Countywide Recycling & Disposal Facility
Ambient Air Monitoring
Monthly Report #21

February 20, 2009

To Fulfill the Requirements Set Forth in Order 5.A. of the Ohio EPA Director's Findings and Orders Dated March 28, 2007

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Countywide Recycling & Disposal Facility
Ambient Air Monitoring
Monthly Report #21

Monitoring Events #96 through 101
Supplemental Isolation Break Monitoring Events 1&2

February 20, 2009

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1.0 INTRODUCTION

1.1 Current Activities

As described in Section 1.2 below, beginning on Monday May 21, 2007 ambient air sampling is being conducted every six days as mandated by Order 5.A. of the Ohio EPA Director's Findings and Orders dated March 28, 2007. This report covers the analytical results from the following Community Monitoring Events.

Event #96: Wednesday December 17 to Thursday December 18
Event #97: Tuesday December 23 to Wednesday December 24
Event #98: Monday December 29 to Tuesday December 30
Event #99: Sunday January 4 to Monday January 5
Event #100: Saturday January 10 to Sunday January 11
Event #101: Friday January 16 to Saturday January 17

Coincident with excavation of the Isolation Break to separate the reaction areas from the rest of the landfill, supplemental monitoring for VOCs is being conducted in the period between the regularly scheduled every sixth-day community monitoring events. Although the samples are collected at the same community locations, the supplemental samples are collected for a period of 8-hours rather than 24-hours to correlate with monitoring being conducted on-site during the work day when active excavation is occurring. Analytical results the following Supplemental Isolation Break Monitoring Events are included in this Monthly Report #21.

Isolation Break Monitoring Event #3: Thursday January 8
Isolation Break Monitoring Event #4: Wednesday January 16
Isolation Break Monitoring Event #5: Tuesday January 20

In addition, validated results from the monitoring conducted for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF) on November 18 through 20, 2008 are also presented in this Monthly Report.

Previous Monthly Reports describe modifications that have been made to the sampling apparatus and sampling protocol to minimize/eliminate sources of variability. We previously indicated that the type of tubing used in the manifold to collect samples for aldehydes and for hydrogen fluoride and hydrogen chloride was switched from Tygon®

to Teflon®. However, given the possibility that the Teflon® tubing may be a source of fluoride ion, all manifold tubing was replaced with Tygon®. No other significant modifications have been made to the system during the time period reflected in this Monthly Report.

1.2 Background

As specified by the Ohio EPA in Bryan Zima's March 28, 2007 letter to Jason Perdion of Baker & Hostetler, air samples were analyzed for the following groups of compounds:

- Volatile Organic Compounds (VOCs): EPA Method TO-15 modified with Tentatively Identified Compounds (TICs)
- Sulfur Compounds: EPA Method TO-15 modified
- Aldehydes and Ketones: EPA Method TO-11A
- Hydrogen Fluoride and Hydrogen Chloride: NIOSH Method 7903

EPA Method TO-15 Modified analyses were performed by Test America Laboratories, Inc. 5815 Middlebrook Pike, Knoxville, TN 37921. EPA Method TO-11A and NIOSH Method 7903 were performed by Integrated Analytical Laboratory (IAL), Randolph, NJ. Certification numbers: ELAP-11402; NJDEP-14751; AIHA-100201.

In order to identify conditions that may be of concern, results from the community monitoring are compared to conservative risk-based concentrations for chemicals in air in non-occupational settings. The most conservative (lowest) comparison is to USEPA Region 9 Preliminary Remediation Goals (PRGs), followed by the Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). The differences between these screening levels are briefly discussed below.

The USEPA Region 9 PRG is the concentration of a chemical in the ambient air that is estimated to be without significant risk to a person who would breathe that level of chemical continuously over many decades. The Region 9 PRGs are derived using conservative mathematical formulas and do not represent the level of a chemical in the air (or other environmental media) where health effects are likely to occur. Region 9 PRGs are generally accepted as conservative screening values, such that if the concentration of a chemical in the air is less than the corresponding PRG, most public health officials and regulators are confident that there is no risk to human health. On the other hand, an analytical result that exceeds the corresponding PRG does not mean that there is an unacceptable risk to public health. The chemical that were detected in these Monitoring Events are commonly found at low levels in ambient air. For some compounds such as benzene, the mathematically-derived Region 9 PRG of 0.25 ug/m^3 is lower than the average background concentration of 1.96 ug/m^3 in ambient air in Ohio (Ohio EPA, *Portsmouth Ohio Air Quality Study 2003*). Consequently, finding certain chemicals in ambient air at levels above PRGs that are very close to analytical detection limits is not uncommon and may simply reflect fluctuations in background sources. It should be noted that not all of the compounds found in the air samples have corresponding PRGs.

Analytical results for VOCs are also compared to the ATSDR Acute and Chronic Minimum Risk Levels (MRLs) where available. A MRL is an estimate of the daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse non-cancer health effects over a specified duration of exposure. PRGs and MRLs are useful screening levels that assist risk assessors in identifying those chemicals that may pose a health concern. Neither PRGs nor MRLs represent levels of exposure that have been documented to cause actual health effects.

Chemicals that were detected below PRGs or MRLs will not be discussed unless those particular results help to explain other findings.

Ambient environmental/climate conditions are discussed in Section 2.0. Results of the monitoring are discussed in Section 3.0 and summarized in Section 4.0 of this report. Analytical results from the laboratory are provided in the Appendices.

2.0 AMBIENT CONDITIONS

The descriptions of ambient conditions are taken from the Daily Odor Monitoring Summary compiled by Countywide's consultant, Diversified Engineering.

Event #96: Wednesday December 17 to Thursday December 18
December 17: Average temperature in degrees F: 31, Max. 34, Min. 28.
Winds were 5 mph with a max speed of 10 mph out of the W.
Average relative humidity 86% with 0.05 inches of precipitation recorded.
Complaints: There were no odor complaints during this time
December 18: Average temperature in degrees F: 31, Max. 34, Min. 28
Winds were 2 mph with a max speed of 7 mph out of variable directions.
Average relative humidity 83% with no precipitation recorded.
Complaints: A complaint occurred at 11:00am from 3829 Seeman Street. Pump maintenance, isolation break excavation, pipe line repair, and extraction well raising were potentially odor-causing activities noted on the Daily Odor Monitoring Summary.

Event #97: Tuesday December 23 to Wednesday December 24
December 23: Average temperature in degrees F: 23, Max. 36, Min. 10.
Winds were 4 mph with max gusts of 20 mph out of the S.
Average relative humidity 63% with 0.02 inches of precipitation recorded.
Complaints: There were no odor complaints during this time.
December 24: Average temperature in degrees F: 44, Max. 54, Min. 35.
Winds were 6 mph with max gusts of 36 mph out of the SW.
Average relative humidity 86% with 1.07 inches of precipitation recorded.
Complaints: There were no odor complaints during this time.

Event #98: Monday December 29 to Tuesday December 30
December 29: Average temperature in degrees F: 36, Max. 48, Min. 23.
Winds were 5 mph with max gusts of 26 mph out of the SW.
Average relative humidity 65% with no precipitation recorded.

Complaints: There were no odor complaints during this time.
December 30: Average temperature in degrees F: 36, Max. 42, Min. 30
Winds were 5 mph with max gusts of 20 mph out of variable directions.
Average relative humidity 55% with no precipitation recorded.
Complaints: There were no odor complaints during this time.

Event #99: Sunday January 4 to Monday January 5
January 4: Average temperature in degrees F: 37, Max. 46, Min. 28.
Winds were 4 mph with max gusts of 21 mph out of variable directions.
Average relative humidity 83% with 0.07 inches of precipitation recorded.
Complaints: There were no odor complaints during this time.
January 5: Average temperature in degrees F: 30, Max. 35, Min. 25
Winds were 6 mph with max gusts of 17 mph out of the W.
Average relative humidity 67% with 0.01 inches of precipitation recorded.
Complaints: There were no odor complaints during this time.

Event #100: Saturday January 10 to Sunday January 11
January 10: Average temperature in degrees F: 30, Max. 32, Min. 27.
Winds were 3 mph with max gusts of 20 mph out of the E.
Average relative humidity 82% with 0.22 inches of precipitation recorded.
Complaints: A complaint occurred at 3:15pm from 9863 Sherman Church Avenue in Bolivar. Pump maintenance was a potentially odor-causing activity noted on the Daily Odor Monitoring Summary.
January 11: Average temperature in degrees F: 24, Max. 27, Min. 21
Winds were 5 mph with max gusts of 22 mph out of the NW.
Average relative humidity 83% with no precipitation recorded.
Complaints: There were no odor complaints during this time.

Event #101: Friday January 16 to Saturday January 17
January 16: Average temperature in degrees F: -2, Max. 6, Min. -9.
Winds were 6 mph with a max speed of 10 mph out of the W.
Average relative humidity 66% with no precipitation recorded.
Complaints: Complaints occurred at 9:04am from 3232 Downing Street SW in East Sparta; 4:17pm from 8338 Dueber Avenue in East Sparta; and 4:35pm from 8200 Dueber Avenue in East Sparta. Isolation break excavation was a potentially odor-causing activity noted on the Daily Odor Monitoring Summary.
January 17: Average temperature in degrees F: 6, Max. 30, Min. -17
Winds were 4 mph with max gusts of 18 mph out of the SSE.
Average relative humidity 64% with no precipitation recorded.
Complaints: A complaint occurred at 1:58pm from I-77 South between markers 96 and 97. There were no potentially odor-causing activities noted on the Daily Odor Monitoring Summary.

Supplemental Isolation Break Monitoring Event #3:
Thursday January 8 Average temperature in degrees F: 24, Max. 27, Min. 19.
Winds were 9 mph with max gusts of 28 mph out of the W.
Average relative humidity 73% with no precipitation recorded.

Supplemental Isolation Break Monitoring Event #4:
Wednesday January 14 Average temperature in degrees F: 31, Max. 34, Min. 28.
Winds were 5 mph with max gusts of 21 mph out of the W/WNW.
Average relative humidity 78% with 0.03 inches of precipitation recorded.
Complaints: Complaints occurred at 8:15pm from 8250 Dueber Avenue in East Sparta and 8:22pm from 8338 Dueber Avenue in East Sparta. Cell 8A vacuum connection, 5CD maintenance, and maintenance on flares #4 & #7 were potentially odor-causing activities noted on the Daily Odor Monitoring Summary.

Supplemental Isolation Break Monitoring Event #5:
Tuesday January 20 Average temperature in degrees F: 10, Max. 21, Min. 0.
Winds were 2 mph with max gusts of 16 mph out of the NW.
Average relative humidity 78% with no precipitation recorded.
Complaints: There were no odor complaints during this time

PCDD/PCDF Monitoring November 18 through 20, 2008
Tuesday November 18. Average temperature in degrees F: 26, Max. 29, Min. 22.
Winds were variable out of the NW/SE at 4 mph.
Average relative humidity 87% with 0.01 in. precipitation recorded.
Wednesday November 19. Average temperature in degrees F: 24, Max. 28, Min. 18.
Winds were out of the S/SE at 2.8 mph.
Average relative humidity 79% with no precipitation recorded.
Thursday November 20. Average temperature in degrees F: 31, Max. 33, Min. 27.
Winds were variable.
No precipitation was recorded.

3.0 ANALYTICAL RESULTS

The laboratory analyzed the air samples for a large number of chemicals. Only those results that exceeded Region 9 PRGs and/or ATSDR MRLs will be discussed in the body of this report (see Section 1.0). Other compounds may have been detected in a sample, but were quantified at concentrations below the respective PRG. Analytical results from the laboratory are provided in the Appendices.

