


Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: David Ramirez, Regional Director
Rose Luna-Pirtle, Air/Water/Waste Section Manager
Ramiro Garcia, Border and South Central Texas
Area Director

Date: December 17,
2009

From: Carla Kinslow, Ph.D., Toxicology Division, Chief Engineer's Office 

Subject: Health Effects Review of Air Monitoring Data Collected in TCEQ Region 16 – Laredo during 2008

Conclusions

In TCEQ Region 16 – Laredo during 2008, air monitoring was conducted for volatile organic compounds (VOCs), semi-volatile compound (SVOCs) [including polycyclic aromatic hydrocarbons (PAHs)], and antimony and arsenic in total suspended particulate (TSP). Exposure to the reported annual average concentrations of these chemicals would not be expected to cause chronic adverse health effects.

Background

This memorandum conveys the Toxicology Division's (TDs) evaluation of ambient air sampling conducted at two Community Air Toxics Monitoring Network (CATMN) sites in Laredo during 2008. Table 1 contains information regarding the two sites located in TCEQ Region 16. The TD reviewed air monitoring summary results for 95 volatile organic compounds (VOCs) from two canister samplers, and two TSP metals from one filter sampler and 16 PAH's/SVOC's from one sampler. The TCEQ Monitoring Operations Division reported the data for all chemicals evaluated in this memorandum. The target analyte list of 95 VOCs was changed in the third quarter of 2008. Eleven oxygenated compounds were dropped from the list due to water issues in the laboratory analysis. Therefore, those compounds did not meet the data completeness objective of 75 percent data return, or 45 valid samples per year. Those eleven compounds are identified on the target analyte table (Table 2). All other data collected (84 VOCs, two metals (TSP) and 16 PAH's) for both monitoring sites met the data completeness objective of 75 percent data return. The TD reviewed air monitoring summary results for VOCs from 24-hour canister samples collected every sixth day, PAHs/SVOCs from 24-hour samples collected every sixth day, and speciated metals from 24-hour TSP samples collected every sixth day at the West End Washington Street site in Laredo (Figure 1). In addition, the TD reviewed air monitoring summary results for VOCs from 24-hour canister samples collected every sixth day at the Zaragosa Street – Laredo Bridge site (Figure 2). For a complete list of all examined chemicals, please see Table 2. This memorandum evaluates air monitoring data on a chemical-by-chemical basis.

Table 1. TCEQ Region 16 Monitoring Sites Evaluated in this Memorandum

County	City and Site Location	EPA Site ID	Monitored Compounds
Webb	Laredo, West End Washington Street	48-479-0016	VOCs, PAHs, Metals (TSP)
Webb	Laredo, 700 Zaragosa Street, Bridge	48-479-0017	VOCs

All data collected for VOCs, PAHs/SVOCs, and TSP metals met the data completeness requirement for estimating representative annual average concentrations at both Laredo sites.

Because 24-hour air samples are designed to provide representative long-term average concentrations, annual averages from 24-hour samples were evaluated for potential chronic health concerns. Short-term or peak concentrations are not captured by 24-hour samples; therefore, daily maximum concentrations have limited use in evaluating the potential for acute health effects. For all VOCs, PAHs/SVOCs, and speciated TSP metals, annual average concentrations were compared to their respective appropriate comparison values.

Evaluation

Washington Street Site

The 2009 annual average concentrations of all detected VOCs, PAHs, and metals would not be expected to pose a chronic health concern.

Zaragosa Street – Bridge Site

The 2009 annual average concentrations of all detected VOCs would not be expected to pose a chronic health concern.

If you have any questions about this evaluation, please call me at (512) 239-1075 or e-mail me at ckinslow@tceq.state.tx.us.

