
2,2,4-Trimethylpentane	Ethylene	n-Heptane
2,2-Dimethylbutane	Isobutane	n-Hexane <sup>b</sup>
2,3,4-Trimethylpentane	Isopentane	n-Nonane
2,3-Dimethylpentane	Isoprene	n-Octane
2,4-Dimethylpentane <sup>e</sup>	Isopropylbenzene	n-Pentane <sup>b</sup>
2-Methyl-2-Butene <sup>f</sup>	Methylcyclohexane	n-Propylbenzene
2-Methylheptane	Methylcyclopentane <sup>e</sup>	n-Undecane <sup>f</sup>
2-Methylhexane	Propane	o-Xylene
3-Methylheptane	Propylene	trans-2-Butene
3-Methylhexane	Styrene	trans-2-Pentene

<sup>a</sup> Not monitored at the Channelview, Houston Deer Park #2, and HRM #3 Haden Road monitoring sites.

<sup>b</sup> These are the only compounds monitored at the Texas City BP Logan St and Texas City BP 31st St sites.

<sup>c</sup> 2nd Avenue Monitoring Station only monitored for these compounds, in addition to that in List 5.

<sup>d</sup> Not monitored at the Wallisville monitoring site.

<sup>e</sup> Not monitored at the Houston Deer Park #2 monitoring site.

<sup>f</sup> Not monitored at the Cesar Chavez, Channelview, Channelview Drive Water Tower, Clinton, Galena Park, Houston Deer Park #2, Manchester East Avenue North, Milby Park, and Pasadena Richey Elementary School monitoring sites.

**List 5. Additional AutoGC Analyte Monitored at 2<sup>nd</sup> Avenue Monitoring Site**

Vinyl Chloride