Prevailing wind direction for the monitoring station relative to the landfill is designated as:
C: Crosswind
D: Downwind
U: Upwind
V: Variable

Wind direction is indicated for the first and second days of the regularly scheduled monitoring event separated by /. Wind direction for the Supplemental Isolation Break Monitoring Events pertains to the single day on which the sampling was conducted.

3.1 Volatile Organic Compounds

Compounds detected by Method TO-15 modified (TO-15M) are summarized in Tables 1 through 6. TO-15M analyzes air samples collected in a summa canister for the presence of an extensive list of volatile organic compounds. In addition to a "standard analyte" list, we have requested that the laboratory tentatively identify and estimate the concentration of numerous compounds that are not on the "standard" list. These Tentatively Identified Compounds (TICs) include some compounds for which there are other specific analytical methods, such as acetaldehyde which is a target analyte for EPA Method TO-11A (TO-11A). All of the TO-15M analyses presented in this monthly report were performed by Test America. Laboratory data reports are provided in the Appendices. The QA/QC packages from Test America are not included in the Appendices because of their large size but can be made available upon request.

Only VOCs that were detected at concentrations exceeding the respective Region 9 PRG (most conservative screening level) in one or more samples during a monitoring event are presented in the summary tables that follow. The results from the analytical laboratory can be found in the Appendix noted.

Event #96: Wednesday December 17 to Thursday December 18

Analytical results are summarized in Table 1 and provided in Appendix A.

Event #96: VOCs Detected Above PRGs
Concentrations in ug/m^3

Compound	Acute MRL	Chronic MRL	PRG	School	Co-loc School	Cell Tower	Camp ground	Wetland
Relative Wind Direction				C/V		C/V	C/V	D/V
Benzene	29	10	**0.25**	**0.80**	ND	**0.90**	**0.97**	**0.93**
Carbon tetrachloride	188	188	**0.13**	**0.60J**	ND	**0.68J**	**0.70J**	**0.68J**

NS=Not Sampled
ND= Not Detected
Bold indicates result exceeded Region 9 PRG
Shading indicates result exceeded ATSDR Minimum Risk Level (MRL)
Laboratory Data Qualifiers

B = Compound was detected in the blank
J = Estimated concentration below laboratory reporting limit

Event #97: Tuesday December 23 to Wednesday December 24

Analytical results are summarized in Table 2 and provided in Appendix B.

Event #97: VOCs Detected Above PRGs
Concentrations in ug/m^3

Compound	Acute MRL	Chronic MRL	PRG	School	Cell Tower	Camp ground	Co-loc Camp ground	Wetland
Relative Wind Direction				C/U	C/U	C/D		C/C
Benzene	29	10	**0.25**	**0.71**	**3.8**	**0.59J**	**0.60J**	**0.61J**
Carbon tetrachloride	188	188	**0.13**	**o.58J**	**ND**	**0.64J**	**0.54J**	**0.51J**

ND= Not detected

Bold indicates result exceeded Region 9 PRG

Shading indicates result exceeded ATSDR Minimum Risk Level (MRL)

Laboratory Data Qualifiers:

B = Compound was detected in the blank

J = Estimated concentration below laboratory reporting limit

Event #98: Monday December 29 to Tuesday December 30

Analytical results are summarized in Table 3 and provided in Appendix C.

Event #98: VOCs Detected Above PRGs
Concentrations in ug/m^3

Compound	Acute MRL	Chronic MRL	PRG	School	Cell Tower	Camp ground	Wet land	Co-loc Wet land
Relative Wind Direction				U/V	U/V	D/V	C/V	
Benzene	29	10	**0.25**	**1.1**	**0.67**	**0.65**	NR	**0.63**
Carbon tetrachloride	188	188	**0.13**	**0.77J**	**0.71J**	**0.54J**	NR	0.63J

ND= Not Detected

NR= No Result

Bold indicates result exceeded Region 9 PRG

Shading indicates result exceeded ATSDR Minimum Risk Level (MRL)

Laboratory Data Qualifiers:

B = Compound was detected in the blank

J = Estimated concentration below laboratory reporting limit

Event #99: Sunday January 4 to Monday January 5

Analytical results are summarized in Table 4 and provided in Appendix D.

Event #99: VOCs Detected Above PRGs
Concentrations in ug/m^3

Compound	Acute MRL	Chronic MRL	PRG	School	Cell Tower	Co-loc Cell Tower	Camp ground	Wet land
Relative Wind Direction				V/C	V/C		V/C	V/D
Benzene	29	10	**0.25**	**1.1**	**1.1**	**0.68**	**0.77**	**0.85**
Carbon tetrachloride	188	188	**0.13**	**0.59J**	**0.57J**	**0.55J**	**0.55J**	**0.57J**

ND= Not Detected
Bold indicates result exceeded Region 9 PRG
Shading indicates result exceeded ATSDR Minimum Risk Level (MRL)
Laboratory Data Qualifiers:

B = Compound was detected in the blank
J = Estimated concentration below laboratory reporting limit

Event #100: Saturday January 10 to Sunday January 11

Analytical results are summarized in Table 5 and provided in Appendix E.

Event #100: VOCs Detected Above PRGs
Concentrations in ug/m^3

Compound	Acute MRL	Chronic MRL	PRG	School	Co-loc School	Cell Tower	Camp ground	Wet land
Relative Wind Direction				C/C		C/C	C/C	U/C
Benzene	29	10	**0.25**	**0.93**	**0.78**	**0.70**	**0.85**	**0.96**
Carbon tetrachloride	188	188	**0.13**	**0.41J**	**0.53J**	**0.54J**	**0.42J**	**0.70J**

ND= Not Detected
Bold indicates result exceeded Region 9 PRG
Shading indicates result exceeded ATSDR Minimum Risk Level (MRL)
Laboratory Data Qualifiers:

B = Compound was detected in the blank
J = Estimated concentration below laboratory reporting limit

Event #101: Friday January 16 to Saturday January 17

Analytical results are summarized in Table 6 and provided in Appendix F.

Event #101: VOCs Detected Above PRGs
Concentrations in ug/m^3

Compound	Acute MRL	Chronic MRL	PRG	School	Cell Tower	Camp ground	Co-loc Camp ground	Wet land
Relative Wind Direction				C/C	C/C	C/C		D/U
Benzene	29	10	**0.25**	**1.0**	**1.0**	**1.1**	**1.1**	**0.83**
Carbon tetrachloride	188	188	**0.13**	**0.61J**	**0.52J**	**0.61J**	**0.60J**	**0.52J**

ND= Not Detected
Bold indicates result exceeded Region 9 PRG
Shading indicates result exceeded ATSDR Minimum Risk Level (MRL)
Laboratory Data Qualifiers:

B = Compound was detected in the blank
J = Estimated concentration below laboratory reporting limit

Supplemental Isolation Break Monitoring Event #3: 8-hour Sample, Thursday January 8, 2008

Analytical results are summarized in Table 7 and provided in Appendix G.

Isolation Break #1: VOCs Detected Above PRGs
Concentrations in ug/m^3

Compound	Acute MRL	Chronic MRL	PRG	School	Cell Tower	Camp ground	Wet land
Relative Wind Direction				C	C	C	D
Benzene	29	10	**0.25**	**0.72**	**0.67**	**0.70**	**0.85**
Carbon tetrachloride	188	188	**0.13**	**0.41J**	**0.60J**	**0.55J**	**0.44J**

ND= Not Detected
Bold indicates result exceeded Region 9 PRG
Shading indicates result exceeded ATSDR Minimum Risk Level (MRL)
Laboratory Data Qualifiers:
B = Compound was detected in the blank
J = Estimated concentration below laboratory reporting limit

Note: Consistent with the approved work plan for the supplemental isolation break monitoring, samples were analyzed only for BTEX compounds beginning in

Supplemental Isolation Break Monitoring Event #4: 8-hour Sample, Wednesday January 14, 2008

Analytical results are summarized in Table 8 and provided in Appendix H.

Isolation Break #4: VOCs Detected Above PRGs
Concentrations in ug/m^3

Compound	Acute MRL	Chronic MRL	PRG	School	Cell Tower	Camp ground	Wet land
Relative Wind Direction				C	C	C	D
Benzene	29	10	**0.25**	**0.78**	**0.74**	**0.71**	**0.65**

ND= Not Detected
Bold indicates result exceeded Region 9 PRG
Shading indicates result exceeded ATSDR Minimum Risk Level (MRL)
Laboratory Data Qualifiers:
B = Compound was detected in the blank
J = Estimated concentration below laboratory reporting limit

Supplemental Isolation Break Monitoring Event #5: 8-hour Sample, Tuesday January 20, 2008

Analytical results are summarized in Table 9 and provided in Appendix I.

Isolation Break #5: VOCs Detected Above PRGs
Concentrations in ug/m^3

Compound	Acute MRL	Chronic MRL	PRG	School	Cell Tower	Camp ground	Wet land
Relative Wind Direction				C	C	C	D
Benzene	29	10	**0.25**	**1.2**	**1.1**	**1.1**	**1.2**

ND= Not Detected
Bold indicates result exceeded Region 9 PRG
Shading indicates result exceeded ATSDR Minimum Risk Level (MRL)
Laboratory Data Qualifiers:

B = Compound was detected in the blank
J = Estimated concentration below laboratory reporting limit

3.2 Sulfur Compounds

Carbon disulfide was the only sulfur compound detected during the seven rounds of sampling reviewed in this report for which Method TO-15M was performed. All detections were extremely low concentrations and are included on the TO-15M Summary Tables.

3.3 Aldehydes and Ketones

In order to obtain a continuous 24 hours of data, three separate gel collection tubes were sequentially exposed to ambient air for a period of approximately 8-hours each. Consequently there are three separate sample results for each location for each monitoring event. Analysis for aldehydes and ketones by TO-11A was performed by Integrated Analytical Laboratories.

Although Method TO-11A analyzes for a number of carbonyl compounds, formaldehyde and acetaldehyde are most frequently detected and are the aldehydes of greatest potential concern from a public health standpoint. In addition to formaldehyde and acetaldehyde, the following compounds were also occasionally detected in the samples summarized in this Monthly Report #21: benzaldehyde, propionaldehyde and butyraldehyde. The results for these compounds are included on the laboratory reporting sheets found in the Appendices. Only results for formaldehyde and acetaldehyde are summarized in the tables below.

Note: As indicated previously, all tubing in the sampling apparatus manifolds is now Tygon®.

Event #96: Wednesday December 17 to Thursday December 18

The laboratory report is in Appendix A.

Event #96: Aldehydes
Concentrations in ug/m^3

Aldehyde	Acute MRL[1]	Chronic MRL[1]	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction with respect to Landfill				C/V			C/V			C/V			D/V		
				1	2	3	1	2	3	1	2	3	1	2	3
Formaldehyde	**50**	**10**	**0.15**	**1.6**	**1.2**	**1.6**	NR	NR	NR	**2.6**	**11**	**3.9**	**1.7**	**2.1**	**1.9**
Acetaldehyde	**NA**	**NA**	**0.87**	**1.2**	**0.92**	**1.2**	NR	NR	NR	**1.3**	**5.9**	**3.4**	**1.1**	**1.5**	**1.4**

ATSDR Minimal Risk Levels (MRL) (ATSDR Toxicological Profile for Formaldehyde, July 1999)
Acute MRL 0.04 ppm = 50 ug/m^3; Chronic MRL 0.008 ppm=10 ug/m^3
NA: Not available
NR: No result available

Event #97: Tuesday December 23 to Wednesday December 24

The laboratory report is in Appendix B.

