Title: **2007 MITC Residential Community Air Assessment; Franklin County, Washington.**

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Research Director: Dr. Vincent R Hebert

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Study Initiation Date:	08/2007
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Testing Facility: Washington State University
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Performing Laboratory: Washington State University
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Richland, WA 99354-1671

Study Number: FEQL -1207A

Total Number of Pages: 96

LOCATION OF RAW DATA

The original raw data, protocol, correspondence logs, and all relevant information for the study titled, "2007 MITC Residential Community Air Assessment; Franklin County, Washington," along with a certified copy of the signed analytical summary report will be maintained in the archives of the testing facility for a period of five years.

Laboratory Research Director: Dr. Vincent Hebert

Testing Facility: Food and Environmental Quality Laboratory
Washington State University
2710 University Drive
Richland, WA 99354-1671

CERTIFICATION

The undersigned hereby declares that this study was performed under my supervision according to the procedures described herein, and that this report provides a true and accurate record of the results obtained.

Laboratory Research Director:  Date: July 17th, 2008

Dr. Vincent R. Hebert, Food and Environmental Quality Laboratory
Washington State University, Tri-Cities Campus, Richland WA

Field and analytical work performed by:

Jason Merriman	Graduate Research Assistant
Jane LePage	Agricultural Research Technician III
Vincent Hebert	Laboratory Research Director

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I. EXECUTIVE SUMMARY

Abstract

An ambient air monitoring program was conducted in south Franklin County, WA in the fall of 2007. This study specifically assessed metam sodium's biologically active ingredient methyl isothiocyanate (MITC) in ambient air near residential and commercial structures during the fall 2007 field fumigation season. The purpose of this monitoring program was to determine if off-target MITC emissions by current fumigation practices exceeded the USEPA Office of Pesticide Protection (EPA OPP) human equivalent concentration (HEC) criteria for acute and subchronic residential inhalation exposure. Air sampling was performed three days per week from September 17 through November 3, 2007. Two 12-hr samples were taken over each 24-hr sampling interval to compare day and nighttime MITC air concentrations. During the week of October 22 air sampling was performed at 4-hr intervals over each of the three 1-day sampling periods. The12-hr time weighted averaged (TWA) MITC air concentrations ranged from detectable (>0.01 ppb) to 11.7 ppb. The observed TWA 4-hour maximum air concentration of 40 ppb exceeded the EPA OPP acute HEC value of 22 ppb. The time weighed averaged residential air concentration over the entire seven-week sampling period was 1.5 ppb.

Study Overview

South Franklin County is currently undergoing rapid residential and commercial growth into traditional large production agricultural lands. There has been public health concerns that residential expansion could contribute to increased risks for human inhalation exposure to agricultural fumigants in this region (Burgess et al., 2000). The purpose behind this current air monitoring study was to evaluate ambient MITC air concentrations within residential communities. This 2007 air monitoring evaluation was conducted in a similar manner to an earlier 2005 MITC residential air study (Merriman and Hebert, 2007). As in 2005, off-target MITC emissions were monitored at 24-hr periods three times weekly over the fumigation season. However, during the week before the irrigation cut-off, residential air was monitored at 4-hr instead of 12-hr TWA intervals to better assess short-term acute inhalation exposure.

2007 Monitoring Program

MITC was monitored in ambient air near residential and commercial buildings in south Franklin County during the fall fumigation season between September 17, 2007 and November 3, 2007. The study was terminated one week after the October 25th irrigation water cut-off date. Six sites were selected, four residential and one commercial with an additional residential site added three weeks into the study (see Figure 1 and Table A-1). A sampling mast was constructed for each location. The mast consisted of two SKC AirChek Sampler Model 224 air sampling units placed at the base of a ring-stand with a vertical 1.5-meter crossbar. Tubing was used to link the two air samplers to the collocated 2 g charcoal-filled glass cartridges (SKC West) located at each end of the crossbar. The sampling masts were operated three days per week over the seven week fumigation period (see Appendix A; Protocol). On every sampling day, the charcoal cartridges were collected and replaced at 12-hr intervals (day and nighttime sampling). During week six of the study, the daily sampling interval was changed to six 4-hr intervals using 1-g cartridges to better assess daily acute MITC exposure concentrations. At the start and end of collections, flow measurements were recorded. The collected charcoal

cartridges were immediately placed on blue ice and taken to the WSU-Food and Environmental Quality Laboratory (FEQL) analytical facility where they were stored at -80°C until analysis.

Before initiating sample analyses, the method was validated in triplicate over a range of anticipated MITC air concentrations. In addition, at the WSU-Tri Cities campus, blank charcoal cartridges were routinely fortified with a known concentration of MITC and ran for 12-hr at 2 L min^{-1} to evaluate sampling breakthrough and field related percent recovery (see Table B-3). Trip blanks were shipped with the residential air samples for quality control purposes. During analyses and for each laboratory analytical set, a blank cartridge and MITC fortified cartridge (at varying concentrations) were included with the residential samples. Laboratory percent recoveries are presented in Table B-2. A separate frozen storage stability study was not conducted since all samples were analyzed well before the previously conducted 85-day period storage stability evaluation for the 2005 air monitoring program (FEQL-NG-0605, 2006).

Discussion of Results

The analytical method for the measurement of MITC was found to be rugged with an analytical method limit of quantitation (LOQ) of 0.17 μg m^{-3} and method limit of detection (LOD) estimated at 0.03 μg m^{-3} (based on a total volume 2 L min^{-1} air flow for the 12-hr sampling interval). Two separate 12-hr samples were taken over each 24-hr sampling interval to compare averaged day and nighttime MITC air concentrations. Figure 2 presents the time weighted averaged MITC concnetrations from each site, for each 12-hour sampling interval from September 17 through November 3, 2007. Over this seven week period, MITC air concentrations were routinely observed above the method's limit of quantitation. The12-hr TWA MITC ambient air concentrations ranged from detectable (>0.03 μg m^{-3}) to 35.5 μg m^{-3} (11.7 ppb) [1] (see Table B-4). The seven week seasonal TWA residential exposure concentration was 4.4 μg m^{-3} (1.5 ppb) which exceeded Cal EPA subchronic REL value of 1 ppb but was less than the EPA HED threshold for non-occupational short and intermediate inhalation human exposure of 5 ppb. The observed TWA 4-hr maximum MITC air concentrations during the last week of October 2007 (Figure 3) were observed to exceed the EPA OPP HEC value of 22 ppb with a maximum MITC concentration of 121 μg m^{-3} (40 ppb) over the time period from 3 am to 7 am on the day of October 23rd. The 4 and 12-hr TWA MITC air concentration data were not corrected for field fortification percent recovery.

