

Midlothian Area Air Quality Health Consultation Summary Factsheet May 2012



The Agency for Toxic Substances and Disease Registry (ATSDR) and the Texas Department of State Health Services (DSHS) are conducting an extensive review of environmental health concerns raised by community members in Midlothian, Texas.



The goal of this review is to determine if chemical releases from local industrial facilities

could or have affected the health of people and animals in the area. The facilities of concern are three cement manufacturing facilities and a steel mill.



As a first step, ATSDR assessed the adequacy of the ambient air monitoring database for evaluating community health concerns. This enabled ATSDR to take a very careful look at the available monitoring data and determine whether or not it is suitable for use in health evaluations.

The Health Consultation used available data to identify pollutants, time frames, and locations that can be used to reach health conclusions; it also identified important gaps in the data.

For more information:

If you have questions about this document or ATSDR's ongoing work on the Midlothian facilities, please call ATSDR at 1-800-CDC-INFO and ask for information about the "Midlothian, Texas evaluations." If you have concerns about your health, you should contact your health care provider.

Conclusions

Has ambient air monitoring been conducted for all pollutants expected to be released from cement kilns and steel mills?

ATSDR found that air monitoring has occurred for some, but not all, of the expected pollutants identified in facility emission reports. Some monitoring data were available for:

- * all inorganic pollutants included in facility emission reports except for hydrochloric acid, sulfuric acid, and vapor-phase mercury,
- * volatile organic compounds (VOCs) and most criteria pollutants that the facilities have released in greatest quantities, and
- * lead, particulate matter, nitrogen oxides, and sulfur dioxides

ATSDR has identified gaps in the available environmental monitoring data because of:

- * a lack of air measurements for hydrochloric acid, sulfuric acid, and vapor-phase mercury,
- * a lack of less extensive monitoring for VOCs that the facilities released in small quantities,
- * a lack of ambient air monitoring done for semi-volatile organic compounds including dioxins, furans, and polycyclic aromatic hydrocarbons (PAHs), and
- * a lack of air monitoring data for carbon monoxide.

Has monitoring been conducted using scientifically defensible methods?

Nearly all monitoring conducted in the Midlothian area was done using scientifically defensible methods with detection limits low enough to determine potential health concerns.

Two important exceptions are:

- * air samples that were collected prior to 2001 were analyzed for metals (other than lead) using a method that was common at the time, but later found to potentially underestimate air pollution levels, and
- * the method that has been used to measure inorganics is known to underestimate concentrations of nitrates.

Are the monitoring data collected in the Midlothian area accurate, reliable, and of a known and high quality?

For the data generated, nearly all measurements were found to be reliable and to have met standard data quality objectives. However,

- * two types of monitoring devices were used to measure for fine particulate matter (PM_{2.5}) - a continuous monitor and a non-continuous monitor. The concentrations measured by the continuous monitoring device were consistently lower than the measurements made by the more reliable non-continuous device, and
- * several inorganics were consistently detected in filter blank samples.



Are valid monitoring data available for the time frames of greatest interest?

The answer to this question depends on the pollutant category. Below are the time frames of valid air measurements for each contaminant:

- * Particulate matter: 1981-1984 and 1991-2010
- * Lead: 1981-1984, 1992-1998, and 2001-2009
- * Inorganics (other than lead): 2001-2009
- * Volatile organic compounds: 1993-2009
- * Sulfur compounds: 1985 and 1995-2010
- * Nitrogen oxides: 2000-2010
- * Ozone: 1996-2010



Since there is no ambient air monitoring data available before 1981 and no air monitoring data collected in the vicinity of Ash Grove Cement during the years that facility was burning hazardous waste, ATSDR

concluded that there are gaps in the available environmental monitoring data that cannot be reliably filled by estimates.

Is ambient air monitoring being conducted at appropriate frequencies and durations?

The monitoring frequency in Midlothian ranges from sampling that occurs continuously to sampling that occurs every 6 days. The duration of individual samples ranges mostly from 1-hour averages to 24-hour averages and 5-minute average samples are available for sulfur dioxide. These frequencies and durations are consistent with monitoring methodologies commonly used throughout the country.



Are the monitoring stations placed in locations that adequately characterize outdoor air pollution?

The monitoring that has been conducted in Midlothian does not characterize air pollution levels at every single residential location over the entire history of facility operations. In ATSDR's judgment, the most notable gap in monitor placement is the lack of monitoring data for residential neighborhoods in immediate proximity to the four industrial facilities, where fugitive emissions would be expected to have the greatest air quality impacts.

Next Steps

By design, this Health Consultation does not include evaluations of human health or animal issues. The review of air pollution measurements in this document is the first of four Health Consultations that will evaluate environmental data. Beyond the four Health Consultations evaluating exposures in air and other environmental media (soil, sediment, plants, etc.) health outcome data and animal issues will be addressed in the last two Health Consultations.