Event #97: Aldehydes
Concentrations in ug/m^3

Aldehyde	Acute MRL[1]	Chronic MRL[1]	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction with respect to Landfill				U/U			U/U			D/D			C/C		
				1	2	3	1	2	3	1*	2*	3*	1	2	3
Formaldehyde	**50**	**10**	**0.15**	**1.7**	**1.4**	**1.2**	NR	NR	**2.4**	ND	ND	ND	**1.8**	**1.7**	**1.7**
Acetaldehyde	**NA**	**NA**	**0.87**	**1.7**	**0.92**	**1.0**	NR	NR	**1.1**	ND	ND	ND	**1.4**	**1.2**	**1.1**

ATSDR Minimal Risk Levels (MRL) (ATSDR Toxicological Profile for Formaldehyde, July 1999)
Acute MRL 0.04 ppm = 50 ug/m^3; Chronic MRL 0.008 ppm=10 ug/m^3
NA: Not available
ND: Not Detected
NR: No result available
*Per field notes, it is likely that the pump failed at the Campground location rendering these sample results unreliable.

Event #98: Monday December 29 to Tuesday December 30

The laboratory report is in Appendix C.

Event #98: Aldehydes
Concentrations in ug/m^3

Aldehyde	Acute MRL[1]	Chronic MRL[1]	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction with respect to Landfill				U/V			U/V			D/V			C/V		
				1	2	3	1	2	3	1	2	3	1	2	3
Formaldehyde	**50**	**10**	**0.15**	**2.9**	**1.0**	**2.5**	**2.9**	**1.4**	**2.8**	**3.4**	**0.86**	**4.3**	**3.1**	**1.5**	**3.6**
Acetaldehyde	**NA**	**NA**	**0.87**	**2.2**	0.86	**1.4**	**1.6**	**1.1**	**1.5**	**2.0**	0.75	**2.7**	**2.1**	**1.1**	**1.8**

ATSDR Minimal Risk Levels (MRL) (ATSDR Toxicological Profile for Formaldehyde, July 1999)
Acute MRL 0.04 ppm = 50 ug/m^3; Chronic MRL 0.008 ppm=10 ug/m^3
NA: Not Available
ND: Not Detected
NR: No result available

Event #99: Sunday January 4 to Monday January 5
The laboratory report is in Appendix D.

Event #99: Aldehydes
Concentrations in ug/m^3

Aldehyde	Acute MRL[1]	Chronic MRL[1]	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction with respect to Landfill				V/C			V/C			V/C			V/D		
				1	2	3	1	2	3	1	2	3	1	2	3
Formaldehyde	**50**	**10**	**0.15**	**3.3**	**1.5**	**2.4**	**2.8**	**1.8**	**4.3**	**3.4**	**1.8**	**2.5**	**2.5**	**1.7**	**2.5**
Acetaldehyde	**NA**	**NA**	**0.87**	**3.3**	**1.3**	**1.4**	**1.8**	**1.3**	**2.1**	**2.1**	**1.3**	**1.7**	**2.0**	**1.4**	**1.4**

ATSDR Minimal Risk Levels (MRL) (ATSDR Toxicological Profile for Formaldehyde, July 1999)
Acute MRL 0.04 ppm = 50 ug/m^3; Chronic MRL 0.008 ppm=10 ug/m^3
NA: Not Available
ND: Not Detected
NR: No result available

Event #100: Saturday January 10 to Sunday January 11
Analytical results are provided in Appendix E.

Event #100: Aldehydes
Concentrations in ug/m^3

Aldehyde	Acute MRL[1]	Chronic MRL[1]	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction with respect to Landfill				C/C			C/C			C/C			U/D		
				1	2	3	1	2	3	1	2	3	1	2	3
Formaldehyde	**50**	**10**	**0.15**	**2.9**	**1.6**	**1.5**	**3.2**	**1.9**	**2.0**	**3.8**	**1.7**	**1.7**	**2.5**	**2.0**	**2.4**
Acetaldehyde	**NA**	**NA**	**0.87**	**3.5**	**1.1**	**1.0**	**2.1**	**1.4**	**1.2**	**2.3**	**1.2**	**1.3**	**2.1**	**1.5**	**2.3**

ATSDR Minimal Risk Levels (MRL) (ATSDR Toxicological Profile for Formaldehyde, July 1999)
Acute MRL 0.04 ppm = 50 ug/m^3; Chronic MRL 0.008 ppm=10 ug/m^3
NA: Not Available
ND: Not Detected
NR: No result available

Event #101: Friday January 16 to Saturday January 17
Analytical results are provided in Appendix F.

Event #101: Aldehydes
Concentrations in ug/m^3

Aldehyde	Acute MRL[1]	Chronic MRL[1]	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction with respect to Landfill				C/C			C/C			C/C			D/U		
				1	2	3	1*	2	3	1	2	3	1	2	3
Formaldehyde	**50**	**10**	**0.15**	**2.7**	**2.2**	**1.9**	NR	**1.7**	**1.5**	**1.4**	ND	ND	**1.5**	**0.81**	**0.62**
Acetaldehyde	**NA**	**NA**	**0.87**	**2.7**	**2.2**	**1.8**	NR	**1.8**	**1.5**	**2.2**	ND	ND	**1.8**	0.80	ND

ATSDR Minimal Risk Levels (MRL) (ATSDR Toxicological Profile for Formaldehyde, July 1999)
Acute MRL 0.04 ppm = 50 ug/m^3; Chronic MRL 0.008 ppm=10 ug/m^3
NA: Not Available
ND: Not Detected
NR: No result available
*During preparation of this sample, some of the sorbent media was lost from the front half of the tube, rendering the results unreliable.

3.4 Hydrogen Chloride and Hydrogen Fluoride

As with the aldehyde and ketone samples, three separate gel collection tubes were sequentially exposed to ambient air for a period of approximately 8-hours each. Consequently there are three separate sample results for each location for each monitoring event. The concentrations of HF and HCl in the air are quantified based on the mass of fluoride and chloride ion captured on the gel inside the tubes and the volume of air that was passed through the tube. See the Note in Section 3.3 above regarding changes in the type of tubing on the manifold for collecting aldehyde and HF/HCl samples.

Analytical results for sampling events #92 through #95 are summarized below. All detected concentrations were very low and did not approach levels of potential concern.

Event #96: Wednesday December 17 to Thursday December 18
Analytical results are in Appendix A.

Event #96: Hydrogen Fluoride and Hydrogen Chloride
Concentrations in ug/m3

Compound	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction													
		1*	2	3	1	2	3*	1*	2	3	1	2*	3*
HF	NA	13	5	6.9	NR	NR	NR	17	49	29	7.8	15	13
HCl	21	ND	ND	ND	NR	NR	NR	ND	ND	17	ND	ND	ND

NA: Not Available
ND: Not Detected
NR: No result available
*Breakthrough from the front to the back of the sorbent tube for fluoride ion.

Event #97: Tuesday December 23 to Wednesday December 24
Analytical results are in Appendix B.

Event #97: Hydrogen Fluoride and Hydrogen Chloride Concentrations in ug/m3

Compound	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction													
		1	2	3	1	2	3	1*	2*	3*	1	2	3
HF	NA	ND	ND	ND	NR	NR	ND	NR	NR	NR	ND	ND	ND
HCl	21	ND	ND	ND	NR	NR	ND	NR	NR	NR	ND	ND	ND

NA: Not Available
ND: Not Detected
NR: No result available
*Per field notes, it is likely that the pump failed at the Campground location rendering these sample results unreliable.

Event #98: Monday December 29 to Tuesday December 30
Analytical results are in Appendix C.

Event #98: Hydrogen Fluoride and Hydrogen Chloride Concentrations in ug/m3

Compound	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction													
		1	2	3	1	2	3	1	2	3	1	2	3
HF	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HCl	21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NA: Not Available
ND: Not Detected
NR: No result available

Event #99: Sunday January 4 to Monday January 5
Analytical results are in Appendix D.

Event #99: Hydrogen Fluoride and Hydrogen Chloride Concentrations in ug/m3

Compound	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction													
		1	2	3	1	2	3	1	2	3	1	2	3
HF	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HCl	21	ND	5.6	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND

NA: Not Available
ND: Not Detected
NR: No result available

Event #100: Saturday January 10 to Sunday January 11
Analytical results are provided in Appendix E.

Event #100: Hydrogen Fluoride and Hydrogen Chloride Concentrations in ug/m3

Compound	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction													
		1	2	3	1	2	3	1	2	3	1	2	3
HF	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HCl	21	3.4	ND	ND	ND	ND	ND	ND	ND	10	2.9	3.0	ND

NA: Not Available
ND: Not Detected
NR: No result available

Event #101: Friday January 16 to Saturday January 17
Analytical results are provided in Appendix F.

Event #101: Hydrogen Fluoride and Hydrogen Chloride Concentrations in ug/m3

Compound	PRG	School			Cell Tower			Campground			Wetland		
Prevailing Wind Direction													
		1	2	3	1	2	3	1	2	3	1	2	3
HF	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HCl	21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NA: Not Available
ND: Not Detected
NR: No result available

3.5 Monitoring for PCDD/PCDF

In accordance with Revision 3 (November 10, 2008) of the *Plan for Sampling for Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans in the Vicinity of Countywide Recycling & Disposal Facility* (Work Plan) and the Task Specific Quality Work Plan, Republic Services of Ohio II, LLC (Republic) conducted monitoring for the presence of polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in the vicinity of the Countywide Site during November 2008. This monitoring was conducted to comply with Order 1 of Ohio EPA Director's Final Findings and Orders (DFFOs) issued on February 7, 2008,

3.5.1 Monitoring Locations and Methodology

Republic collected samples for PCDD/PCDF analysis by U.S. EPA Compendium Method TO-9A [EPA/625/R-96/010b] which includes constituent-specific analysis for the chlorinated dioxins and furans. Samples were collected from the four established community monitoring locations created in accordance with Order 5.A of the March 2007 Orders plus one additional background location. These monitoring locations are:

- the Cell Tower on the southwest portion of the Countywide RDF facility;
- the KOA campground on Downing Street;
- a location in the publicly-owned wetland area between Dueber Avenue and the eastern slope of the landfill,
- the Bolivar School, and
- a new background location at from the Strasburg ball field – a location that is approximately 5 miles Southwest of the landfill (upwind), west of Interstate 77, and in a less industrialized area. The Strasburg location is intended to be sufficiently far away and in the prevailing upwind direction relative to the landfill as to represent regional background conditions.

Samples were collected from November 18, 2008, to November 20, 2008 – a time prior to the beginning of excavation of the Isolation Break. Republic collected air samples for PCDDs/PCDFs for a period of 24 consecutive hours to obtain proper sample volume and mass (at the prescribed flow rate) using high-volume sampling machines fitted with polyurethane foam (PUF) sorbent filters. In order to securely deploy the monitoring equipment to perform the PCDD/PCDF sampling, Republic set up the Cell Tower, Campground, Wetland, and School samplers in the same enclosures currently used for the community monitors. The new Strasburg Ball field location was secured with snow fence. 110v power was provided to all locations using a propane generator. The GPS coordinates and the approximate locations of the sampling are shown on Figure 1.

In order to serve as a check on the laboratory, a duplicate sample was collected from the Bolivar School location and submitted to a second laboratory (Columbia Analytical Services).