Table 2. VOCs, PAHs and TSP Metals Evaluated

VOCs		
1,1,1-Trichloroethane	3-Hexanone*	Toluene
1,1,2,2-Tetrachloroethane	3-Pentanone*	Trichloroethylene
1,1,2-Trichloroethane	4-Methyl-1-Pentene	Trichlorofluoromethane
1,1-Dichloroethane	Acetylene	Vinyl Chloride
1,1-Dichloroethylene	Benzene	c-2-Butene
1,2,3-Trimethylbenzene	Bromomethane	c-2-Hexene
1,2,4-Trimethylbenzene	Butyl Acetate*	c-2-Pentene
1,2-Dibromoethane	cis 1,3-Dichloropropylene	Dichlorodifluoromethane
1,2-Dichloroethane	Carbon Tetrachloride	Isobutyraldehyde*
1,2-Dichloropropane	Chlorobenzene	m-Diethylbenzene
1,3,5-Trimethylbenzene	Chloroform	m-Ethyltoluene
1,3-Butadiene	Cyclohexane	Methyl Chloride
1-Butene	Cyclopentane	n-Butane
1-Hexene + 2-methyl-1-pentene	Cyclopentene	n-Decane
1-Pentene	Ethane	n-Heptane
2,2,4-Trimethylpentane	Ethyl Acetate*	n-Hexane
2,2-Dimethylbutane (Neohexane)	Ethyl Benzene	n-Nonane
2,3,4-Trimethylpentane	Ethylene	n-Octane
2,3-Dimethylbutane	Isobutane	n-Pentane
2,3-Dimethylpentane	Isopentane	n-Propyl Acetate*
2,4-Dimethylpentane	Isoprene	n-Propylbenzene
2-Butanone*	Isopropylbenzene	n-Undecane
2-Chloropentane	Methyl Butyl Ketone (MBK)*	o-Ethyltoluene
2-Methyl-2-Butene	Methyl t-Butyl ether*	o-Xylene
2-Methylheptane	Methylcyclohexane	p-Diethylbenzene
2-Methylhexane	Methylcyclopentane	p-Ethyltoluene
2-Methylpentane - Isohexane	Methylene Chloride	p-Xylene + m-Xylene
2-Methyl-3-Hexanone*	Methylisobutylketone*	t-2-Butene
3-Methyl-1-Butene	Propane	t-2-Hexene
3-Methylheptane	Propylene	t-2-Pentene
3-Methylhexane	Styrene	trans-1-3-Dichloropropylene
3-Methylpentane	Tetrachloroethylene (Perchloroethylene)	

SVOCs/PAHs		
Acenaphthene	Benzo (ghi) perylene	Indeno (1,2,3-cd) pyrene
Acenaphthylene	Benzo (k) fluoranthene	Naphthalene
Anthracene	Chrysene	Phenanthrene
Benzo (a) anthracene	Dibenzo (a,h) anthracene	Pyrene
Benzo (a) pyrene	Fluoranthene	
Benzo (b) fluoranthene	Fluorene	
TSP Metals		
Antimony	Arsenic	

* Compounds that were dropped from the target analyte list in the third quarter of 2008, due to water issues in the laboratory analysis.

