

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Carlos Rubenstein, Director
Lorinda Gardner, Waste/Air Section Manager
TCEQ Region 15–Harlingen

Date: October 8, 2004

From: Anthony M. Matthews, Toxicology Section, Chief Engineer’s Office

Subject: Health Effects Review of 2003 Ambient Air Network Monitoring Sites in Region 15–Harlingen

Conclusions

- The annual average concentrations of all reported VOCs and metals were less than their respective long-term health-based effects screening levels (ESLs), and would not be expected to cause adverse health effects.

Background

This memorandum conveys the Toxicology Section’s evaluation of ambient air sampling conducted at monitoring network sites in Region 15–Harlingen during the year 2003. We reviewed air monitoring summary results for volatile organic compounds (VOCs) from 24-hour canister samples collected every sixth day and speciated metals data from 24-hour total suspended particulate (TSP) samples collected every sixth day. The VOC samples were obtained from the sites at 344 Porter Drive, in Brownsville, and 1902 West Schunior, in Edinburg. The TSP samples were obtained from the 344 Porter Drive location in Brownsville.

The TCEQ Monitoring Operations Division reported the data for all chemicals evaluated. We have evaluated the reported annual average concentrations for each constituent for potential chronic health concerns. It should be noted that 24-hour air samples are designed to provide representative long-term average concentrations, and do not indicate short-term or peak concentrations. Therefore, those data are of limited use for evaluating potential acute health effects or odors.

The measured chemical concentrations were compared to TCEQ health-based Effects Screening Levels (ESLs). An ESL is a guideline concentration which is protective of the general public, including sensitive members of the population, such as the elderly, children, and persons with pre-existing health conditions. Health-based ESLs are set well below levels at which adverse health effects have been reported in the scientific literature. If the ambient concentration of a pollutant is below the ESL, we do not expect adverse health effects to occur. Ambient concentrations of a pollutant above the health-based ESL do not mean that exposure will result in adverse effects, but rather, that further evaluation may be warranted. This memorandum evaluates air monitoring data on a chemical-by-chemical basis. Evaluation of the potential for cumulative effects will be presented in a later report.

Carlos Rubenstein, Director
Lorinda Gardner, Waste/Air Section Manager
Page 2
October 8, 2004

Evaluation

VOCs

The annual average concentrations of all reported VOCs at the noted monitoring sites for the year 2003 were either less than their respective method detection limits or their long-term ESLs, and do not present a health concern. In addition, 24-hour concentrations for all reported VOCs were below levels that would be expected to cause acute health effects or odors. However, as stated above, the potential for acute health effects and odors could not be fully evaluated from the 24-hour data.

Metals

Data for antimony and arsenic were reported from the 24-hour TSP samples collected during the year 2003. The annual average concentrations reported for those metals were less than their respective long-term health-based ESLs.

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