Taken as a whole, the 12-hr TWA MITC air concentration results in 2007 were surprisingly comparable to 2005 (see Figures 2 and 4). In 2005 and in 2007 we observed maximum 12-hr TWA MITC concentrations in late October days before the irrigation cut-off date. Additionally, the similarity in spatial and temporal residential air concentrations during these two monitoring years were striking considering the substantial variation in seasonal climatic patterns. Because we observed maximum MITC concentrations during the week before irrigation cut-off in 2005, in 2007 we chose to more intensively sample at 4-hr air monitoring intervals during this period. Our intent was to better assess shorter-term acute MITC inhalation concentrations. Results listed in Table B-4 pages 30-35 for this shorter interval study indicate MITC air concentrations exceeded the EPA-OPP acute HEC value of 22 ppb on October 23rd. It is important to also note

[1] $ppb = (\mu g\ m^{-3}) \times \frac{8.21 \times 10^{-2}\ \text{L-atm/mole-}^{o}\text{K}\ (298^{o}\text{K})}{(73.12\ \text{gram/mole})\ (1\ \text{atm})}$

that these higher 4-hr TWA MITC concentrations occurred during evening/early morning hours with the maximum observed concentration of 40 ppb occurring in the early morning hours.

Our combined 2005, 2007 12-hr TWA MITC ambient air information together with reported results from other investigators (Sullivan, 2004) indicate that higher MITC ambient air concentrations during the evening/early morning hours are not unexpected and are likely associated with stable air temperature conditions. Unfortunately, our ability to associate nighttime inversions with higher MITC air concentrations, although reasonable to assume, cannot be conclusive since meteorological temperature lapse data could not be collected at the Columbia Basin College weather station.

In this 2007 monitoring study, the observed TWA 4-hr maximum MITC air concentration of 40 ppb exceeded the EPA OPP HEC acute value of 22 ppb. Our observed TWA seven-week MITC air concentration of 1.5 ppb, although exceeding the Cal EPA subchronic REL value of 1 ppb was less than the EPA OPP 5 ppb HEC value for short and intermediate-term inhalation. Taken together, the 2005 and 2007 MITC air monitoring data suggest that the intensity of applications occurring over the short fall fumigation season contribute to the observed region-wide and fairly uniform air mass concentrations that can approach or exceed regulatory levels for acute residential inhalation exposure.

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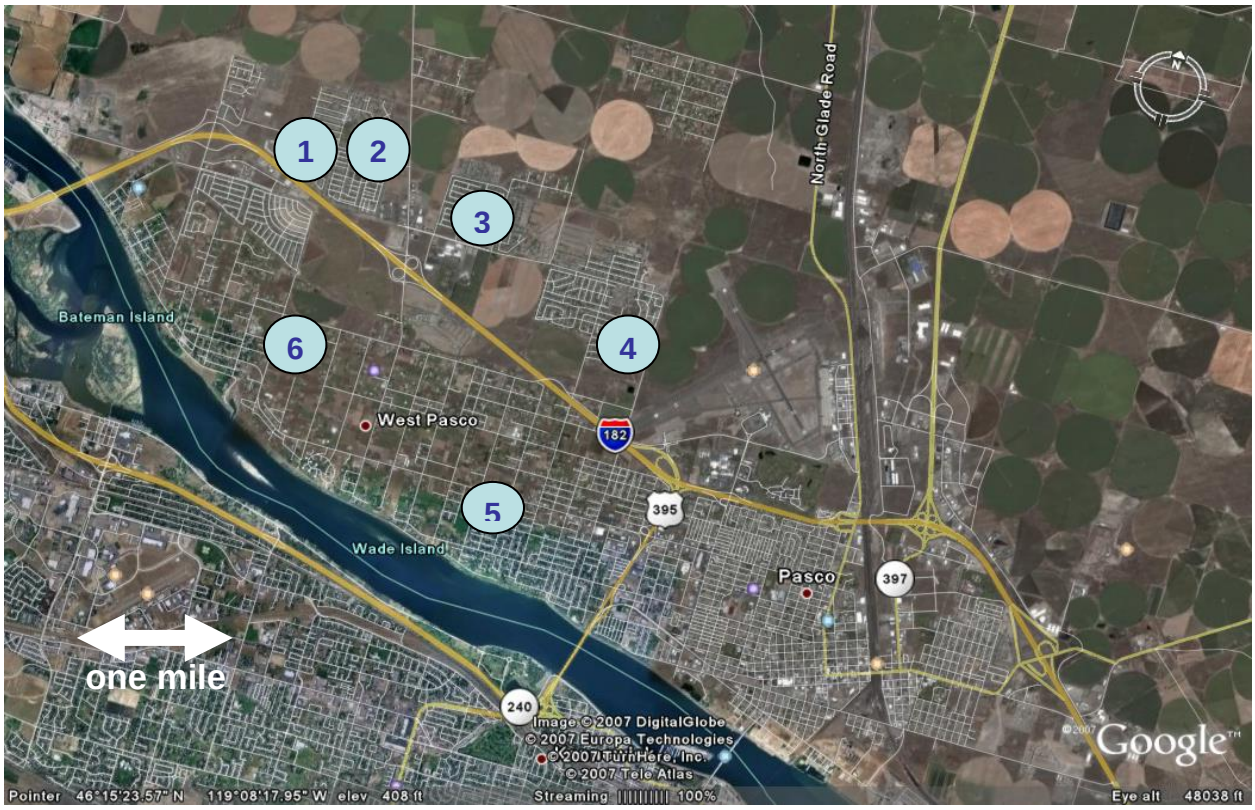
Burgess, J, Morrissey, B, Keifer, MC and Robertson WO, Fumigant-Related Illnesses: Washington State' Five-Year Experience. *Clinical Toxicology*, 38 (1), 7-14 (2000).

Food and Environmental Quality Laboratory. MITC residential community air assessment: South Franklin Co, Washington. Analytical Summary Rep FEQL-NG-0605. Accessed at: http://www.feql.wsu.edu/regsci.htm. (2006).

Merriman, J & Hebert, V Methyl Isothiocyanate Residential Community Air Assessment; South Franklin County, Washington. *Bull. of Environ. Contam. and Toxicol*. 78(1), 17-21 (2007).

Sullivan DA, Holdsworth MT, Hlinka DJ. Monte Carlo-based dispersion modeling of off-gassing releases from the fumigant metam-sodium for determining distances to exposure endpoints. *Atmos. Environ*. 38 2471–2481. (2004).

Figure 1
2007 site location, South Franklin County, Washington State



1. Site 1 T9N 29E S08
2. Site 2 T9N 29E S09
3. Site 3 T9N 29E S10
4. Site 4 T9N 29E S14
5. Site 5 T9N 29E S27
6. Site 6 T9N 29E S21

Figure 2
Twelve-hour TWA interval air monitoring: September 17th to November 2nd, 2007