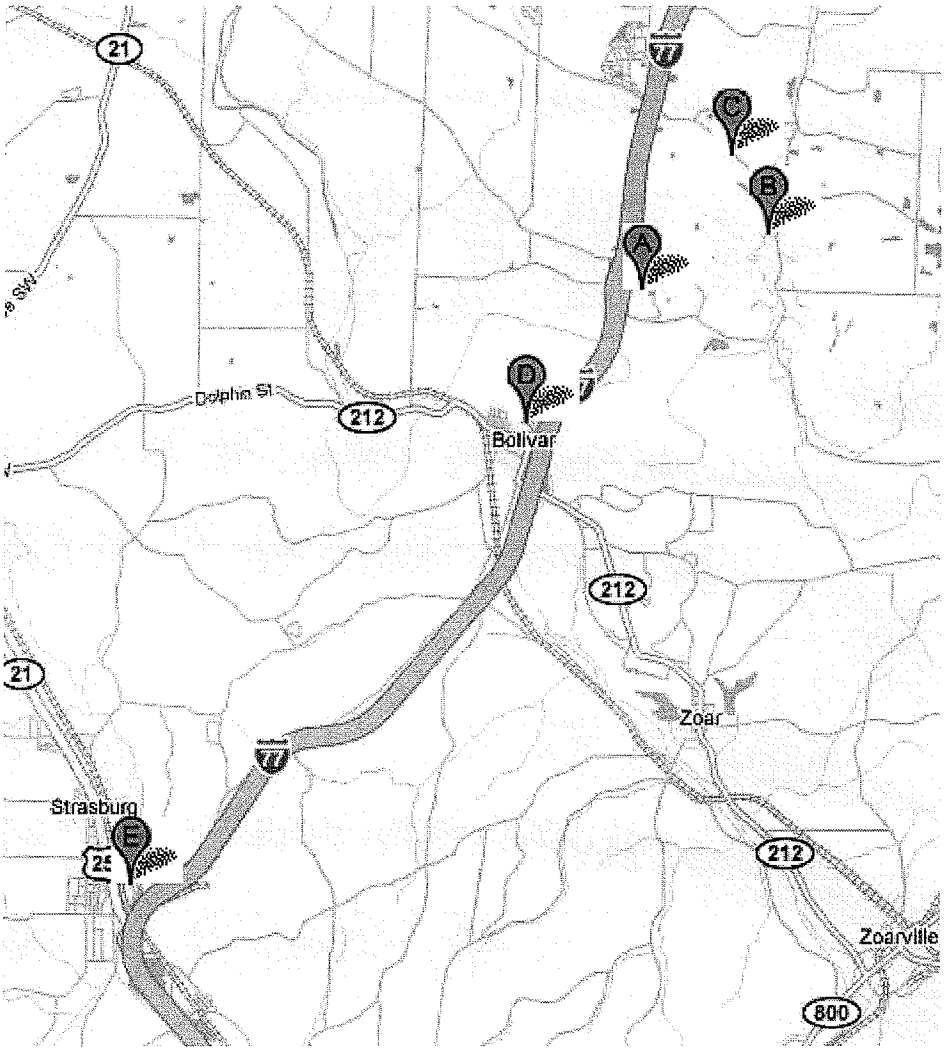
In order to avoid potential cross-contamination of the regularly scheduled community sampling, the PCDD/PCDF sampling began only after the community sampling was complete. Propane generators were used to provide power to the sampling apparatus. However, one of the generators malfunctioned. It was replaced and the campground sample was collected from November 19 through November 20, 2008.

The wind was out of the west southwest (WSW), making the Strasburg and School samples the most upwind relative to the landfill location.

3.5.2 Analytical Results

The results of the TO-9A analyses are summarized in Table 1 below. Results from Columbia Analytical Laboratories (the duplicate sample from the School location) have not yet been validated and are not presented in this Monthly Report. Analytical results from Test America are provided in Appendix J, and a report of the quality assurance and data validation performed by EarthTech/AECOM is provided in Appendix K.

Figure 1. Map of Community Monitoring Locations



Map of Proposed Locations of the Dioxin Samplers

A.	Cell Tower	W 40.6701	N 81.43295
B.	Wetland	W 40.67773	N 81.41085
C.	Campground	W 40.68815	N 81.4174
D.	School	W 40.65273	N 81.4534
E.	Strasburg	W 40.5917	N 81.5229

Table 1. Summary of Dioxin/Furan Results by Site (November 18-20, 2008)

Analyte	Wetland (pg/m3)	Cell_Tower (pg/m3)	Strasburg (pg/m3)	School (pg/m3)	Campground (pg/m3)
2,3,7,8-TCDF	0.013635	0.016812	0.018594	0.01084	ND
2,3,7,8-TCDD	ND	ND	ND	ND	ND
1,2,3,7,8-PeCDF	0.018748	0.006356	0.009039	ND	ND
2,3,4,7,8-PeCDF	0.036219	0.009021	0.011105	ND	ND
1,2,3,7,8-PeCDD	ND	ND	0.018852	ND	ND
1,2,3,4,7,8-HxCDF	0.04048	0.012096	0.016012	0.015217	ND
1,2,3,6,7,8-HxCDF	0.038349	ND	ND	ND	ND
2,3,4,6,7,8-HxCDF	0.034088	ND	0.013171	ND	ND
1,2,3,7,8,9-HxCDF	ND	ND	ND	ND	ND
1,2,3,4,7,8-HxCDD	0.0098	0.010251	0.021951	ND	ND
1,2,3,6,7,8-HxCDD	0.01747	0.022552	0.03099	0.010214	0.005265
1,2,3,7,8,9-HxCDD	0.027697	0.032803	0.043903	0.020845	ND
1,2,3,4,6,7,8-HpCDF	0.123569	0.047155	0.069728	0.037522	0.012847
1,2,3,4,7,8,9-HpCDF	0.014914	ND	ND	ND	ND
1,2,3,4,6,7,8-HpCDD	0.189615	0.307532	0.516501	0.27099	0.101092
OCDF	0.087351	0.084059	0.090388	0.054198	
OCDD	0.596542	0.922596	1.652803	1.063114	0.421218

Key: ND=not detected
2,3,7,8-TCDF: 2,3,7,8-tetrachlorodibenzofuran
2,3,7,8-TCDD: 2,3,7,8-tetrachlorodibenzo-p-dioxin
1,2,3,7,8-PeCDF: 1,2,3,7,8-pentachlorodibenzofuran
2,3,4,7,8-PeCDF: 2,3,4,7,8-pentachlorodibenzofuran
1,2,3,7,8-PeCDD: 1,2,3,7,8-pentachlorodibenzo-p-dioxin
1,2,3,4,7,8-HxCDF: 1,2,3,4,7,8-hexachlorodibenzofuran
1,2,3,6,7,8-HxCDF: 1,2,3,6,7,8-hexachlorodibenzofuran
2,3,4,6,7,8-HxCDF: 2,3,4,6,7,8-hexachlorodibenzofuran
1,2,3,7,8,9-HxCDF: 1,2,3,7,8,9-hexachlorodibenzofuran
1,2,3,4,7,8-HxCDD: 1,2,3,4,7,8-hexachlorodibenzo-p-dioxin
1,2,3,6,7,8-HxCDD: 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin
1,2,3,7,8,9-HxCDD: 1,2,3,7,8,9-hexachlorodibenzo-p-dioxin
1,2,3,4,6,7,8-HpCDF: 1,2,3,4,6,7,8-heptachlorodibenzofuran
1,2,3,4,7,8,9-HpCDF: 1,2,3,4,7,8,9-heptachlorodibenzofuran
1,2,3,4,6,7,8-HpCDD: 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin
OCDF: octachlorodibenzofuran
OCDD: octachlorodibenzo-p-dioxin

These results were validated and considered usable. In accordance with data validation protocols, a maximum possible concentration was reported for those constituents that were also detected in the blank. Thus, the concentrations and related values should be considered upper bound values.

Republic conducted a risk analysis of the analytical findings in accordance with the U.S. EPA Toxic Equivalency Factors (TEFs) method (EPA/625/3-89/016), which relates all toxicity values of the various dioxin and furan congeners to the toxicity of 2,3,7,8-tetrachloro-p-dioxin (2,3,7,8-TCDD). The concentrations of any PCDD/PCDF congeners that are detected were converted to 2,3,7,8-TCDD equivalents and added together to obtain a total TCDD-risk-equivalent concentration for the purposes of evaluating potential risk.

The results are converted to toxic equivalent concentrations (TEQs) of 2,3,7,8-TCDD by multiplying the concentration by the US EPA TEF's. The resulting TEQs are summed for each sample to yield a total TCDD-risk equivalent concentration (TEQ) for each sample. These results are summarized in Tables 2-6.

Table 2. Summary of Data and Calculations for the Wetland Sample, November 2008

Analyte	pg detected in sample	m3 of air sampled	Result (pg/m3)	Toxicity Equivalent Factor (TEF)	Toxicity Equivalent Concentration (TEQ, in pg/m3)
2,3,7,8-TCDF	**6.4**	469.372	0.013635	0.1	0.001364
2,3,7,8-TCDD	ND	469.372	ND	1	
1,2,3,7,8-PeCDF	**8.8**	469.372	0.018748	0.05	0.000937
2,3,4,7,8-PeCDF	17	469.372	0.036219	0.5	0.018109
1,2,3,7,8-PeCDD	ND	469.372	ND	0.5	
1,2,3,4,7,8-HxCDF	19	469.372	0.04048	0.1	0.004048
1,2,3,6,7,8-HxCDF	18	469.372	0.038349	0.1	0.003835
2,3,4,6,7,8-HxCDF	16	469.372	0.034088	0.1	0.003409
1,2,3,7,8,9-HxCDF	ND	469.372	ND	0.1	
1,2,3,4,7,8-HxCDD	**4.6**	469.372	0.0098	0.1	0.00098
1,2,3,6,7,8-HxCDD	8.2	469.372	0.01747	0.1	0.001747
1,2,3,7,8,9-HxCDD	13	469.372	0.027697	0.1	0.00277
1,2,3,4,6,7,8-HpCDF	58	469.372	0.123569	0.01	0.001236
1,2,3,4,7,8,9-HpCDF	**7**	469.372	0.014914	0.01	0.000149
1,2,3,4,6,7,8-HpCDD	89	469.372	0.189615	0.01	0.001896
OCDF	41	469.372	0.087351	0.001	8.74E-05
OCDD	280	469.372	0.596542	0.001	0.000597
Total TEQ					**0.041164**
Bold results = EMPC	**Estimated Maximum Possible Concentration**				

