

TCEQ Interoffice Memorandum

To: Jaime Garza, Regional Director, R15

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Date: May 9, 2025

Subject: Health Effects Review of 2023 Ambient Air Network Monitoring Data in Region 15, Harlingen

Conclusions

- All measured 24-hour concentrations of the 84 volatile organic compounds (VOCs) monitored were below their respective Texas Commission on Environmental Quality (TCEQ) air monitoring comparison values (AMCVs) and would not be expected to cause adverse health or vegetation effects.
- Reported 24-hour concentrations of speciated metals were below their respective 24-hour AMCVs and would not be expected to cause adverse health effects.

Background

Ambient air sampling data collected at two monitoring network sites in Region 15, Harlingen, in 2023 were evaluated by the Toxicology, Risk Assessment, and Research Division (TD). TCEQ Region 15 monitoring sites information is presented in Table 1, along with a hyperlink to the monitoring sites map and detailed information. The TD reviewed air monitoring summary results for VOCs and metals from 24-hour canister samples collected every sixth-day. For a complete list of all analyzed chemicals, please see List 1 and 2 in Attachment A.

The TCEQ Monitoring Division reported the data for all chemicals evaluated in this memorandum. All data collected from the Brownsville, Brownsville East 6th Street and Mission monitoring sites did not meet the data completeness objective of 75 percent data return. The Brownsville monitoring site was deactivated on April 4, 2023, then relocated over a mile away and renamed as Brownsville East 6th Street monitoring site. This new location was assigned a different site number and activated again on April 5, 2023. The Mission monitoring site canister sampler was temporarily deactivated on December 14, 2022, relocated and re-deployed on October 10, 2023, while the metal sampler was activated on October 11, 2023, and deactivated on October 28, 2024, as a 12-month Air Quality Division special study site that became deactivated at study conclusion. Therefore, none of the analytes at Brownsville, Brownsville East 6th Street and Mission monitoring sites met an annual data completeness of 75% and cannot be evaluated from a long-term perspective. Short-term samples collected over a 24-

hour duration were compared to their respective chemical-specific AMCVs for the potential to adversely affect human health or welfare during an acute exposure duration. To enable evaluation of 24-hour monitoring data more fully, TCEQ has also developed 24-hour acute AMCVs for specific chemicals. As such, 24-hour samples were compared to the available TCEQ 24-hour AMCVs for 1,3-butadiene; 2,2-dimethylbutane; 2,3-dimethylbutane; 2-methylpentane; 3-methylpentane; benzene; carbon tetrachloride; ethylene dibromide; ethylene dichloride; and n-hexane. More information about AMCVs is available online at: <https://www.tceq.texas.gov/toxicology/amcv/about>.

Table 1. Monitoring Sites Located in TCEQ Region 15

Site Name and Location	County	EPA Site ID	Monitored Compounds
Brownsville ^a 344 Porter Drive	Cameron	48-061-0006	VOCs (24-h canister)
Brownsville East 6th Street ^b 85 East 6th Street	Cameron	48-061-1098	VOCs (24-h canister)
Mission ^c 2300 North Glasscock	Hidalgo	48-215-0043	VOCs (24-h canister), Metals (PM _{2.5})

^a Deactivated 4/4/2023 and relocated just over a mile away.

^b Replaced Brownsville, located over a mile from Brownsville, given new name and site number, and activated 4/5/2023.

^c Canister temporarily deactivated 12/14/2022 and relocated/re-deployed 10/10/2023; Metals activated 10/11/23 - 10/28/24 (12-month Air Quality Division special study site, deactivated at study conclusion).

Evaluation

VOCs

At the Brownsville and Mission sites, all measured 24-hour concentrations of the monitored 84 VOCs were below their AMCVs and would not be expected to cause adverse chronic health or welfare effects.

Metals

Reported 24-hour concentrations for all 16 speciated metals (PM_{2.5}) measured at the Mission monitoring site were below their respective short-term AMCVs and would not be considered of concern to human health.

If you have any questions regarding the contents of this review, please do not hesitate to contact Nnamdi Nnoli via email at nnamdi.nnoli@tceq.texas.gov or by phone at (512) 239-1785.

Attachment A**List 1. Target VOC Analytes in Canister Samples**

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

List 2. Target Metal Analytes

Aluminum (PM _{2.5})	Cobalt (PM _{2.5})	Selenium (PM _{2.5})
Antimony (PM _{2.5})	Copper (PM _{2.5})	Tin (PM _{2.5})
Arsenic (PM _{2.5})	Lead (PM _{2.5})	Vanadium (PM _{2.5})
Barium (PM _{2.5})	Manganese (PM _{2.5})	Zinc (PM _{2.5})
Cadmium (PM _{2.5})	Molybdenum (PM _{2.5})	
Chromium (PM _{2.5})	Nickel (PM _{2.5})	