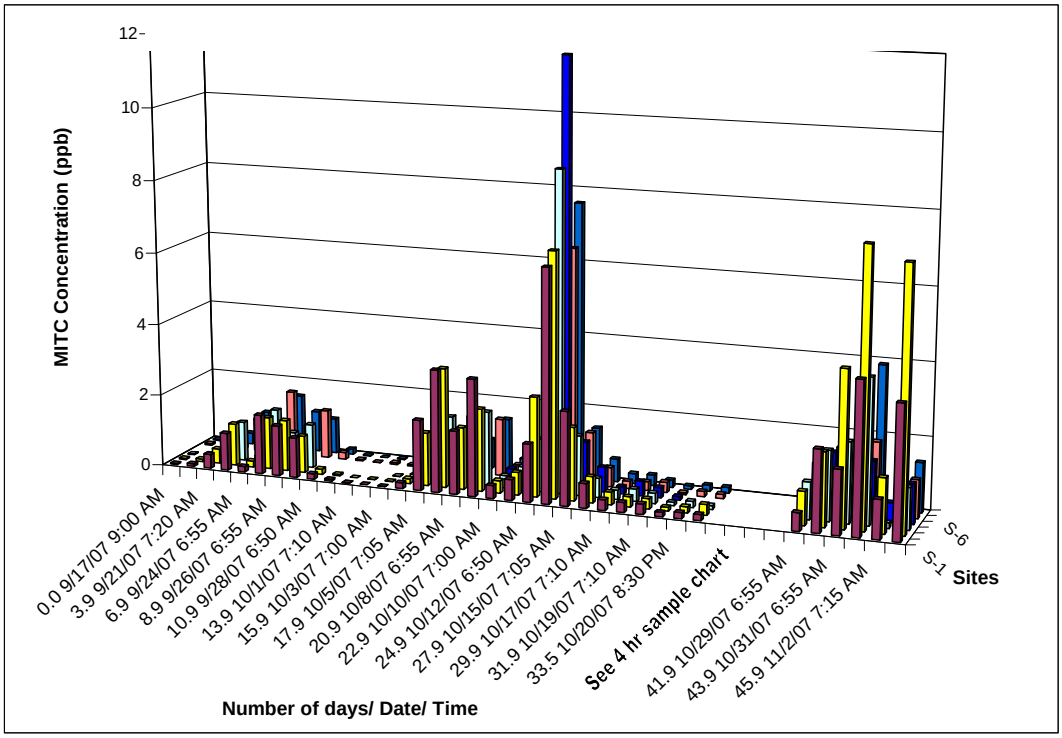


Figure 3
Four-hour TWA interval air monitoring: October 22-23, 24-25, and 26-27, 2007

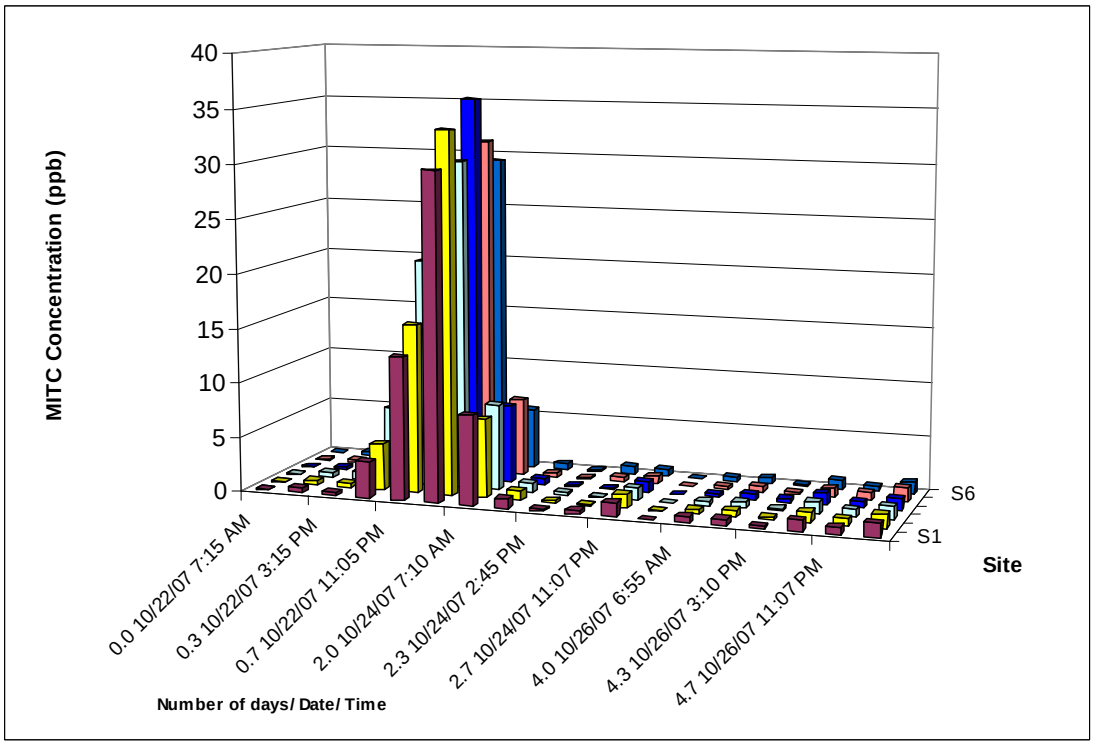
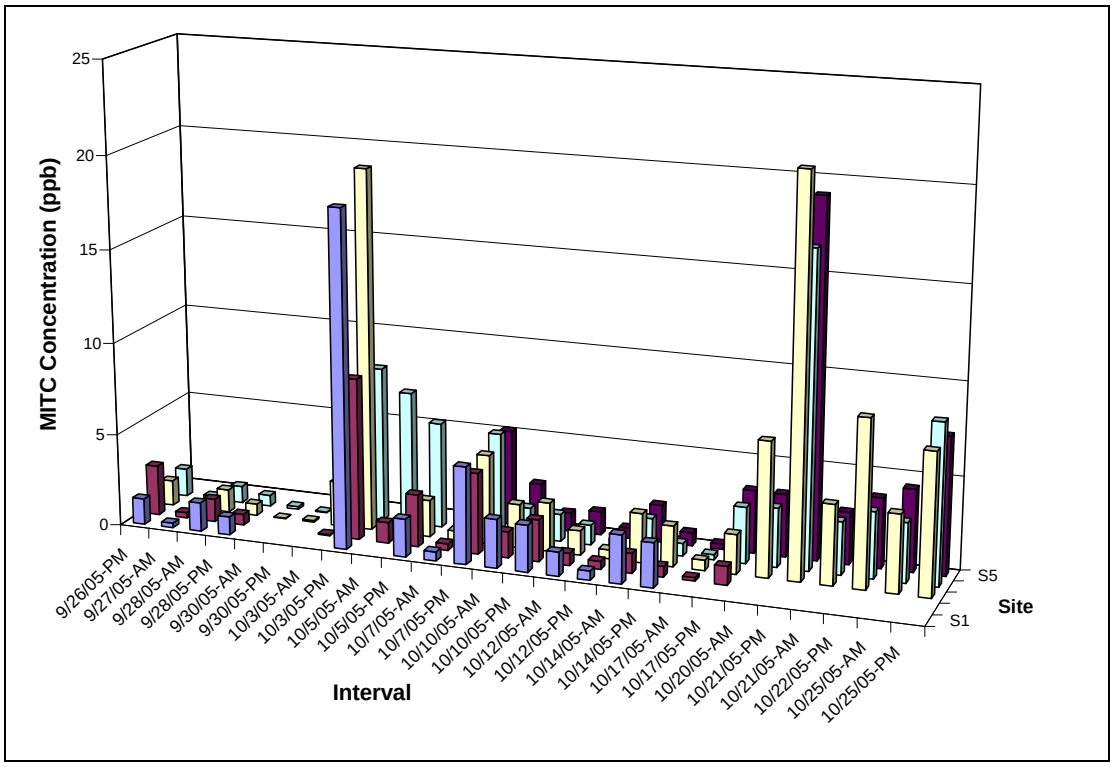


Figure 4
2005 Air Monitoring Study 12-hour TWA (ppb)



II. RESIDENTIAL AIR MONITORING STUDY DESCRIPTION

INTRODUCTION

Atmospheric off-target movement of methyl isothiocyanate (MITC) during and post-chemigation may represent a significant exposure pathway to non-target residential areas. The purpose of this study was to determine whether off-target MITC emissions by currently employed fumigation practices exceeded the USEPA Office of Pesticide Protection (OPP) criteria for acute and subchronic residential inhalation exposure.