Table 3. Summary of Data and Calculations for the Cell Tower, November 2008

Analyte	pg detected in sample	m3 of air sampled	Result (pg/m3)	Toxicity Equivalent Factor (TEF)	Toxicity Equivalent Concentration (TEQ, in pg/m3)
2,3,7,8-TCDF	**8.2**	487.754	0.016812	0.1	0.001681
2,3,7,8-TCDD	ND	487.754	ND	1	
1,2,3,7,8-PeCDF	**3.1**	487.754	0.006356	0.05	0.000318
2,3,4,7,8-PeCDF	**4.4**	487.754	0.009021	0.5	0.00451
1,2,3,7,8-PeCDD	ND	487.754	ND	0.5	
1,2,3,4,7,8-HxCDF	5.9	487.754	0.012096	0.1	0.00121
1,2,3,6,7,8-HxCDF	ND	487.754	ND	0.1	
2,3,4,6,7,8-HxCDF	ND	487.754	ND	0.1	
1,2,3,7,8,9-HxCDF	ND	487.754	ND	0.1	
1,2,3,4,7,8-HxCDD	**5**	487.754	0.010251	0.1	0.001025
1,2,3,6,7,8-HxCDD	11	487.754	0.022552	0.1	0.002255
1,2,3,7,8,9-HxCDD	16	487.754	0.032803	0.1	0.00328
1,2,3,4,6,7,8-HpCDF	23	487.754	0.047155	0.01	0.000472
1,2,3,4,7,8,9-HpCDF	ND	487.754	ND	0.01	
1,2,3,4,6,7,8-HpCDD	150	487.754	0.307532	0.01	0.003075
OCDF	41	487.754	0.084059	0.001	8.41E-05
OCDD	450	487.754	0.922596	0.001	0.000923
Total TEQ					**0.018833**
Bold results = EMPC	**Estimated Maximum Possible Concentration**				

Table 4. Summary of Data and Calculations for the Strasburg Park Sample, November 2008

Analyte	pg detected in sample	m3 of air sampled	Result (pg/m3)	Toxicity Equivalent Factor (TEF)	Toxicity Equivalent Concentration (TEQ, in pg/m3)
2,3,7,8-TCDF	**7.2**	387.221	0.018594	0.1	0.001859
2,3,7,8-TCDD	ND	387.221	ND	1	
1,2,3,7,8-PeCDF	**3.5**	387.221	0.009039	0.05	0.000452
2,3,4,7,8-PeCDF	4.3	387.221	0.011105	0.5	0.005552
1,2,3,7,8-PeCDD	7.3	387.221	0.018852	0.5	0.009426
1,2,3,4,7,8-HxCDF	6.2	387.221	0.016012	0.1	0.001601
1,2,3,6,7,8-HxCDF	ND	387.221	ND	0.1	
2,3,4,6,7,8-HxCDF	5.1	387.221	0.013171	0.1	0.001317
1,2,3,7,8,9-HxCDF	ND	387.221	ND	0.1	
1,2,3,4,7,8-HxCDD	8.5	387.221	0.021951	0.1	0.002195
1,2,3,6,7,8-HxCDD	12	387.221	0.03099	0.1	0.003099
1,2,3,7,8,9-HxCDD	**17**	387.221	0.043903	0.1	0.00439
1,2,3,4,6,7,8-HpCDF	27	387.221	0.069728	0.01	0.000697
1,2,3,4,7,8,9-HpCDF	ND	387.221	ND	0.01	
1,2,3,4,6,7,8-HpCDD	200	387.221	0.516501	0.01	0.005165
OCDF	35	387.221	0.090388	0.001	9.04E-05
OCDD	640	387.221	1.652803	0.001	0.001653
Total TEQ					**0.037498**
Bold results = EMPC	**Estimated Maximum Possible Concentration**				

Table 5. Summary of Data and Calculations for the School Sample, November 2008

School	pg detected in sample	m3 of air sampled	Result (pg/m3)	Toxicity Equivalent Factor (TEF)	Toxicity Equivalent Concentration (TEQ, in pg/m3)
2,3,7,8-TCDF	**5.2**	479.723	0.01084	0.1	0.001084
2,3,7,8-TCDD	ND	479.723	ND	1	
1,2,3,7,8-PeCDF	ND	479.723	ND	0.05	
2,3,4,7,8-PeCDF	ND	479.723	ND	0.5	
1,2,3,7,8-PeCDD	ND	479.723	ND	0.5	
1,2,3,4,7,8-HxCDF	7.3	479.723	0.015217	0.1	0.001522
1,2,3,6,7,8-HxCDF	ND	479.723	ND	0.1	
2,3,4,6,7,8-HxCDF	ND	479.723	ND	0.1	
1,2,3,7,8,9-HxCDF	ND	479.723	ND	0.1	
1,2,3,4,7,8-HxCDD	ND	479.723	ND	0.1	
1,2,3,6,7,8-HxCDD	**4.9**	479.723	0.010214	0.1	0.001021
1,2,3,7,8,9-HxCDD	10	479.723	0.020845	0.1	0.002085
1,2,3,4,6,7,8-HpCDF	18	479.723	0.037522	0.01	0.000375
1,2,3,4,7,8,9-HpCDF	ND	479.723	ND	0.01	
1,2,3,4,6,7,8-HpCDD	130	479.723	0.27099	0.01	0.00271
OCDF	26	479.723	0.054198	0.001	5.42E-05
OCDD	510	479.723	1.063114	0.001	0.001063
Total TEQ					**0.009914**
Bold results = EMPC	**Estimated Maximum Possible Concentration**				

Table 6. Summary of Data and Calculations for the Campground Sample, 11/2008

Analyte	pg detected in sample	m3 of air sampled	Result (pg/m3)	Toxicity Equivalent Factor (TEF)	Toxicity Equivalent Concentration (TEQ, in pg/m3)
2,3,7,8-TCDF	ND	474.814	ND	0.1	
2,3,7,8-TCDD	ND	474.814	ND	1	
1,2,3,7,8-PeCDF	ND	474.814	ND	0.05	
2,3,4,7,8-PeCDF	ND	474.814	ND	0.5	
1,2,3,7,8-PeCDD	ND	474.814	ND	0.5	
1,2,3,4,7,8-HxCDF	ND	474.814	ND	0.1	
1,2,3,6,7,8-HxCDF	ND	474.814	ND	0.1	
2,3,4,6,7,8-HxCDF	ND	474.814	ND	0.1	
1,2,3,7,8,9-HxCDF	ND	474.814	ND	0.1	
1,2,3,4,7,8-HxCDD	ND	474.814	ND	0.1	
1,2,3,6,7,8-HxCDD	**2.5**	474.814	0.005265	0.1	0.000527
1,2,3,7,8,9-HxCDD	ND	474.814	ND	0.1	
1,2,3,4,6,7,8-HpCDF	**6.1**	474.814	0.012847	0.01	0.000128
1,2,3,4,7,8,9-HpCDF	ND	474.814	ND	0.01	
1,2,3,4,6,7,8-HpCDD	48	474.814	0.101092	0.01	0.001011
OCDF	ND	474.814		0.001	
OCDD	200	474.814	0.421218	0.001	0.000421
Total TEQ					**0.002087**
Bold results = EMPC	**Estimated Maximum Possible Concentration**				

The TEQ was compared to the U.S. EPA Region 9 Region 9 Preliminary Remediation Goal (PRG, 4.5 E-08 ug/m^3 = 0.045 pg/m^3) for 2,3,7,8-TCDD as summarized in Table 7.

Table 7. Summary of 2,3,7,8-TCDD-Risk-Equivalent Concentration (TEQ)by Site Comparison to USEPA Region 9 PRG

Sampling Date	Sampling Location	USEPA Reg. 9 PRG (pg/m^3)	TEQ (pg/m^3)*
11/18-11/19/2008	Wetland	0.045	0.0411
11/18-11/19/2008	Cell Tower	0.045	0.0189
11/18-11/19/2008	School	0.045	0.00991
11/19-11/20/2008	Campground	0.045	0.00209
11/18-11/19/2008	Strasburg	0.045	0.0375

*TEQ: Toxic Equivalent Concentration (to 2,3,7,8-TCDD)
TEQ's calculated using US EPA Toxic Equivalency Factors

The TEQ concentrations range from 0.00209 pg/m^3 to 0.0411 pg/m^3. All samples from all locations are below the very conservative Region 9 PRG for 2,3,7,8-TCDD even using the estimated maximum possible concentrations for dioxins.

4.0 SUMMARY

4.1 Volatile Organic Compounds

Benzene and carbon tetrachloride were present in all samples from all locations (both the regularly scheduled monitoring and the additional Isolation break monitoring) at very low concentrations that were above the very conservative respective Region 9 PRGs but well below the ATSDR chronic MRLs. No other VOCs were reported to be present at concentrations above the respective Region 9 PRGs.

The concentrations of benzene reported from the 8-hour Isolation Break sampling events were comparable to the concentrations reported from the regularly scheduled 24-hour samples. Since the specific VOC compounds and the concentrations of those compounds found during the 8-hour samples were comparable to those found in the 24-hour samples, the analytical parameters for the 8-hour samples were reduced from the full range of TO-15 analytes to BTEX compounds starting on January 14. This is consistent with the Isolation Break Monitoring Plan.

All of the reported benzene concentrations were within the range of background levels reported in the literature and by other investigators. As mentioned in previous Monthly Reports, there are numerous local and area sources of benzene and related compounds, including lawn mowing, emissions from the heavy equipment working on the nearby expansion area of the landfill, motor vehicles near the monitoring equipment, the Marathon refinery on the south side of Canton, and the landfill. The sources of carbon tetrachloride are not known, but the consistently low concentrations of this environmentally persistent compound across all monitoring locations indicate that like the benzene, it is not related to the landfill.

Note: For all of the compounds that were measured at concentrations (or estimated concentrations as designated by a "J" qualifier) above the Region 9 PRGs, the PRG value is either very near or in some cases below the reporting limit for the analytical laboratory. Consequently almost any quantifiable detection of the chemical will exceed the highly conservative Region 9 PRG. The ATSDR MRLs provide a more realistic basis of comparison since all of the MRLs are above the range of laboratory reporting limits for those compounds that have MRLs.

4.2 Aldehydes (Carbonyl Compounds)

Formaldehyde and acetaldehyde (less frequently) were detected at all sampling locations. The Region 9 PRGs for formaldehyde (0.15 ug/m^3) and acetaldehyde (0.87 ug/m^3) are very close to the laboratory reporting limits for these chemicals. Consequently, almost any measurable levels of formaldehyde and acetaldehyde will exceed the respective Region 9 PRG. The ATSDR Acute (50 ug/m3) and Chronic (10 ug/m3) MRLs are more relevant guidelines for interpreting the analytical results.

The range of concentrations of formaldehyde and acetaldehyde recorded from mid-December through mid-January were similar to those reported during the previous month.

None of the formaldehyde results included in this Monthly Report #21 exceeded or even approached the ATSDR Chronic MRL.

4.3 Hydrogen Fluoride and Hydrogen Chloride

Hydrogen fluoride was reported more times than hydrogen chloride, but neither anion was detected frequently. The results for this analysis are within the range of values reported over the course of this monitoring program.

Note: It should be recognized that NIOSH Method 7903 for inorganic acids was designed for industrial-not ambient environmental applications. The methodology appears to be sensitive to changes in ambient conditions, particularly moisture. HF and HCl were either not present or were only detected at very low levels in the majority of samples that have been collected since the initiation of this monitoring program in May 2007. Even those results that appear to be outside of the "typical range" for this program are extremely low concentrations that do not present a risk to public health.

4.4 Laboratory Issues

No major laboratory issues have been identified as of the date of this report that would alter the conclusions based upon the monitoring results presented here. Results from the co-located (duplicate) TO-15 samples were similar for all locations and events.

4.5 PCDDs/PCDFs

The TEQ concentrations range from 0.00209 pg/m^3 to 0.0411 pg/m^3. All samples from all locations have concentrations that are below the very conservative Region 9 PRG for 2,3,7,8-TCDD even using the estimated maximum possible concentrations for dioxins. Concentrations of constituents at or below the PRGs are considered to be acceptable for a lifetime of exposure by the general public.

2,3,7,8-TCDD, the most biologically active/toxic dioxin compound, was not detected in any sample from any location. The Strasburg location, which is intended to serve as an indicator of background dioxin levels, was in fact upwind of the Countywide landfill on November 18-19, 2008.

