

## TCEQ Interoffice Memorandum

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**To:** Winona Henry, Regional Director, R3

**From:** Nnamdi Nnoli, Ph.D. *nn*  
Toxicology, Risk Assessment, and Research Division  
Office of the Executive Director

**Date:** February 15, 2022

**Subject:** Health Effects Review of 2020 Ambient Air Network Monitoring Data in Region 3, Abilene

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### Conclusion

- All measured 24-hour and annual average 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 welfare effects.

### Background

Ambient air sampling conducted at three monitoring network sites in Region 3, Abilene, during 2020 was evaluated by the Toxicology, Risk Assessment, and Research Division (TD). The TD reviewed air monitoring summary results from VOC canister samples collected on a 24-hour every sixth-day schedule. TCEQ Region 3 monitoring sites information is presented in Table 1, along with hyperlinks to detailed information regarding the monitoring sites and their maps. List 1, which can be found in Attachment A, displays the target analytes for the monitoring sites.

The TCEQ Monitoring Division reported the data for all chemicals evaluated in this memorandum. All data collected met the data completeness objective of 75 percent data return, or at least 45 valid samples per year. Because short-term or peak concentrations are not necessarily captured by 24-hour samples, daily concentrations have limited use in evaluating the potential for acute health effects. Rather, 24-hour air samples collected every-sixth day for a year are intended to provide representative long-term average concentrations. Therefore, the TD evaluated the reported annual average concentrations from 24-hour samples for each target analyte for potential chronic health and vegetation concerns by comparing measured chemical concentrations to long-term AMCVs. In order to be able to evaluate 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; 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 3**

| Site Name and Location   | County   | Monitor ID  | Monitored Compounds  |
|--|----------|-------------|----------------------|
| <a href="#">Abilene Industrial Boulevard</a><br>1939 Industrial Blvd | Taylor   | 48-441-1509 | VOCs (24-h canister) |
| <a href="#">Bowie Patterson Street</a><br>1032 Patterson Street      | Montague | 48-337-1507 | VOCs (24-h canister) |
| <a href="#">Wichita Falls MWSU</a><br>MWSU grounds                   | Wichita  | 48-485-1508 | VOCs (24-h canister) |

## Evaluation

At the Abilene Industrial Boulevard, Bowie Patterson, and Wichita Falls sites, all 24-hour and annual average concentrations of the monitored 84 VOCs were below their respective AMCVs and would not be expected to cause adverse chronic health or vegetation effects.

If you have any questions or comments regarding this evaluation, please feel free to contact Nnamdi Nnoli at [nnamdi.nnoli@tceq.texas.gov](mailto:nnamdi.nnoli@tceq.texas.gov) or (512) 239-1785.

## Attachment A

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

|                                |                           |                             |
|--------------------------------|---------------------------|-----------------------------|
| 1,1,2,2-Tetrachloroethane      | Bromomethane              | M/P Xylene                  |
| 1,1,2-Trichloroethane          | Carbon Tetrachloride      | Methyl Chloroform (1,1,1-   |
| 1,1-Dichloroethane             | Chlorobenzene             | Trichloroethane)            |
| 1,1-Dichloroethylene           | Chloroform                | Methylcyclohexane           |
| 1,2,3-Trimethylbenzene         | Chloromethane (Methyl     | Methylcyclopentane          |
| 1,2,4-Trimethylbenzene         | Chloride)                 | N-Butane                    |
| 1,2-Dichloropropane            | Cis 1,3-Dichloropropene   | N-Decane                    |
| 1,3,5-Trimethylbenzene         | Cis-2-Butene              | N-Heptane                   |
| 1,3-Butadiene                  | Cis-2-Hexene              | N-Hexane                    |
| 1-Butene                       | Cis-2-Pentene             | N-Nonane                    |
| 1-Hexene+2-Methyl-1-Pentene    | Cyclohexane               | N-Octane                    |
| 1-Pentene                      | Cyclopentane              | N-Pentane                   |
| 2,2,4-Trimethylpentane         | Cyclopentene              | N-Propylbenzene             |
| 2,2-Dimethylbutane (Neohexane) | Dichlorodifluoromethane   | N-Undecane                  |
| 2,3,4-Trimethylpentane         | Dichloromethane           | O-Ethyltoluene              |
| 2,3-Dimethylbutane             | (Methylene Chloride)      | O-Xylene                    |
| 2,3-Dimethylpentane            | Ethane                    | P-Diethylbenzene            |
| 2,4-Dimethylpentane            | Ethylbenzene              | P-Ethyltoluene              |
| 2-Chloropentane                | Ethylene                  | Propane                     |
| 2-Methyl-2-Butene              | Ethylene Dibromide (1,2-  | Propylene                   |
| 2-Methylheptane                | Dibromoethane)            | Styrene                     |
| 2-Methylhexane                 | Ethylene Dichloride (1,2- | Tetrachloroethylene         |
| 2-Methylpentane (Isohexane)    | Dichloroethane)           | Toluene                     |
| 3-Methyl-1-Butene              | Isobutane                 | Trans-1-3-Dichloropropylene |
| 3-Methylheptane                | Isopentane (2-            | Trans-2-Butene              |
| 3-Methylhexane                 | Methylbutane)             | Trans-2-Hexene              |
| 3-Methylpentane                | Isoprene                  | Trans-2-Pentene             |
| 4-Methyl-1-Pentene             | Isopropylbenzene (Cumene) | Trichloroethylene           |
| Acetylene                      | M-Diethylbenzene          | Trichlorofluoromethane      |
| Benzene                        | M-Ethyltoluene            | Vinyl Chloride              |