This monitoring study was initiated in September 2007 at the start of the metam sodium fumigation season and continued one week after Franklin County's October 25th irrigation cut-off date to estimate residential MITC emissions in this region of traditional agriculture and expanding residential communities.

A. PERSONNEL

Jason Merriman, Graduate Research Assistant
Jane LePage, Agricultural Research Technician III
Vincent Hebert, Laboratory Research Director

B. TEST SYSTEM

Six outdoor sampling masts were employed to collect ambient air at residential and commercial locations in south Franklin County from September 17 through November 3, 2007. Each mast consisted of a cross-arm at 1.5-m height that held two collocated charcoal sampling tubes at opposite ends of the cross-arm. Each tube contained 2 g coconut charcoal for the 12-hour and 1 g coconut charcoal for the 4-hour sampling periods employed by this study; both sizes of cartridges were prepared by SKC West, Fullerton, CA. Two AC powered air sampling units (SKC AirChek Samplers) sampled air at ca. 2 L/min. for each mast assembly. Actual flows for each sampling cartridge were measured by flow meter at the start and end of each sampling period and recorded. The averaged two-point flow rate reading and sampling duration were used to calculate the total volume of air sampled in cubic meters.

C. TRIAL LOCATIONS

This residential air monitoring study was comprised of six sites in south Franklin County, Washington. Five sites were located at single family homes and one at a commercial building. Site 7 at the WSU Tri Cities campus served as a control location. Table A-1 and Figure 1 provide approximate locations for the six test sites.

Table A-1
Monitoring Locations

Site 1 **S1** Township 9 N Range 29 E Section 08	Site 2 **S2** Township 9 N Range 29 E Section 09
Site 3 **S3** Township 9 N Range 29 E Section 10	Site 4 **S4** Township 9 N Range 29 E Section 14
Site 5 **S5** Township 9 N Range 29 E Section 27	Site 6 **S6** Township 9 N Range 29 E Section 21
Site 7 **S7** Washington State University Tri-Cities Campus Benton County, WA (QA/QC Site Only)	

D. SAMPLING INFORMATION

1. Week 1, 2, 3, 4, 5, and 7; 12-hr interval air sampling.

Air monitoring was conducted from September 17, 2007 to November 3, 2007. Air was monitored at 24 hour intervals for three days weekly over this period. For each 24-hour sampling day, air was sampled during the day for 12 hours and in the evening for 12 hours. After each day/night ca. 12-hour sampling event the charcoal sampling tubes were removed from the sampler and immediately transferred on blue ice to the Food & Environmental Quality Laboratory (FEQL), Washington State University, 2710 University Drive Richland, WA where they were placed in frozen storage at -80°C. Trip blanks routinely accompanied the sample shipment. Additionally, at the WSU-Tri City campus, blank charcoal cartridges were routinely fortified and sampled over the 12-hour interval to account for possible MITC losses from breakthrough.

Sample Coding: The samples acquired from the field were given a unique sample code. This code was constructed so that each individual sample at each site location had unique alphanumeric values that were traceable. The coding designations were as follows:

Site Name**	Site Code	AM	PM	Collocation	Day*
Station 1	S1	AM	PM	R/L	A through T
Station 2	S2	AM	PM	R/L	A through T
Station 3	S3	AM	PM	R/L	A through T
Station 4	S4	AM	PM	R/L	A through T
Station 5	S5	AM	PM	R/L	A through T
Station 6	S6	AM	PM	R/L	A through T
Station 7	S7	AM	PM	R/L	E,H,J,N,T

* The planned sampling schedule was 3 times per week for 5 weeks (i.e, 12 sampling days, designated A (day 1, week 1) through T (day 3, week 7).

** Station location residential and commercial building addresses will be kept confidential.

The trip blanks that routinely accompanied day and evening shipments received a TB designation. For example the charcoal tube labeled **S3-PM-L-D** uniquely identified the sample taken at station 3 during the 12-hour evening sampling period from the left position on the sampling mast. "D" indicated that this sample was taken during the fourth sampling interval. A charcoal tube labeled **TB-PM-F** would indicate that the sample is a trip blank stored with samples taken in the evening on the 6th sampling interval date. A sample coded **S7-AM-R-J-F** would indicate that this was a field fortified sample conducted in the morning on the 10th interval sampling date at Station 7.

Stations 1,2,3,5, and 6 were started on the first day (A) of the study. Station 4 was added to the monitoring program 10 sampling days thereafter. Station 7 was a sampling mast located on the grounds of WSU Tri-Cities for the purpose of field fortifications. The dates and times for sample placement for the 12-hour intervals are provided in Table A-2, Appendix B.

Sampling Frequency and Duration: The outdoor air samplers were operated three days per week starting mid-September through early November, 2007. To avoid breakthrough, 2-gram cartridges were replaced at 12-hour intervals during the day of sampling. Two extra 12-hour sampling events were inserted on the evening of October 21 and the evening of October 22, the weekend before the 4-hour interval began. These two sampling events were labeled with the date instead of the letter corresponding to the day.

2. Week 6; 4-hour interval air sampling

During week six of the study, the sampling interval was changed to 4-hr intervals to better capture MITC air concentration throughout a 24-hr period.

Siting: Residential sampling locations were identical. However, 1-gram SKC charcoal cartridges were employed to collect MITC from the ambient air. Flow rates were set to 2 L/min and were measured at the start and end of each sampling period using a calibrated flow meter.

Sampling Frequency and Duration: The outdoor air samplers were operated three days during week 6. The 1-gram cartridges were replaced at 4-hour intervals during each day of sampling.

The coding for the 4-hr, week-6 samples were as follows:

Site Name**	Site Code	Interval	Collocation	Day*
Station 1	S1	0, 4, 8, 12, 16, 20	R/L	O, P, Q
Station 2	S2	0, 4, 8, 12, 16, 20	R/L	O, P, Q
Station 3	S3	0, 4, 8, 12, 16, 20	R/L	O, P, Q
Station 4	S4	0, 4, 8, 12, 16, 20	R/L	O, P, Q
Station 5	S5	0, 4, 8, 12, 16, 20	R/L	O, P, Q
Station 6	S6	0, 4, 8, 12, 16, 20	R/L	O, P, Q
Station 7	S7	4,12	R/L	P

* The planned sampling schedule was 18 times per week during the 6th week (i.e, 3 sampling days, designated O (day 1,hour 0, week 6) through Q (day 3, hour 20, week 6).