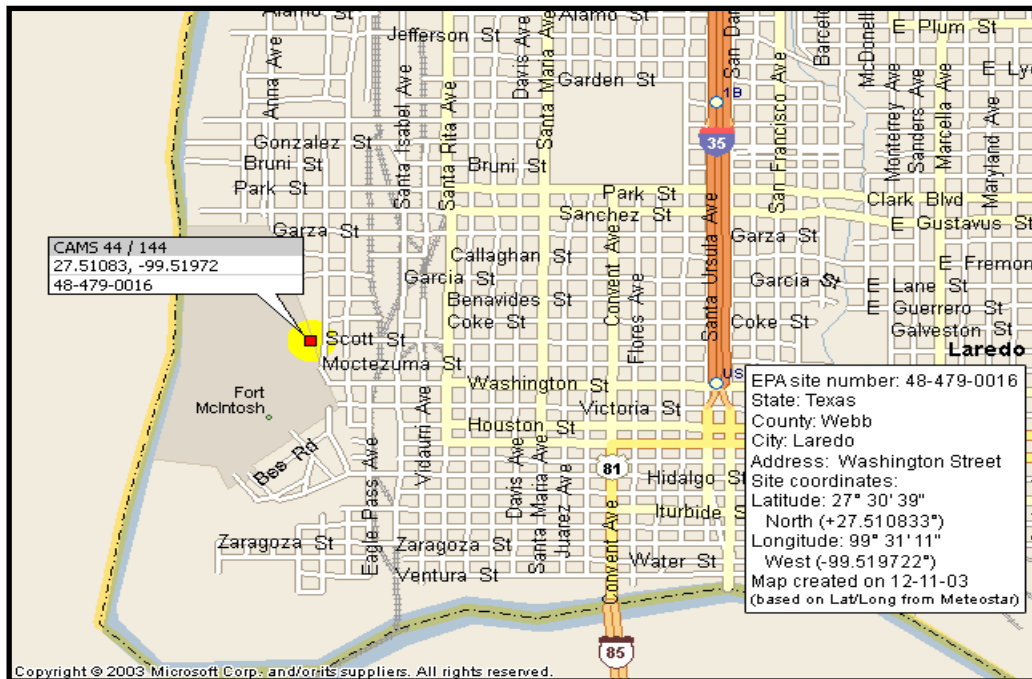


Figure 1. Location of Laredo - Washington Street Monitor

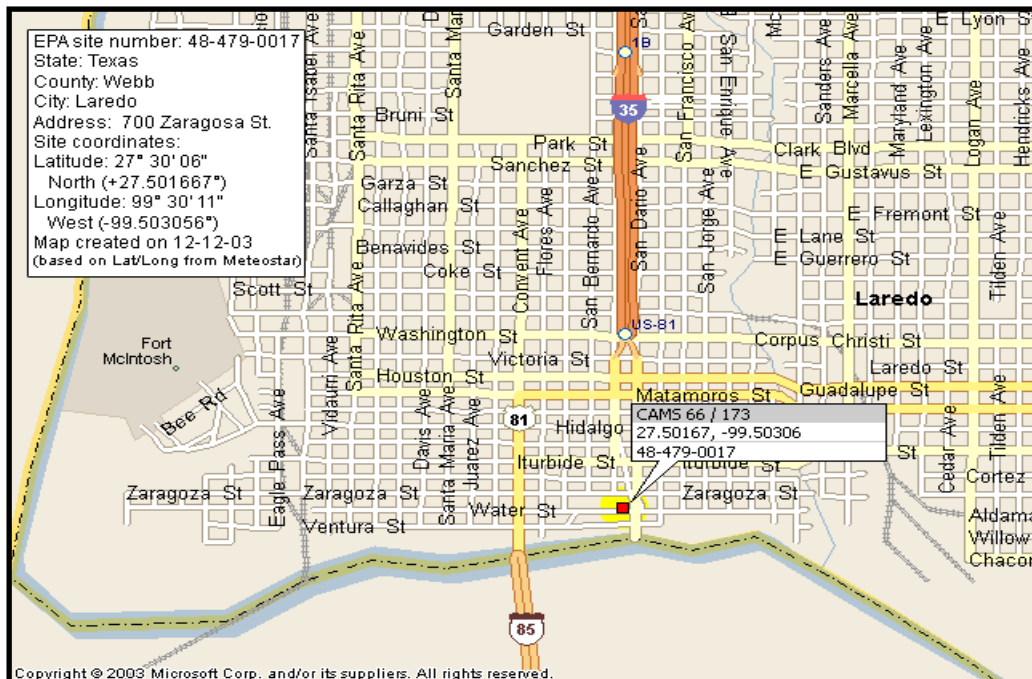


Figure 2. Location of Laredo - Bridge Zaragosa Street Monitor

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cc: Casso, Ruben – EPA Region 6, Dallas (via e-mail)