

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Lorinda Gardner, Director, R15
David Ramirez, Air Section Manager, R15
Carlos Rubinstein, Texas Border Area Director

Date: May 21, 2007

From: Valerie E. Meyers, Ph.D.
Toxicology Section, Chief Engineer's Office

Subject: Health Effects Review of 2006 Ambient Air Network Monitoring Sites in Region 15-Harlingen

Conclusions

The annual average concentrations of all 95 volatile organic compounds (VOCs) and 16 polycyclic aromatic hydrocarbons (PAHs) were well below their respective long-term Effects Screening Levels (ESLs) and therefore would not be expected to cause adverse health or vegetative effects.

Background

Ambient air sampling conducted at monitoring network sites in Region 15-Harlingen during 2006 was evaluated by the Toxicology Section (TS). Table 1 indicates the location and monitored compounds at three Community Air Toxics Monitoring Network (CATMN) sites in Region 15-Harlingen. Figures 1-3 are street level maps indicating the specific locations of each of the three monitoring sites. The TS reviewed air monitoring summary results for VOCs and PAHs from 24-hour canister samples collected every sixth day. For a complete list of all examined chemicals, please see Table 2.

Table 1: Monitoring Site Information for TCEQ Region 15

County	City and Site Location	EPA Site ID	Monitored Compounds
Cameron	Brownsville, 344 Porter Drive	48-061-0006	VOCs and PAHs
Hidalgo	Edinburg, 1902 West Schunior	48-215-0042	VOCs and PAHs
	Mission, 2300 North Glasscock	48-215-0043	VOCs and PAHs

The TCEQ Monitoring Operations Division reported the data for all chemicals evaluated. All data collected for VOCs and PAHs in Region 15 met TCEQ's data completeness objective of 75 percent data return, or 45 valid samples per year. Air samples collected over a 24-hour period are designed to provide representative long-term average concentrations. Therefore, the TS evaluated the reported annual average concentrations for each target analyte for potential chronic health and vegetative concerns by comparing the measured chemical concentrations to TCEQ long-term ESLs. Information on the ESLs can be obtained by contacting the TS 512-239-1795 or visiting the following website: <http://www.tceq.state.tx.us/implementation/tox/esl/ESLMain.html>.

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Evaluation

VOCs

Of the 95 target VOCs, 25 were detected at the Brownsville site, 26 were detected at the Hildago site, and 28 were detected at the Mission site. The remaining target analytes were not measured above minimum detection limits. Concentrations of the compounds that were detected were well below long-term ESLs, and therefore would not be expected to cause chronic adverse health or vegetative effects.

PAHs

Of the 16 reported PAHs at each of the three monitoring sites in the region for 2006, benzo (a) anthracene, benzo (a) pyrene were not detected. In addition, dibenzo (a,h) anthracene was not detected at the Brownsville site, and benzo (k) fluoranthene was not detected at the Hildago site. Those target analytes that were detected were well below long-term ESLs, and therefore would not be expected to cause chronic adverse health effects.

If you have any questions regarding this evaluation, please contact me at 512-239-1336.

cc (via email):

Casso, Ruben
Prosperie, Susan

Table 2: Target Analyte List

VOCs (CATMN)	Chloroform	o-Ethyltoluene
1,1,1-Trichloroethane	Cyclohexane	o-Xylene
1,1,2,2-Tetrachloroethane	Cyclopentane	p-Diethylbenzene
1,1,2-Trichloroethane	Cyclopentene	p-Ethyltoluene
1,1-Dichloroethane	Ethane	p-Xylene + m-Xylene
1,1-Dichloroethylene	Ethyl Acetate	t-2-Butene
1,2,3-Trimethylbenzene	Ethyl Benzene	t-2-Hexene
1,2,4-Trimethylbenzene	Ethylene	t-2-Pentene
1,2-Dibromoethane	Isobutane	trans-1-3-Dichloropropylene
1,2-Dichloroethane	Isopentane	
1,2-Dichloropropane	Isoprene	PAHs
1,3,5-Trimethylbenzene	Isopropylbenzene	Acenaphthene
1,3-Butadiene	Methyl Butyl Ketone (MBK)	Acenaphthylene
1-Butene	Methyl t-Butyl Ether (MTBE)	Anthracene
1-Hexene+2-methyl-1-pentene	Methylcyclohexane	Benzo (a) anthracene
1-Pentene	Methylcyclopentane	Benzo (a) pyrene
2,2,4-Trimethylpentane	Methylene Chloride	Benzo (b) fluoroanthene
2,2-Dimethylbutane - Neohexane	Methylisobutylketone	Benzo (ghi) perylene
2,3,4-Trimethylpentane	Propane	Benzo (k) fluoranthene
2,3-Dimethylbutane	Propylene	Chrysene
2,3-Dimethylpentane	Styrene	Dibenzo (a,h) anthracene
2,4-Dimethylpentane	Tetrachloroethylene	Fluoranthene
2-Butanone	Toluene	Fluorene
2-Chloropentane	Trichloroethylene	Indeno (1,2,3-cd) pyrene
2-Methyl-2-Butene	Trichlorofluoromethane	Naphthalene
2-Methylheptane	Vinyl Chloride	Phenanthrene
2-Methylhexane	c-2-Butene	Pyrene
2-Methylpentane - Isohexane	c-2-Hexene	
2-Methyl-3-Hexanone	c-2-Pentene	
3-Methyl-1-Butene	Dichlorodifluoromethane	
3-Methylheptane	Isobutyraldehyde	
3-Methylhexane	m-Diethylbenzene	
3-Methylpentane	m-Ethyltoluene	
3-Hexanone	Methyl Chloride	
3-Pentanone	n-Butane	
4-Methyl-1-Pentene	n-Decane	
Acetylene	n-Heptane	
Benzene	n-Hexane	
Bromomethane	n-Nonane	
Butyl Acetate	n-Octane	
cis 1,3-Dichloropropylene	n-Pentane	
Carbon Tetrachloride	n-Propyl Acetate	
Chlorobenzene	n-Propylbenzene	
	n-Undecane	

Figure 1. Brownsville Monitoring Site, Cameron County



Figure 2. Hidalgo Monitoring Site, Edinburg County



Figure 3. Mission Monitoring Site, Hidalgo County