** Station location residential and commercial building addresses will be kept confidential.

A charcoal tube labeled **S5-8-R-P** would uniquely identify the sample taken at station 5 during the third 4-hour sampling period from the right position on the sampling mast. "P" would indicate that this sample was taken during the second sampling day of week 6. The dates and times for sample placement for the 4-hour intervals are listed in Table A-3, Appendix B.

E. FIELD DOCUMENTATION AND RECORD KEEPING

All operations, data and observations appropriate to this study were recorded directly into the FIELD DATA BOOK (FEQL-1207A). The data book for this study was designed for collecting field information and serves as an authentic record of fieldwork. All field data information will be archived for a period of 5 years (see Appendix A Project Protocol for more information).

F. WEATHER DATA

Weather data was collected by a WSU Ag WeatherNet weather station at the Columbia Basin College, Pasco WA. This weather station was stationed within 5 miles of the sampling site locations. Figures 5, 6, and 7 respectively summarize air temperatures, precipitation, and wind velocity during the 7-week study period. In relation to the 2005 residential air monitoring season, this similar interval sampling period had more days of rain and sustained winds above 10 mph. A rain event occurred on October 19th. Afterwards, from October 20 through the 23rd, air conditions remained calm. This was also the period when we observed our higher MITC air concentrations and was just days before the irrigation cut off date. An expanded data set (by hour) from the WSU Ag WeatherNet weather station are provided in Appendix C.

Figure 5
Daily Weather Data
Air Temperature (˚C)

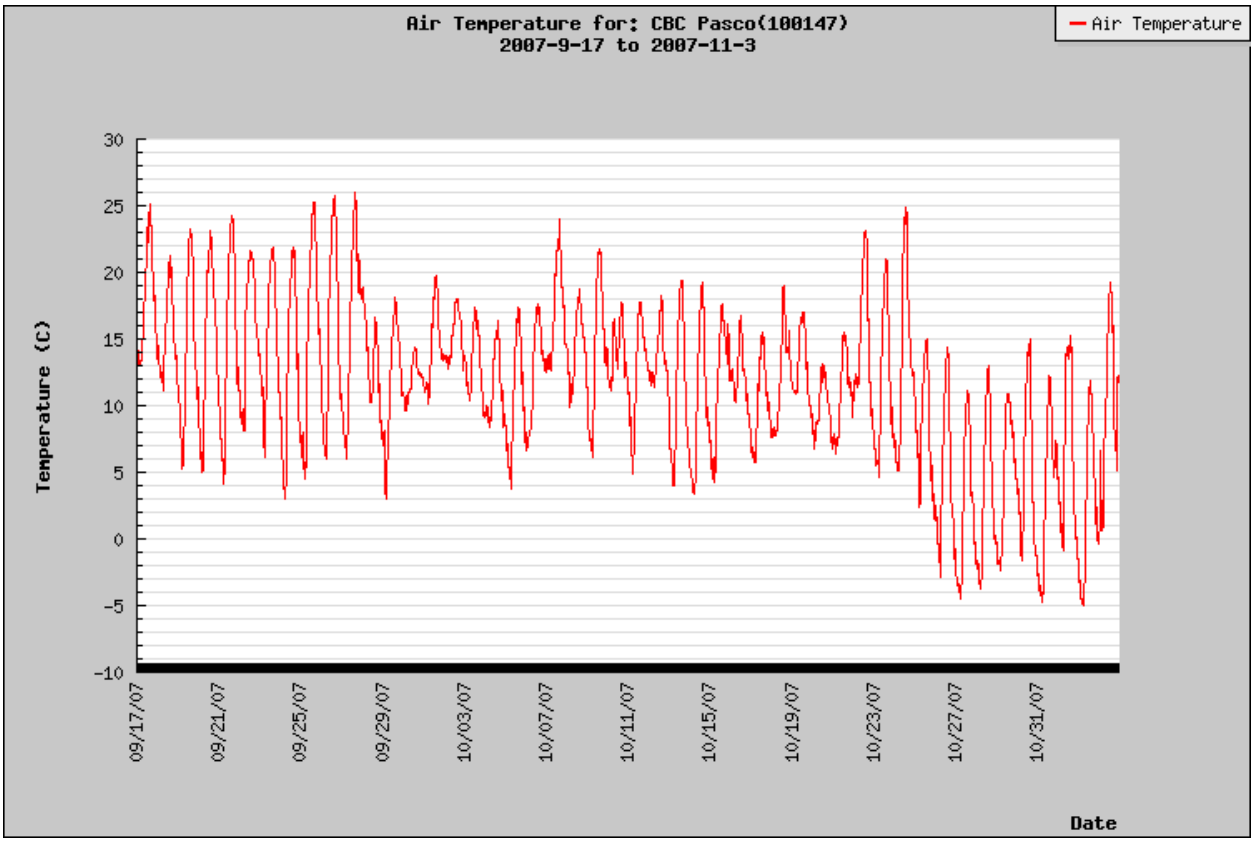


Figure 6
Daily Weather Data
Precipitation (in)

