

# TCEQ Interoffice Memorandum

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**To:** Jamie Garza, Regional Director

**From:** Ross Jones, Ph.D. *rcj.*  
Toxicology Division, Office of the Executive Director

**Date:** October 22, 2014

**Subject:** Toxicological Evaluation of 2013 Ambient Air Network Monitoring Data  
in Region 16, Laredo

## Conclusions

- Reported 24-hour concentrations of VOCs and metals would not be expected to cause short-term health effects, vegetation damage, or nuisance odors.
- Reported annual concentrations of VOCs and metals would not be expected to cause long-term adverse human health or vegetation effects.

## Background

This memorandum conveys the Toxicology Division's (TD) evaluation of ambient air sampling conducted at two monitoring sites in Region 16-Laredo during 2013. TCEQ Region 16 monitoring site information is presented in Table 1 along with hyperlinks to detailed information regarding the monitoring sites and their maps. Lists 1-2, which can be found in Attachment A, display the target analytes for monitoring sites. The TD reviewed air monitoring summary results from VOC canister samples collected on a 24-hour every sixth day schedule at Community Air Toxics Monitoring Network (CATMN) monitors and 24-hour metals samples (TSP- metals).

The TCEQ Monitoring Division reported the data for all chemicals evaluated in this memorandum. Data discussed in this evaluation for the Laredo Bridge monitoring site (84 VOCs from canister samples) met the data completeness objective of 75 percent data return or at least 45 valid samples per year. Thus, annual average concentrations of VOCs (collected via canister sample), were compared to their respective long-term AMCVs. Twenty-four-hour air samples collected every third or sixth day for a year are designed to provide representative long-term average concentrations. In order to be able to evaluate 24-hour monitoring data more fully, TCEQ has developed 24-hour Air Monitoring Comparison Values (AMCVs) for specific chemicals. As such, 24-hour samples were compared to the available TCEQ 24-hour AMCVs (1,3-butadiene, benzene, and formaldehyde). 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. Additional information regarding the derivation and application of AMCVs is available online at: <http://www.tceq.state.tx.us/toxicology/AirToxics.html#amcv>.

Table 1. Monitoring Sites Located in TCEQ Region 16

City and Site Location	County	Monitor ID	Monitored Compounds
<a href="#">700 Zargosa Street</a> (Laredo Bridge)	Webb	48-479-0017	VOCs <sup>a</sup>
<a href="#">2020 Vidaurri Avenue</a> (Laredo Vidaurri)	Webb	48-141-0044	Metals <sup>b</sup>

<sup>a</sup> 24-hour canister

<sup>b</sup> TSP (lead and arsenic)

## Evaluation

### VOCs

The 2013 annual average concentrations for all 84 VOCs collected as 24-hour canister samples at the Laredo Bridge monitoring site were well below their respective short- and long-term AMCVs. Thus, adverse human health or vegetation effects would not be expected to occur as a result of short- or long-term exposure to the reported levels of these chemicals at this monitoring site.

### Metals

Concentrations of lead and arsenic (TSP) were below their respective AMCVs. Reported concentrations for two metals (TSP) measured at the Laredo Vidaurri monitoring site ranged from non-detect to 0.00278  $\mu\text{g}/\text{m}^3$  for arsenic and from 0.00192 to 0.0168  $\mu\text{g}/\text{m}^3$  for lead. The 2013 annual average concentrations for these metals (PM<sub>2.5</sub>) were well below their respective AMCVs. Therefore, adverse health or vegetative effects would not be expected to occur as a result of long-term exposure to the reported levels of these metals at the Laredo Vidaurri Avenue monitoring site.

If you have any questions or comments regarding this evaluation, please feel free to contact me at (512) 239-1804 or [ross.jones@tceq.texas.gov](mailto:ross.jones@tceq.texas.gov).

**Attachment A**

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

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

**List 2. Target Metal Analytes**

Arsenic (TSP)  
Lead (TSP)