

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Leroy Biggers, Director
Charles Murray, Air Section Manager
TCEQ Region 5–Tyler

Date: October 5, 2004

From: Shannon Ethridge, Toxicology Section, Chief Engineer’s Office

Subject: Health Effects Review of 2003 Ambient Air Network Monitoring Sites in Region 5–Tyler

Conclusions

- All annual average concentrations of all reported VOCs were below their long-term ESLs and are not a health concern.
- All metals from particulate matter less than or equal to 2.5 microns (PM_{2.5}) were monitored at levels below health-based values.

Background

This memorandum conveys the Toxicology Section’s evaluation of ambient air sampling conducted at two monitoring network sites in Region 5–Tyler during 2003. We reviewed annual summary results for 24-hour canister Volatile Organic Compounds (VOCs) collected generally every sixth day at:

- Gregg County Airport, AIRS No. 481830001 (Longview C19/A127)

In addition summary results for speciated metals from 24-hour PM_{2.5} filter samples collected generally every third day at:

- Highway 143 and Spur 449, AIRS No. 482030002 (Karnack C85).

The TCEQ Monitoring Operations Division reported the data for all chemicals evaluated here. We have evaluated the 2003 air monitoring results for their potential to cause adverse health effects and odorous conditions. Annual averages from 24-hour canister samples and metals samples were evaluated for potential chronic health concern. It should be noted that every-sixth-day 24-hour air samples are designed to provide representative long-term average concentrations. Twenty-four-hour samples do not show short-term or peak concentrations, and therefore, have limited use in evaluating the potential for 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 guideline comparison levels set well below levels at which adverse health effects have been reported in the scientific literature. If an air concentration of a pollutant is below the ESL, we do not expect adverse health effects to occur. If an air concentration of a pollutant is above the health-based ESL, it is not indicative that adverse effects will necessarily occur, 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.

Evaluation

Page 2
Leroy Biggers,
Charles Murray
October 5, 2004

All annual average concentrations of all reported VOCs and metals were below their long-term ESLs and are not a health concern. In addition, 24-hour concentrations for all reported VOCs and metals were below levels that would cause acute health effects or odors. However, because 24-hour composite samples do not provide information about shorter-term and peak concentrations, potential for acute health effects and odors could not be fully evaluated.

Please contact me at 512-239-1822 or sethridg@tceq.state.tx.us if you have any questions regarding this memorandum.

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