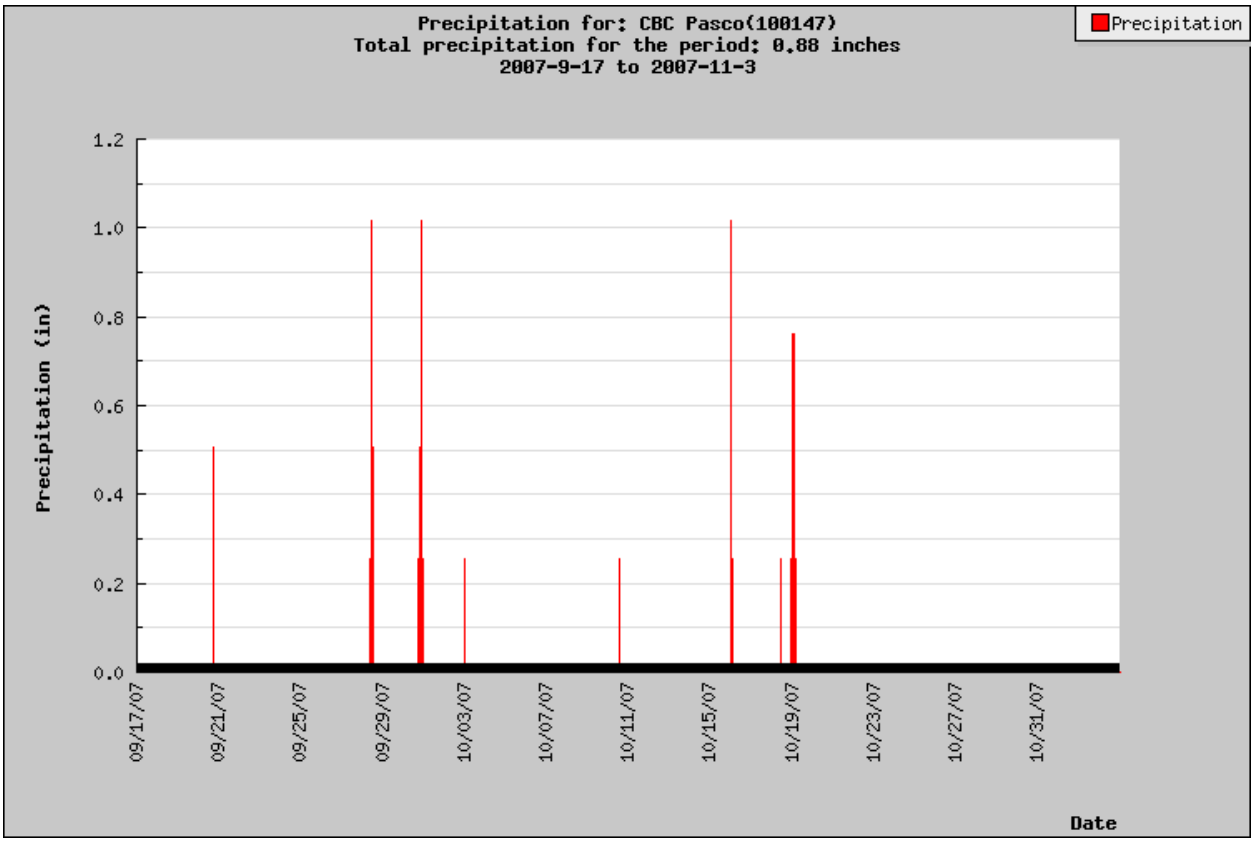
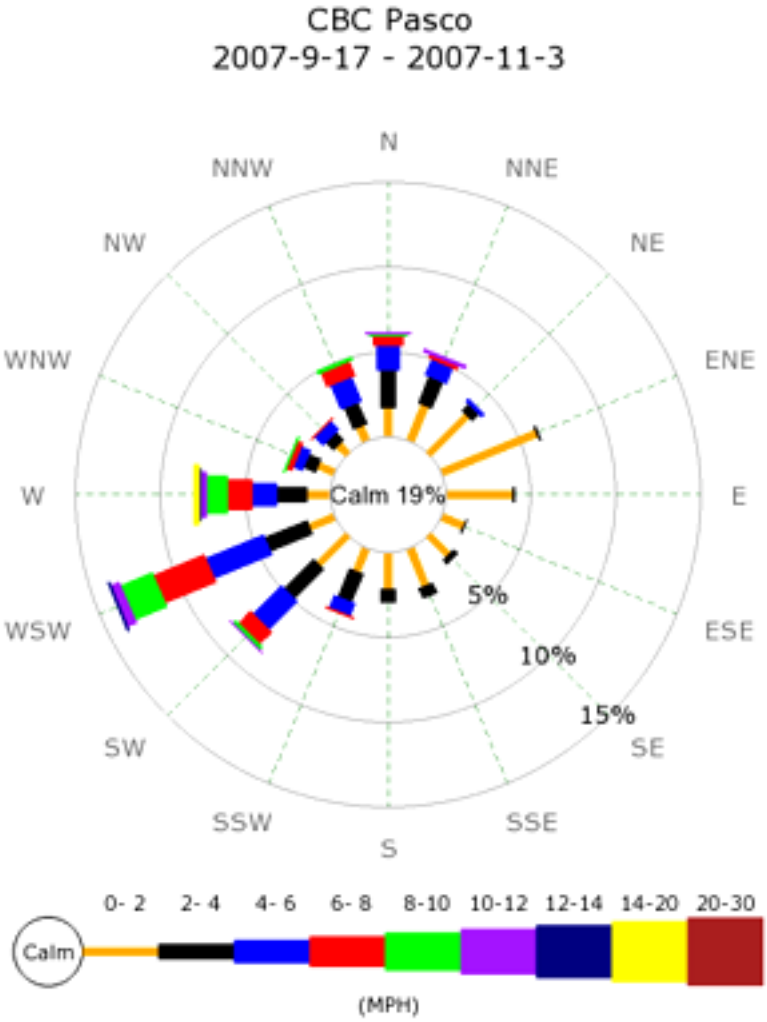


Figure 7
Daily Weather Data
Wind Rose (mph)



III. AIR MONITORING RESULTS

A. ANALYTICAL METHOD VALIDATION

The analytical method for the measurement of MITC was validated in triplicate at 0.5 µg, 2.5 µg, and 25 µg total MITC. The method limit of quantitation (LOQ) was estimated to be 0.17 µg m^{-3} (ca. 0.06 ppb) with a detection limit of 0.03 µg m^{-3} (ca. 0.01 ppb) based on the chromatographic results and a 12 hour air sample at a rate of 2 L min^{-1}. The method validation recovery information can be found in Table B-1.

B. MITC ANALYSIS

Quality control data are summarized in Table B-2. The averaged MITC recovery from laboratory fortifications performed with each analytical sample set was 95.9% ± 10.3% (n=54) (see Table B-2).

Fortified spikes were placed in the intakes of the air sampling tubes on the sampling mast set at the WSU-TC campus. These fortified field samples were run outdoors for 4 or 12 hours during the air sampling period to verify quantitative field recovery of vapor-trapped MITC. The recoveries from the field fortification samples were 85% $\pm$ 18% (10 µg MITC) and 89% $\pm$ 10% (100 µg MITC). The percent recoveries were good except when the samples trapped significant moisture. Table B-3 provides a summary of the percent recoveries for the 12 field fortifications taken on interval dates E, H, J, N, 4-P, 12-P, and T. The fortification field samples values reported in Table B-3 were not used in the calculation of 12-hour TWA MITC residential air concentrations.

Air sample concentration results are provided in Table B-4.

C. TABLES

Table B-1
2007 MITC Method Validation Results

2 g Cartridge Fortification (µg)	Recovery %
0.5	97.6%
	98.5%
	95.5%
2.5	92.7%
	90.9%
	90.3%
25	98.2%
	100.0%
	101.5%
250	95.5%
	97.5%
	100.0%
Overall average validation recovery	96.5 ± 3.6%

Table B-2
Laboratory Fortifications
for MITC extraction

Concentrations (ug MITC)	Recovery Range (%)	Average Recovery (%)	SD	Number of Forts
0.5	81-117	96	11	7
1	75-110	92	16	4
2.5	91-111	98	6	11
5	83-123	99	21	3
10	72-117	94	13	17
25	94-101	98	2	12

* in a final volume of 5 mL extraction solvent (see Appendix D)

Table B-3
Summary of Field Fortification Recoveries

Concentrations (ug MITC)	Recovery Range (%)	Average Recovery (%)	SD	Number of Forts
10	54-109	85	18	6
100	72-98	89	10	6

* in a final volume of 5 mL extraction solvent (see Appendix D)

Table B-3 (continued)
Individual Field Fortification Sample
MITC Results (Site 7)

