Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Patty Reeh, Regional Director, R11
Barry Kalda, Regional Air Manager, R11
Ramiro Garcia, Border and South Central Texas Area Director

Date: December 16, 2009

From: Tracie Phillips, Ph.D. TP
Toxicology Division, Chief Engineer's Office

Subject: Health Effects Review of 2008 Ambient Air Network Monitoring Data in Region 11 – Austin

Conclusions:

- Exposure to the reported annual average of the 84 reported volatile organic compounds (VOCs) and 14 metals reported as particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) for Region 11 – Austin would not be expected to cause chronic adverse health effects.

Background:

This memorandum conveys the Toxicology Division's (TD) evaluation of ambient air sampling conducted at two monitoring sites in Region 11 – Austin during 2008. The TD evaluated summary results for VOCs collected at a 24-hour every sixth day Community Air Toxics Monitoring Network (CATMN) site located at 2600 B Webberville Road in Austin, Texas (Figure 1). Summary results for metals ($PM_{2.5}$) were evaluated from a second monitoring site located at 12200 Lime Creek Road in Austin, Texas (Audubon) (Figure 2). TCEQ Region 11 monitoring site information is presented in Table 1. Table 2 lists the target analytes for both monitoring sites.

Table 1. Monitoring Site Information

City and Site Location	County	EPA Monitor ID	Monitored Compounds
Austin, Webberville Road	Travis	48-453-0021	VOCs
Austin, Audubon	Travis	48-453-0020	$PM_{2.5}$ Metals

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 by an asterisk on the target analyte table (Table 2). All other data collected (84 VOCs and 14 metals ($PM_{2.5}$)) for both monitoring sites met the data completeness objective of 75 percent data return. Because 24-hour air samples that are collected every six days are designed to provide representative long-term average concentrations, annual averages from 24-hour samples were evaluated for potential chronic health concerns. Annual average concentrations of the reported VOCs and metals

($PM_{2.5}$) were compared to their appropriate comparison values. Information on the values used can be obtained by contacting the TD at (512) 239-1795.

Evaluation:

VOCs
Of the 84 reported VOCs, annual average concentrations of 14 VOCs were detected. The 2008 annual average concentrations for all detected VOCs were less than their appropriate comparison values and therefore would not be expected to cause long-term adverse health effects.

Metals
Of the 14 reported $PM_{2.5}$ metals, annual average concentrations of 4 metals ($PM_{2.5}$) were detected. The 2008 annual average concentrations for all detected metals ($PM_{2.5}$) were less than their appropriate comparison values and therefore would not be expected to cause long-term adverse health effects.

Air Pollutant Watch List Area (APWL) 1101:
In February 2006 and in March 2007, mobile monitoring trips measured hydrogen sulfide (H_2S) levels downwind of Griffin Industries, which is located in Bastrop, Bastrop County, Texas, that exceeded the TCEQ state regulatory standard and odor threshold. These findings were consistent with the numerous odor complaints reported to the region over the years and with monitoring staff reports of intermittent strong odors observed throughout the sampling events. Due to TCEQ enforcement actions, Griffin has implemented corrective actions, which have resulted in a decline of odor complaints in this area. Subsequently, Griffin hired URS Corporation to monitor H_2S on December 10 – 11, 2008. All reported 30-minute average H_2S concentrations downwind of Griffin were below the H_2S net 30-minute state regulatory standard.

The TCEQ Toxicology Division (TD) proposed the removal of hydrogen sulfide (H_2S) from APWL1101 in September of 2009. However, during the 30-day public comment period which ended on October 5, 2009, the TCEQ Austin regional office received several odor complaints from citizens. In addition, strong odors were confirmed by TCEQ staff during a follow-up investigation in the area near Griffin. Due to this new information, as TD reassesses the site, it is likely that this site will remain on the APWL. The TD will continue to encourage all efforts to reduce odors in this area.