4.6 Conclusions

No significant concentrations of any VOC, including benzene, have been reported in the months since alterations were made to the sampling apparatus. This is still the case for the monitoring events presented in this Monthly Report #21. In addition to the 24-hour monitoring events that are conducted on an every-six-day schedule, this report also presents the findings from supplementary 8-hour TO-15 samples that are being collected at mid-points between the 24-hour events. The purpose of these supplementary samples is to characterize any changes in VOC levels in the community that may correspond to the intrusive Isolation Break excavation activities that were initiated in December 2008.

Our specific conclusions are summarized below:

- The levels of benzene recorded at the community monitoring locations during mid-December through mid-January were very low and well within Ohio background as reported by Ohio EPA (Portsmouth Ohio Air Quality Study, 2003).

- The concentrations of specific VOCs detected during the Supplemental Isolation Break 8-hour Monitoring Events were consistent with the results from the regularly scheduled 24-hour Monitoring Events. To date, these findings suggest that the intrusive excavation of the Isolation Break is not having an effect on the concentrations or specific VOCs present in ambient air in the surrounding community. Serious consideration should be given to eliminating these additional samples.

- Because there are numerous local and regional sources of VOCs, it is expected that many of these compounds will continue to be detected at low levels as the community monitoring program moves forward.

- Concentrations of formaldehyde and acetaldehyde from mid-December through mid-January were similar to the previous month. All concentrations of formaldehyde reported during this time period were well below the ASTDR Chronic MRL and do not present a threat to public health.

- The concentrations of hydrogen fluoride and hydrogen chloride reported during mid-December through mid-January were within the historical range for this monitoring program. The presence of very low levels of these two inorganic acids does not constitute a threat to public health. Serious consideration should be given to eliminating sampling for hydrogen fluoride and hydrogen chloride.

- There are no clear trends with regard to the specific compounds or the concentrations of those compounds detected with respect to whether the monitoring location was upwind or downwind of the landfill during the monitoring event.

- Concentrations of dioxin were below the very conservative Region 9 PRG at all five locations where monitoring was conducted in early December 2008. The Strasburg Park (background location) sample had the second highest TEQ concentration (0.03887 pg/m^3) of any of the locations and is upwind and distant from the landfill. Thus, the results of the dioxin monitoring do not indicate any results greater than the PRG at any locations and suggest that the low level detections originate from regional sources.

- The results presented in this Monthly Report #21 continue to support our conclusions that the occurrence of low levels of VOCs, aldehydes, inorganic acids, and dioxins and furans in the air of the community surrounding Countywide reflect local and regional sources; and that the levels of these chemicals in the ambient air do not represent either an immediate or long-term threat to public health.

Countywide Recycling & Disposal Facility
Ambient Air Monitoring
Monthly Report #21

February 20, 2009

EPA Method TO-15 SUMMARY TABLES

Countywide Recycling & Disposal Facility								
EPA Method TO-15 Modified: Volatile Organic Compounds								
Table 1: Event #96: December 17/18, 2008								
Analyte				Monitoring Location				
				School		Cell Tower	Campground	Wetland
	*Prevailing Wind Direction				Co-Located			
				C/V		C/V	C/V	D/V
	All results in ug/m3							
Method TO-15 Modified	**Acute MRL**	**Chronic MRL**	**PRG**					
Acetone	61762	30881	3300	12	5.9J	7.7J	17	12
Benzene	29	10	**0.25**	**0.80**	**ND**	**0.90**	**0.97**	**0.93**
Bromomethane	194	19	5.2	ND	ND	ND	ND	ND
tert-Butyl alcohol	NA	NA	NA	0.30J	ND	0.41J	0.56J	0.37J
Carbon disulfide	NA	934	730	0.16J	0.18J	0.42J	0.20J	0.21J
Carbon tetrachloride	188	188	**0.13**	**0.60J**	**ND**	**0.68J**	**0.70J**	**0.68J**
Chlorobenzene	NA	NA	62	ND	ND	ND	ND	ND
Chloroethane	39583	NA	2.3	ND	ND	ND	ND	ND
Chloroform	488	98	0.083	ND	ND	ND	ND	ND
Chloromethane	1033	103	95	0.93J	1.00J	0.99J	1.1	1.2
Cyclohexane	NA	NA	6200	ND	ND	ND	ND	ND
Dichlorodifluoromethane	NA	NA	210	2.4	2.5	2.4	2.6	4.5
Ethylbenzene	43419	1303	1100	0.36J	ND	0.42J	0.34J	0.33J
4-Ethyltoluene	NA	NA	NA	0.58J	ND	0.85J	0.39J	0.48J
Heptane	NA	NA	NA	0.29J	ND	0.36J	0.34J	0.36J
Hexane	NA	2115	210	0.51J	ND	0.48J	0.56J	0.59J
Methyl ethyl ketone	NA	NA	5100	1.5J	ND	0.93J	2.5J	2.0J
Methyl isobutyl ketone	NA	NA	3100	ND	ND	ND	0.25J	0.21J
Methylene chloride	2084	1042	4.1	3.4B	2.5B	3.0B	2.3B	4.6B
Styrene	8520	852	1100	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	NA	NA	0.033	ND	ND	ND	0.46J	ND
Tetrahydrofuran	NA	NA	0.99	ND	ND	ND	ND	ND
Toluene	3768	301	400	1.3	ND	1.4	1.4	1.4
Trichloroethene	10920	546	0.017	ND	ND	ND	0.21J	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	0.60J	0.26J	0.59J	0.64J	0.67J
Trichlorofluoromethane	NA	NA	730	1.3	1.1	1.3	1.4	1.4

1,2,4-Trimethylbenzene	NA	NA	6.2	1.5	ND	1.8	0.78J	1.1
1,3,5-Trimethylbenzene	NA	NA	6.2	0.37J	ND	0.47J	ND	0.37J
2,2,4-Trimethylpentane	NA	NA	NA	ND	ND	ND	ND	ND
Vinyl Chloride	1278	77	0.11	ND	ND	ND	ND	ND
m/p-Xylene	8687	8687	110	1.4	ND	1.5	0.97	1.1
o-Xylene	8687	8687	110	0.51J	ND	0.60J	0.37J	0.41J
Tentatively Identified Compounds								
NONE								
*Prevailing Wind Direction with respect to the landfill								
U: Upwind								
D: Downwind								
C: Crosswind								
V: Variable								
ND = Not Detected								
NA = Not Available								
Y = TIC present								
Bold indicates result exceeds Region 9 PRG								
Shading indicates result exceeds ATSDR MRL								
Laboratory Data Qualifiers:								
B = Compound present in blank								
J = Estimated concentration below laboratory reporting limit								
D = Dilution								
E = Exceeds calibration range of instrument								
TICs: Compound has been tentatively identified but the estimated concentration is highly uncertain.								

Countywide Recycling & Disposal Facility								
EPA Method TO-15 Modified: Volatile Organic Compounds								
Table 2: Event #97: December 23/24, 2008								
Analyte				Monitoring Location				
				School	*Cell Tower*	*Campground*		*Wetland*
	*Prevailing Wind Direction						Co-Located	
				C/U	C/U	C/D		C/C
	All results in ug/m3							
Method TO-15 Modified	**Acute MRL**	**Chronic MRL**	**PRG**					
Acetone	61762	30881	3300	5.6J	320	4.6J	9.3J	7.2J
Benzene	29	10	**0.25**	**0.71**	**3.8**	**0.59J**	**0.60J**	**0.61J**
Bromomethane	194	19	5.2	ND	ND	ND	ND	ND
tert-Butyl alcohol	NA	NA	NA	0.14J	ND	0.16J	0.17J	0.21J
Carbon disulfide	NA	934	730	0.19J	0.67J	0.16J	0.12J	0.13J
Carbon tetrachloride	188	188	**0.13**	**0.58J**	**ND**	**0.64J**	**0.54J**	**0.51J**
Chlorobenzene	NA	NA	62	ND	ND	ND	ND	ND
Chloroethane	39583	NA	2.3	ND	0.26J	ND	ND	ND
Chloroform	488	98	0.083	ND	ND	ND	ND	ND
Chloromethane	1033	103	95	0.98J	2.6	1.1	1.0J	0.97J
Cyclohexane	NA	NA	6200	ND	ND	ND	ND	ND
Dichlorodifluoromethane	NA	NA	210	2.4	2.5J	2.5	2.4	2.3
cis-1,2-Dichloroethene	NA	NA	37	ND	0.65J	ND	ND	ND
Ethylbenzene	43419	1303	1100	ND	1.4J	ND	ND	ND
4-Ethyltoluene	NA	NA	NA	ND	ND	ND	ND	0.35J
Heptane	NA	NA	NA	0.27J	ND	ND	0.20J	0.23J
Hexane	NA	2115	210	0.50J	1.1J	0.37J	0.41J	0.42J
Methyl ethyl ketone	NA	NA	5100	0.61J	15	ND	1.4J	0.94J
Methyl isobutyl ketone	NA	NA	3100	ND	1.3J	ND	ND	ND
Methylene chloride	2084	1042	4.1	1.2JB	3.7JB	0.86JB	0.94JB	0.86JB
Styrene	8520	852	1100	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	NA	NA	0.033	ND	ND	ND	ND	ND
Tetrachloroethene	1378	276	0.32	ND	0.84J	ND	ND	ND
Tetrahydrofuran	NA	NA	0.99	ND	0.73J	ND	ND	ND
Toluene	3768	301	400	1.0	7.5	0.70J	0.88	0.74
Trichloroethene	10920	546	0.017	ND	ND	ND	ND	ND

1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	0.61J	ND	0.60J	0.61J	0.56J
Trichlorofluoromethane	NA	NA	730	1.3	1.5J	1.4	1.3	1.2
1,2,4-Trimethylbenzene	NA	NA	6.2	0.37J	1.5J	0.32J	0.32J	0.51J
1,3,5-Trimethylbenzene	NA	NA	6.2	ND	ND	ND	ND	ND
2,2,4-Trimethylpentane	NA	NA	NA	ND	ND	ND	ND	ND
Vinyl Chloride	1278	77	0.11	ND	ND	ND	ND	ND
m/p-Xylene	8687	8687	110	0.66J	3.5	ND	0.75J	0.63J
o-Xylene	8687	8687	110	ND	1.2J	ND	0.32J	ND
Tentatively Identified Compounds								
Acetaldehyde	NA	NA	NA	N	Y	N	N	N
Cobalt, (2-methyl-.eta-3-propenyl)-(pen	NA	NA	NA	N	Y	N	N	N
*Prevailing Wind Direction with respect to the landfill								
U: Upwind								
D: Downwind								
C: Crosswind								
V: Variable								
ND = Not Detected								
NA = Not Available								
Y = TIC present								
Bold indicates result exceeds Region 9 PRG								
Shading indicates result exceeds ATSDR MRL								
Laboratory Data Qualifiers:								
B = Compound present in blank								
J = Estimated concentration below laboratory reporting limit								
D = Dilution								
E = Exceeds calibration range of instrument								
TICs: Compound has been tentatively identified but the estimated concentration is highly uncertain.								