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)	Fortification Level (µg)	Recovery (%)
9/28/2007 AM	S7-PM-L-E-F	8.22	…	…	10	82.2%
	S7-AM-L-E	0.55	1.37	0.40	NA	
9/28/2007 PM	S7-PM-R-E	ND	1.46		NA	
	S7-AM-R-E-F	5.38	2.83		10	53.8%
10/5/2007 AM	S7-AM-R-H-F	14.66	1.34	10.94	10	93.1%
	S7-AM-L-H	5.35	1.34	3.99	NA	
10/5/2007 PM	S7-PM-R-H	18.53	1.44	12.87	NA	
	S7-PM-L-H-F	29.46	1.44	20.46	10	109.3%
10/10/2007 AM	S7-AM-R-J-F	12.46	1.59	7.84	10	82.1%
	S7-AM-L-J	4.25	1.59	2.68	NA	
10/11/2007 PM	S7-PM-R-J	1.24	1.45	0.85	NA	
	S7-PM-L-J-F	10.40	1.45	7.17	10	91.6%
10/19/2007 AM	S7-AM-R-N-F	73.11	1.40	52.22	100	72.2%
	S7-AM-L-N	0.93	1.40	0.66	NA	
10/19/2007 PM	S7-PM-R-N	0.57	1.39	0.41	NA	
	S7-PM-L-N-F	91.02	1.39	65.48	100	90.5%
10/24/2007 AM	S7-4-R-P-F	94.64	0.34	278.35	100	93.4%
	S7-4-L-P	1.19	0.34	3.50	NA	
10/24/2007 PM	S7-12-R-P	0.53	0.50	1.07	NA	
	S7-12-L-P-F	98.63	0.50	198.06	100	98.1%
11/2/2007 AM	S7-AM-R-T-F	85.43	1.49	57.34	100	82.9%
	S7-AM-L-T	2.56	1.49	1.72	NA	
11/2/2007 PM	S7-PM-R-T	3.68	1.46	2.52	NA	
	S7-PM-L-T-F	100.90	1.46	69.11	100	97.2%

Table B-4
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
9/17/2007 AM	S1-AM-R-A	0.16	1.44	<LOQ
	S1-AM-L-A	0.12	1.44	<LOQ
	S2-AM-R-A	0.14	1.40	<LOQ
	S2-AM-L-A	NA	…	…
	S3-AM-R-A	0.16	1.37	<LOQ
	S3-AM-L-A	0.03	1.37	<LOQ
	S4-AM-R-A	NA	…	…
	S4-AM-L-A	NA	…	…
	S5-AM-R-A	0.19	1.43	<LOQ
	S5-AM-L-A	NA	…	…
	S6-AM-R-A	0.14	1.38	<LOQ
	S6-AM-L-A	0.11	1.38	<LOQ
	TB-AM-R	ND	…	…
9/17/2007 PM	S1-PM-R-A	0.35	1.43	0.24
	S1-PM-L-A	0.28	1.43	0.19
	S2-PM-R-A	0.28	1.46	0.19
	S2-PM-L-A	NA	…	…
	S3-PM-R-A	0.33	1.49	0.22
	S3-PM-L-A	NA	…	…
	S4-PM-R-A	NA	…	…
	S4-PM-L-A	NA	…	…
	S5-PM-R-A	0.44	1.43	0.31
	S5-PM-L-A	0.50	1.43	0.35
	S6-PM-R-A	0.42	1.48	0.28
	S6-PM-L-A	0.36	1.48	0.25
	TB-PM-T	ND	…	…
9/21/2007 AM	S1-AM-R-B	1.94	1.51	1.29
	S1-AM-L-B	1.62	1.51	1.07
	S2-AM-R-B	1.86	1.48	1.26
	S2-AM-L-B	1.76	1.48	1.19
	S3-AM-R-B	1.52	1.39	1.09
	S3-AM-L-B	0.73	1.39	0.52
	S4-AM-R-B	NA	…	…
	S4-AM-L-B	NA	…	…
	S5-AM-R-B	1.42	1.39	1.02
	S5-AM-L-B	1.35	1.39	0.97
	S6-AM-R-B	1.46	1.39	1.05
	S6-AM-L-B	1.23	1.39	0.88
	TB-AM-R	ND	…	…

NA – not analyzed due to pump failure or no sample taken
ND - not detectable (i.e, < 0.03 µg m^{-3})
<LOQ-Limit of Quantitation (i.e. <0.17 µg m^{-3}

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
9/21/2007 PM	S1-PM-R-B	4.51	1.49	3.02
	S1-PM-L-B	4.91	1.49	3.30
	S2-PM-R-B	5.75	1.54	3.72
	S2-PM-L-B	5.17	1.54	3.35
	S3-PM-R-B	5.40	1.64	3.29
	S3-PM-L-B	NA	…	…
	S4-PM-R-B	NA	…	…
	S4-PM-L-B	NA	…	…
	S5-PM-R-B	4.70	1.66	2.83
	S5-PM-L-B	4.50	1.66	2.71
	S6-PM-R-B	5.22	1.66	3.14
	S6-PM-L-B	4.60	1.66	2.77
	TB-PM-T	ND	…	…
9/24/2007 AM	S1-AM-R-C	0.70	1.49	0.47
	S1-AM-L-C	0.65	1.49	0.44
	S2-AM-R-C	0.74	1.47	0.51
	S2-AM-L-C	0.71	1.47	0.49
	S3-AM-R-C	0.74	1.43	0.52
	S3-AM-L-C	0.76	1.43	0.53
	S4-AM-R-C	NA	…	…
	S4-AM-L-C	NA	…	…
	S5-AM-R-C	0.88	1.36	0.65
	S5-AM-L-C	0.76	1.36	0.56
	S6-AM-R-C	0.65	1.36	0.48
	S6-AM-L-C	0.59	1.36	0.44
	TB-AM-R	ND	…	…
9/24/2007 PM	S1-PM-R-C	7.35	1.40	5.25
	S1-PM-L-C	6.71	1.40	4.80
	S2-PM-R-C	6.16	1.42	4.34
	S2-PM-L-C	6.31	1.42	4.44
	S3-PM-R-C	6.87	1.45	4.74
	S3-PM-L-C	6.63	1.45	4.57
	S4-PM-R-C	NA	…	…
	S4-PM-L-C	NA	…	…
	S5-PM-R-C	8.56	1.51	5.67
	S5-PM-L-C	7.81	1.51	5.17
	S6-PM-R-C	7.40	1.53	4.84
	S6-PM-L-C	6.96	1.53	4.55
	TB-PM-T	ND	…	…

NA – not analyzed due to pump failure or no sample taken
ND - not detectable (i.e, < 0.03 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
9/26/2007 AM	S1-AM-R-D	6.41	1.45	4.42
	S1-AM-L-D	5.88	1.45	4.05
	S2-AM-R-D	6.29	1.44	4.37
	S2-AM-L-D	6.10	1.44	4.24
	S3-AM-R-D	5.17	1.44	3.59
	S3-AM-L-D	2.99	0.76	3.79
	S4-AM-R-D	NA	…	…
	S4-AM-L-D	NA	…	…
	S5-AM-R-D	3.65	1.43	2.55
	S5-AM-L-D	3.76	1.43	2.63
	S6-AM-R-D	4.84	1.40	3.45
	S6-AM-L-D	NA	…	…
	TB-AM-R	ND	…	…
9/26/2007 PM	S1-PM-R-D	5.17	1.44	3.59
	S1-PM-L-D	4.47	1.44	3.10
	S2-PM-R-D	4.57	1.44	3.17
	S2-PM-L-D	4.42	1.44	3.07
	S3-PM-R-D	5.27	1.44	3.66
	S3-PM-L-D	NA	…	…
	S4-PM-R-D	NA	…	…
	S4-PM-L-D	NA	…	…
	S5-PM-R-D	5.81	1.42	4.09
	S5-PM-L-D	5.79	1.42	4.08
	S6-PM-R-D	4.43	1.45	3.05
	S6-PM-L-D	4.15	1.45	2.86
	TB-PM-T	ND	…	…
9/28/2007 AM	S1-AM-R-E	0.66	1.39	0.48
	S1-AM-L-E	0.62	1.39	0.45
	S2-AM-R-E	0.61	1.39	0.44
	S2-AM-L-E	0.60	1.39	0.43
	S3-AM-R-E	NA	…	…
	S3-AM-L-E	NA	…	…
	S4-AM-R-E	NA	…	…
	S4-AM-L-E	NA	…	…
	S5-AM-R-E	0.82	1.38	0.59
	S5-AM-L-E	0.79	1.38	0.57
	S6-AM-R-E	0.62	1.39	0.45
	S6-AM-L-E	0.61	1.39	0.44
	TB-AM-R	ND	…	…