If you have any questions regarding this memorandum, please contact me at (512) 239-2269 or tphillip@tceq.state.tx.us.

cc (via e-mail): Ruben Casso, USEPA Region 6, Dallas
Susan Prosperie, Department of State Health Services

Table 2. VOCs and $PM_{2.5}$ Metals Evaluated

CATMN 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 (MTBE)**	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**	*Methyl Isobutyl Ketone**	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	
$PM_{2.5}$ Metals		
Aluminum	Chromium	Nickel
Antimony	Cobalt	Selenium
Arsenic	Copper	Tin
Barium	Manganese	Zinc
Cadmium	Molybdenum	

**Chemicals which were removed from the target analyte list in the third quarter of 2008. These chemicals do not meet the 75% data completeness objectives for 2008.*

Figure 1. Location of Austin Webberville Road Monitor

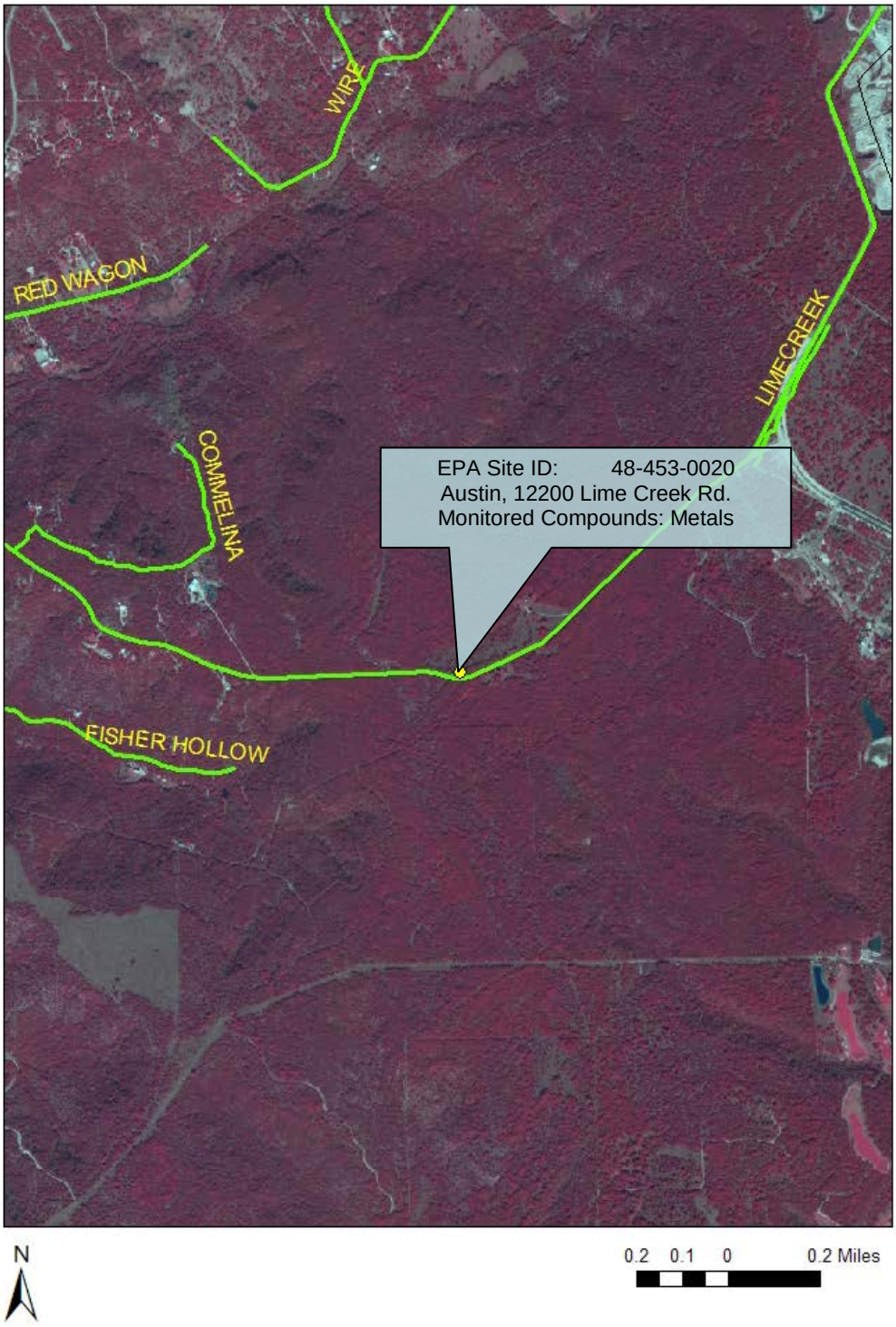

Figure 2. Location of Austin Audubon Monitor