Countywide Recycling & Disposal Facility								
EPA Method TO-15 Modified: Volatile Organic Compounds								
Table 3: Event #98: December 29/30, 2008								
Analyte				Monitoring Location				
				School	*Cell Tower*	*Campground*	*Wetland*	
	*Prevailing Wind Direction						NO SAMPLE	Co-Located
				U/V	U/V	D/V	C/V	
	All results in ug/m3							
Method TO-15 Modified	**Acute MRL**	**Chronic MRL**	**PRG**					
Acetone	61762	30881	3300	24	4.2J	6.0J	NR	10J
Benzene	29	10	**0.25**	**1.1**	**0.67**	**0.65**	NR	**0.63**
Bromomethane	194	19	5.2	ND	ND	ND	NR	ND
tert-Butyl alcohol	NA	NA	NA	2.7J	0.16J	0.22J	NR	0.20J
1,3-Butadiene	194.5	19	0.061	0.27J	ND	ND	NR	ND
Carbon disulfide	NA	934	730	0.31JB	0.19JB	0.16JB	NR	0.15JB
Carbon tetrachloride	188	188	**0.13**	**0.77J**	**0.71J**	**0.54J**	NR	**0.63J**
Chlorobenzene	NA	NA	62	ND	ND	ND	NR	ND
Chloroethane	39583	NA	2.3	0.20J	ND	ND	NR	ND
Chloroform	488	98	0.083	ND	ND	ND	NR	ND
Chloromethane	1033	103	95	1.2	1.1	0.96J	NR	1.0J
Cyclohexane	NA	NA	6200	ND	ND	ND	NR	ND
1,2-Dichlorobenzene	NA	NA	210	0.62J	ND	ND	NR	ND
Dichlorodifluoromethane	NA	NA	210	2.7	2.6	2.6	NR	2.4
1,2-Dichloroethane	NA	2472	0.074	ND	ND	1.3	NR	0.84
Ethylbenzene	43419	1303	1100	2.5	0.33J	ND	NR	ND
4-Ethyltoluene	NA	NA	NA	2.4	0.64J	ND	NR	ND
Heptane	NA	NA	NA	0.68J	0.28J	0.37J	NR	0.23J
Hexane	NA	2115	210	1.3J	0.41J	0.50J	NR	0.37J
Methyl ethyl ketone	NA	NA	5100	4.3	0.84J	0.87J	NR	1.1J
Methyl isobutyl ketone	NA	NA	3100	1.3J	ND	ND	NR	ND
Methylene chloride	2084	1042	4.1	11B	1.5JB	1.5JB	NR	1.3JB
Styrene	8520	852	1100	ND	ND	ND	NR	ND
1,1,2,2-Tetrachloroethane	NA	NA	0.033	0.74J	ND	ND	NR	ND
Tetrachloroethene	1378	276	0.32	4.7	ND	ND	NR	ND
Tetrahydrofuran	NA	NA	0.99	ND	ND	ND	NR	ND

Toluene	3768	301	400	6.1	1.0	1.00	NR	0.94
1,1,1-Trichloroethane	10800	NA	2300	0.42J	ND	ND	NR	ND
Trichloroethene	10920	546	0.017	2.1	ND	ND	NR	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	0.63J	0.66J	0.54J	NR	0.57J
Trichlorofluoromethane	NA	NA	730	1.6	1.5	1.4	NR	1.3
1,2,4-Trimethylbenzene	NA	NA	6.2	5.4	1.6	0.34J	NR	0.47J
1,3,5-Trimethylbenzene	NA	NA	6.2	2.2	0.43J	ND	NR	ND
2,2,4-Trimethylpentane	NA	NA	NA	0.56J	ND	ND	NR	ND
Vinyl Bromide	NA	NA	0.061	0.36J	ND	ND	NR	ND
Vinyl Chloride	1278	77	0.11	ND	ND	ND	NR	ND
m/p-Xylene	8687	8687	110	10	1.2	0.69J	NR	0.73J
o-Xylene	8687	8687	110	3.3	0.45J	ND	NR	0.30J
Tentatively Identified Compounds								
Acetaldehyde	NA	NA	NA	Y	N	N		N
*Prevailing Wind Direction with respect to the landfill								
U: Upwind								
D: Downwind								
C: Crosswind								
V: Variable								
ND = Not Detected								
NA = Not Available								
NR= No Result								
Y = TIC present								
Bold indicates result exceeds Region 9 PRG								
Shading indicates result exceeds ATSDR MRL								
Laboratory Data Qualifiers:								
B = Compound present in blank								
J = Estimated concentration below laboratory reporting limit								
D = Dilution								
E = Exceeds calibration range of instrument								

TICs: Compound has been tentatively identified but the estimated concentration is highly uncertain.				

Countywide Recycling & Disposal Facility

EPA Method TO-15 Modified: Volatile Organic Compounds

Table 4: Event #99: January 4/5, 2009

Analyte				Monitoring Location				
				School	***Cell Tower***		***Campground***	***Wetland***
	*Prevailing Wind Direction				Co-Located			
				V/C	V/C		V/C	V/D
	All results in ug/m3							
Method TO-15 Modified	**Acute MRL**	**Chronic MRL**	**PRG**					
Acetone	61762	30881	3300	6.5J	15	4.5J	6.1J	11J
Benzene	29	10	**0.25**	**1.1**	**1.1**	**0.68**	**0.77**	**0.85**
Bromomethane	194	19	5.2	ND	ND	ND	ND	ND
tert-Butyl alcohol	NA	NA	NA	0.22J	0.42J	ND	0.39J	0.17J
Carbon disulfide	NA	934	730	ND	ND	ND	ND	ND
Carbon tetrachloride	188	188	**0.13**	**0.59J**	**0.57J**	**0.55J**	**0.55J**	**0.57J**
Chlorobenzene	NA	NA	62	ND	ND	ND	ND	ND
Chloroethane	39583	NA	2.3	ND	ND	ND	ND	ND
Chloroform	488	98	0.083	ND	ND	ND	ND	ND
Chloromethane	1033	103	95	1.0	0.92J	1.2	1.1	0.76J
Cyclohexane	NA	NA	6200	ND	ND	ND	ND	ND
Dichlorodifluoromethane	NA	NA	210	2.0	1.9	2.0	1.9	2.0
Ethylbenzene	43419	1303	1100	ND	0.36J	ND	ND	ND
4-Ethyltoluene	NA	NA	NA	ND	1.0J	ND	ND	ND
Heptane	NA	NA	NA	0.42J	0.69J	0.23J	0.33J	0.48J
Hexane	NA	2115	210	0.64J	0.72J	0.38J	0.49J	0.58J
Methyl ethyl ketone	NA	NA	5100	1.2J	2.0J	ND	0.93J	2.2J
Methyl isobutyl ketone	NA	NA	3100	ND	ND	ND	ND	ND
Methylene chloride	2084	1042	4.1	0.59JB	4.2B	0.52JB	0.48JB	0.46JB
Styrene	8520	852	1100	ND	ND	ND	ND	ND
Tetrahydrofuran	NA	NA	0.99	ND	ND	ND	ND	ND
Toluene	3768	301	400	1.3	1.9	1.8	0.87	0.63J
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	0.54J	0.57J	0.58J	0.51J	0.56J
Trichlorofluoromethane	NA	NA	730	1.1J	1.1J	1.1	1.1J	1.1
1,2,4-Trimethylbenzene	NA	NA	6.2	0.49J	1.9	ND	ND	ND
1,3,5-Trimethylbenzene	NA	NA	6.2	ND	0.45J	ND	ND	ND

2,2,4-Trimethylpentane	NA	NA	NA	0.35J	ND	ND	0.19J	ND
Vinyl Chloride	1278	77	0.11	ND	ND	ND	ND	ND
m/p-Xylene	8687	8687	110	0.70J	1.4	ND	ND	ND
o-Xylene	8687	8687	110	0.27J	0.53J	ND	ND	ND
Tentatively Identified Compounds								
Propane	NA	NA	NA	N	N	N	Y	N
Acetaldehyde	NA	NA	NA	N	Y	N	N	N
*Prevailing Wind Direction with respect to the landfill								
U: Upwind								
D: Downwind								
C: Crosswind								
V: Variable								
ND = Not Detected								
NA = Not Available								
Y = TIC present								
Bold indicates result exceeds Region 9 PRG								
Shading indicates result exceeds ATSDR MRL								
Laboratory Data Qualifiers:								
B = Compound present in blank								
J = Estimated concentration below laboratory reporting limit								
D = Dilution								
E = Exceeds calibration range of instrument								
TICs: Compound has been tentatively identified but the estimated concentration is highly uncertain.								

Countywide Recycling & Disposal Facility								
EPA Method TO-15 Modified: Volatile Organic Compounds								
Table 5: Event #100: January 10/11, 2009								
Analyte				Monitoring Location				
				School		Cell Tower	Campground	Wetland
	*Prevailing Wind Direction				Co-Located			
				C/C		C/C	C/C	U/C
	All results in ug/m3							
Method TO-15 Modified	**Acute MRL**	**Chronic MRL**	**PRG**					
Acetone	61762	30881	3300	4.9J	ND	4.6J	5.4J	7.0J
Benzene	29	10	**0.25**	**0.93**	**0.78**	**0.70**	**0.85**	**0.96**
Bromomethane	194	19	5.2	ND	ND	ND	ND	ND
tert-Butyl alcohol	NA	NA	NA	0.41J	0.14J	ND	0.12J	0.20J
Carbon disulfide	NA	934	730	0.25J	0.11J	ND	ND	ND
Carbon tetrachloride	188	188	**0.13**	**0.41J**	**0.53J**	**0.54J**	**0.42J**	**0.70J**
Chlorobenzene	NA	NA	62	ND	ND	ND	ND	ND
Chloroethane	39583	NA	2.3	ND	ND	ND	ND	ND
Chloroform	488	98	0.083	ND	ND	ND	ND	1.6
Chloromethane	1033	103	95	1.2	1.9	1.5	1.1	1.2
Cyclohexane	NA	NA	6200	ND	ND	ND	ND	ND
Dichlorodifluoromethane	NA	NA	210	2.1	2.0	2.0	2.1	2.3
Ethylbenzene	43419	1303	1100	ND	ND	ND	ND	ND
4-Ethyltoluene	NA	NA	NA	0.36J	ND	ND	ND	ND
Heptane	NA	NA	NA	0.48J	0.29J	0.27J	0.37J	0.42J
Hexane	NA	2115	210	0.42J	0.47J	0.38J	0.46J	0.49J
Methyl ethyl ketone	NA	NA	5100	0.71J	ND	1.6J	0.68J	0.82J
Methyl isobutyl ketone	NA	NA	3100	ND	ND	ND	ND	ND
Methylene chloride	2084	1042	4.1	1.7JB	1.6JB	1.7JB	3.4B	3.1B
Styrene	8520	852	1100	ND	ND	ND	ND	ND
Tetrahydrofuran	NA	NA	0.99	ND	ND	ND	ND	ND
Toluene	3768	301	400	1.1B	1.4	1.2	1.0B	0.96B
Trichloroethene	10920	546	0.017	ND	ND	0.24J	0.92J	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	0.50J	0.54J	0.50J	0.47J	0.56J
Trichlorofluoromethane	NA	NA	730	1.1J	1.0J	1.1J	1.1J	1.2
1,2,4-Trimethylbenzene	NA	NA	6.2	0.73J	ND	0.51J	ND	ND

1,3,5-Trimethylbenzene	NA	NA	6.2	ND	ND	ND	ND	ND
2,2,4-Trimethylpentane	NA	NA	NA	0.48J	ND	0.22J	0.20J	ND
Vinyl Chloride	1278	77	0.11	ND	ND	ND	ND	ND
m/p-Xylene	8687	8687	110	0.92	ND	0.71J	ND	ND
o-Xylene	8687	8687	110	0.33J	ND	ND	ND	ND
Tentatively Identified Compounds								
NONE								
*Prevailing Wind Direction with respect to the landfill								
U: Upwind								
D: Downwind								
C: Crosswind								
V: Variable								
ND = Not Detected								
NA = Not Available								
Y = TIC present								
Bold indicates result exceeds Region 9 PRG								
Shading indicates result exceeds ATSDR MRL								
Laboratory Data Qualifiers:								
B = Compound present in blank								
J = Estimated concentration below laboratory reporting limit								
D = Dilution								
E = Exceeds calibration range of instrument								
TICs: Compound has been tentatively identified but the estimated concentration is highly uncertain.								

Countywide Recycling & Disposal Facility

EPA Method TO-15 Modified: Volatile Organic Compounds

Table 6: Event #101: January 16/17, 2009

Analyte	*Prevailing Wind Direction			Monitoring Location				
				School	*Cell Tower*	*Campground*		*Wetland*
							Co-Located	
				C/C	C/C	C/C		D/U
	All results in ug/m3							
Method TO-15 Modified	**Acute MRL**	**Chronic MRL**	**PRG**					
Acetone	61762	30881	3300	ND	6.4J	10J	17	6.4J
Benzene	29	10	**0.25**	**1.0**	**1.0**	**1.1**	**1.1**	**0.83**
Bromomethane	194	19	5.2	ND	ND	ND	ND	ND
tert-Butyl alcohol	NA	NA	NA	ND	0.17J	0.39J	0.91J	0.14J
Carbon disulfide	NA	934	730	0.24J	0.15J	0.54J	16	0.13J
Carbon tetrachloride	188	188	**0.13**	**0.61J**	**0.52J**	**0.61J**	**0.60J**	**0.52J**
Chlorobenzene	NA	NA	62	ND	ND	ND	ND	ND
Chloroethane	39583	NA	2.3	ND	ND	ND	ND	ND
Chloroform	488	98	0.083	0.24J	ND	ND	ND	ND
Chloromethane	1033	103	95	1.2	1.1	1.0	1.2	1.1
Cyclohexane	NA	NA	6200	ND	ND	ND	ND	ND
Dichlorodifluoromethane	NA	NA	210	2.3	2.3	2.4	2.5	2.4
cis-1,2-Dichloroethene	NA	NA	37	ND	0.31J	ND	ND	ND
Ethylbenzene	43419	1303	1100	ND	0.31J	0.32J	0.59J	ND
4-Ethyltoluene	NA	NA	NA	ND	ND	ND	ND	ND
Heptane	NA	NA	NA	ND	0.27J	0.31J	0.29J	0.27J
Hexane	NA	2115	210	0.51J	0.56J	0.67J	0.74J	0.58J
Methyl ethyl ketone	NA	NA	5100	ND	0.86J	2.1J	4.2	1.1J
Methyl isobutyl ketone	NA	NA	3100	ND	ND	ND	0.32J	ND
Methylene chloride	2084	1042	4.1	1.4JB	1.5JB	0.92JB	1.3JB	0.87JB
Styrene	8520	852	1100	ND	ND	ND	ND	ND
Tetrahydrofuran	NA	NA	0.99	ND	ND	ND	ND	ND
Toluene	3768	301	400	0.41J	1.0	1.3	2.3	0.79
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	0.57J	0.58J	0.57J	0.57J	0.57J
Trichlorofluoromethane	NA	NA	730	1.2	1.1	1.2	1.2	1.2
1,2,4-Trimethylbenzene	NA	NA	6.2	ND	ND	ND	0.54J	ND

1,3,5-Trimethylbenzene	NA	NA	6.2	ND	ND	ND	ND	ND
2,2,4-Trimethylpentane	NA	NA	NA	ND	ND	0.20J	0.20J	ND
Vinyl Chloride	1278	77	0.11	ND	ND	ND	ND	ND
m/p-Xylene	8687	8687	110	ND	0.79J	ND	1.3	ND
o-Xylene	8687	8687	110	ND	ND	ND	0.95	ND
Tentatively Identified Compounds								
Propane	NA	NA	NA	Y	Y	Y	Y	Y
Acetaldehyde	NA	NA	NA	Y	N	N	N	N
Trisulfide, dipropyl	NA	NA	NA	N	N	N	Y	N
Unknown	NA	NA	NA	N	N	N	Y	N
Unknown	NA	NA	NA	N	N	N	Y	N
1-Propene, 2-methyl	NA	NA	NA	N	N	N	Y	N
*Prevailing Wind Direction with respect to the landfill								
U: Upwind								
D: Downwind								
C: Crosswind								
V: Variable								
ND = Not Detected								
NA = Not Available								
Y = TIC present								
Bold indicates result exceeds Region 9 PRG								
Shading indicates result exceeds ATSDR MRL								
Laboratory Data Qualifiers:								
B = Compound present in blank								
J = Estimated concentration below laboratory reporting limit								
D = Dilution								
E = Exceeds calibration range of instrument								
TICs: Compound has been tentatively identified but the estimated concentration is highly uncertain.								

Countywide Recycling & Disposal Facility

EPA Method TO-15 Modified: Volatile Organic Compounds

Table 7: Special Event Isolation-Break 8 hour TO-15 sampling: January 8, 2008

Analyte				Monitoring Location			
				School	*Cell Tower*	*Campground*	*Wetland*
	*Prevailing Wind Direction						
				C	C	C	D
	All results in ug/m3						
Method TO-15 Modified	**Acute MRL**	**Chronic MRL**	**PRG**				
Acetone	61762	30881	3300	8.0J	5.6J	7.1J	11J
Benzene	29	10	**0.25**	**0.72**	**0.67**	**0.7**	**0.85**
Bromomethane	194	19	5.2	ND	ND	ND	ND
tert-Butyl alcohol	NA	NA	NA	ND	0.15J	0.11J	0.13J
Carbon disulfide	NA	934	730	ND	ND	ND	ND
Carbon tetrachloride	188	188	**0.13**	**0.41J**	**0.60J**	**0.55J**	**0.44J**
Chlorobenzene	NA	NA	62	ND	ND	ND	ND
Chloroethane	39583	NA	2.3	ND	ND	ND	ND
Chloroform	488	98	0.083	ND	ND	ND	ND
Chloromethane	1033	103	95	1.0	1.5	1.2	1.0J
Cyclohexane	NA	NA	6200	ND	ND	ND	0.21J
Dichlorodifluoromethane	NA	NA	210	2.0	1.9	1.9	2.1
Ethylbenzene	43419	1303	1100	ND	ND	ND	ND
4-Ethyltoluene	NA	NA	NA	ND	ND	ND	ND
Heptane	NA	NA	NA	0.25J	0.27J	0.31J	0.34J
Hexane	NA	2115	210	0.33J	0.44J	0.34J	0.41J
Methyl ethyl ketone	NA	NA	5100	0.87J	0.99J	1.1J	2.3J
Methyl isobutyl ketone	NA	NA	3100	ND	ND	ND	ND
Methylene chloride	2084	1042	4.1	0.73JB	0.86JB	1.5JB	0.40JB
Styrene	8520	852	1100	ND	ND	ND	ND
Tetrahydrofuran	NA	NA	0.99	ND	ND	ND	ND
Toluene	3768	301	400	0.60JB	0.71J	0.66J	0.74B
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	0.48J	0.55J	0.51J	0.54J
Trichlorofluoromethane	NA	NA	730	1.1J	0.99J	0.96J	1.1
1,2,4-Trimethylbenzene	NA	NA	6.2	ND	ND	ND	ND
1,3,5-Trimethylbenzene	NA	NA	6.2	ND	ND	ND	ND

2,2,4-Trimethylpentane	NA	NA	NA	0.22J	0.41J	ND	ND	
Vinyl Chloride	1278	77	0.11	ND	ND	ND	ND	
m/p-Xylene	8687	8687	110	ND	ND	ND	ND	
o-Xylene	8687	8687	110	ND	ND	ND	ND	
Tentatively Identified Compounds								
Methanol	NA	NA	NA	N	Y	Y	Y	
Propane	NA	NA	NA	N	Y	N	N	
*Prevailing Wind Direction with respect to the landfill								
U: Upwind								
D: Downwind								
C: Crosswind								
V: Variable								
ND = Not Detected								
NA = Not Available								
Y = TIC present								
Bold indicates result exceeds Region 9 PRG								
Shading indicates result exceeds ATSDR MRL								
Laboratory Data Qualifiers:								
B = Compound present in blank								
J = Estimated concentration below laboratory reporting limit								
D = Dilution								
E = Exceeds calibration range of instrument								
TICs: Compound has been tentatively identified but the estimated concentration is highly uncertain.								

Countywide Recycling & Disposal Facility

EPA Method TO-15 Modified: Volatile Organic Compounds

Table 8: Special Event Isolation-Break 8 hour TO-15 sampling: January 14, 2008 Analyzed for BTEX ONLY

Analyte				Monitoring Location			
				School	*Cell Tower*	*Campground*	*Wetland*
	*Prevailing Wind Direction			C	C	C	D
	All results in ug/m3						
Method TO-15 Modified	**Acute MRL**	**Chronic MRL**	**PRG**				
Benzene	29	10	**0.25**	**0.78**	**0.74**	**0.71**	**0.65**
Ethylbenzene	43419	1303	1100	ND	ND	ND	ND
Toluene	3768	301	400	0.31J	0.60J	0.65J	0.58J
m/p-Xylene	8687	8687	110	ND	ND	ND	ND
o-Xylene	8687	8687	110	ND	ND	ND	ND

*Prevailing Wind Direction with respect to the landfill
U: Upwind
D: Downwind
C: Crosswind
V: Variable

ND = Not Detected
NA = Not Available
Y = TIC present
Bold indicates result exceeds Region 9 PRG
Shading indicates result exceeds ATSDR MRL
Laboratory Data Qualifiers:
B = Compound present in blank
J = Estimated concentration below laboratory reporting limit
D = Dilution
E = Exceeds calibration range of instrument
TICs: Compound has been tentatively identified but the estimated concentration is highly uncertain.

Countywide Recycling & Disposal Facility

EPA Method TO-15 Modified: Volatile Organic Compounds

Table 9: Special Event Isolation-Break 8 hour TO-15 sampling: January 20, 2008 Analyzed for BTEX ONLY

Analyte				Monitoring Location			
				School	*Cell Tower*	*Campground*	*Wetland*
	*Prevailing Wind Direction						
				C	C	C	D
	All results in ug/m3						
Method TO-15 Modified	**Acute MRL**	**Chronic MRL**	**PRG**				
Benzene	29	10	**0.25**	**1.2**	**1.1**	**1.1**	**1.2**
Ethylbenzene	43419	1303	1100	ND	ND	ND	ND
Toluene	3768	301	400	1.4	1.0	1.1	1.2
m/p-Xylene	8687	8687	110	0.58J	ND	ND	ND
o-Xylene	8687	8687	110	ND	ND	ND	ND

*Prevailing Wind Direction with respect to the landfill
U: Upwind
D: Downwind
C: Crosswind
V: Variable

ND = Not Detected
NA = Not Available
Y = TIC present
Bold indicates result exceeds Region 9 PRG
Shading indicates result exceeds ATSDR MRL
Laboratory Data Qualifiers:
B = Compound present in blank
J = Estimated concentration below laboratory reporting limit
D = Dilution
E = Exceeds calibration range of instrument
TICs: Compound has been tentatively identified but the estimated concentration is highly uncertain.