NA – not analyzed due to pump failure or no sample taken
ND - not detectable (i.e, < 0.03 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
9/28/2007 PM	S1-PM-R-E	0.24	1.48	<LOQ
	S1-PM-L-E	0.21	1.48	<LOQ
	S2-PM-R-E	0.21	1.49	<LOQ
	S2-PM-L-E	0.22	1.49	<LOQ
	S3-PM-R-E	NA	…	…
	S3-PM-L-E	NA	…	…
	S4-PM-R-E	NA	…	…
	S4-PM-L-E	NA	…	…
	S5-PM-R-E	0.19	1.49	<LOQ
	S5-PM-L-E	0.19	1.49	<LOQ
	S6-PM-R-E	0.10	1.47	<LOQ
	S6-PM-L-E	0.09	1.47	<LOQ
	TB-PM-T	ND	…	…
10/1/2007 AM	S1-AM-R-F	ND	1.36	ND
	S1-AM-L-F	ND	1.36	ND
	S2-AM-R-F	ND	1.36	ND
	S2-AM-L-F	ND	1.36	ND
	S3-AM-R-F	NA	…	…
	S3-AM-L-F	NA	…	…
	S4-AM-R-F	NA	…	…
	S4-AM-L-F	NA	…	…
	S5-AM-R-F	0.04	1.36	<LOQ
	S5-AM-L-F	0.04	1.36	<LOQ
	S6-AM-R-F	ND	1.37	ND
	S6-AM-L-F	ND	1.37	ND
	TB-AM-R	ND	…	…
10/1/2007 PM	S1-PM-R-F	0.05	1.50	<LOQ
	S1-PM-L-F	0.05	1.50	<LOQ
	S2-PM-R-F	0.06	1.50	<LOQ
	S2-PM-L-F	0.04	1.50	<LOQ
	S3-PM-R-F	NA	…	…
	S3-PM-L-F	NA	…	…
	S4-PM-R-F	NA	…	…
	S4-PM-L-F	NA	…	…
	S5-PM-R-F	0.22	1.57	<LOQ
	S5-PM-L-F	0.24	1.57	<LOQ
	S6-PM-R-F	0.12	1.42	<LOQ
	S6-PM-L-F	0.09	1.42	<LOQ
	TB-PM-T	ND	…	…

NA – not analyzed due to pump failure or no sample taken
ND - not detectable (i.e, < 0.03 µg m^{-3})
<LOQ-Limit of Quantitation (i.e. <0.17 µg m^{-3}

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/3/2007 AM	S1-AM-R-G	0.07	1.38	<LOQ
	S1-AM-L-G	0.06	1.38	<LOQ
	S2-AM-R-G	0.06	1.38	<LOQ
	S2-AM-L-G	0.03	1.38	<LOQ
	S3-AM-R-G	0.04	1.38	<LOQ
	S3-AM-L-G	0.03	1.38	<LOQ
	S4-AM-R-G	NA	…	…
	S4-AM-L-G	NA	…	…
	S5-AM-R-G	0.15	1.37	<LOQ
	S5-AM-L-G	0.18	1.37	<LOQ
	S6-AM-R-G	0.07	1.37	<LOQ
	S6-AM-L-G	0.07	1.37	<LOQ
	TB-AM-R	ND	…	…
10/3/2007 PM	S1-PM-R-G	0.77	1.44	0.54
	S1-PM-L-G	0.66	1.44	0.46
	S2-PM-R-G	0.58	1.44	0.40
	S2-PM-L-G	0.59	1.44	0.41
	S3-PM-R-G	0.47	1.44	0.32
	S3-PM-L-G	0.44	1.44	0.31
	S4-PM-R-G	NA	…	…
	S4-PM-L-G	NA	…	…
	S5-PM-R-G	0.49	1.44	0.34
	S5-PM-L-G	0.50	1.44	0.34
	S6-PM-R-G	0.56	1.44	0.39
	S6-PM-L-G	0.56	1.44	0.39
	TB-PM-T	ND	…	…
10/5/2007 AM	S1-AM-R-H	8.77	1.38	6.35
	S1-AM-L-H	7.57	1.38	5.48
	S2-AM-R-H	6.34	1.39	4.56
	S2-AM-L-H	6.01	1.39	4.32
	S3-AM-R-H	4.04	1.39	2.90
	S3-AM-L-H	3.46	1.39	2.49
	S4-AM-R-H	NA	…	…
	S4-AM-L-H	NA	…	…
	S5-AM-R-H	2.36	1.39	1.70
	S5-AM-L-H	2.42	1.39	1.74
	S6-AM-R-H	2.07	1.38	1.50
	S6-AM-L-H	2.25	1.38	1.63
	TB-PM-T	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})
<LOQ-Limit of Quantitation (i.e. <0.17 µg m^{-3}

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/5/2007 PM	S1-PM-R-H	15.46	1.45	10.65
	S1-PM-L-H	14.26	1.45	9.82
	S2-PM-R-H	14.11	1.44	9.78
	S2-PM-L-H	14.65	1.44	10.16
	S3-PM-R-H	7.72	1.44	5.35
	S3-PM-L-H	8.25	1.44	5.72
	S4-PM-R-H	NA	…	…
	S4-PM-L-H	NA	…	…
	S5-PM-R-H	4.57	1.45	3.14
	S5-PM-L-H	4.86	1.45	3.34
	S6-PM-R-H	6.18	1.46	4.22
	S6-PM-L-H	6.50	1.46	4.44
	TB-PM-T	ND	…	…
10/8/2007 AM	S1-AM-R-I	7.51	1.38	5.44
	S1-AM-L-I	7.16	1.38	5.19
	S2-AM-R-I	7.02	1.38	5.09
	S2-AM-L-I	7.25	1.38	5.26
	S3-AM-R-I	4.85	1.39	3.49
	S3-AM-L-I	4.25	1.39	3.06
	S4-AM-R-I	NA	…	…
	S4-AM-L-I	NA	…	…
	S5-AM-R-I	2.95	1.37	2.15
	S5-AM-L-I	3.07	1.37	2.24
	S6-AM-R-I	3.37	1.36	2.48
	S6-AM-L-I	3.56	1.36	2.62
	TB-PM-T	ND	…	…
10/8/2007 PM	S1-PM-R-I	16.96	1.55	10.94
	S1-PM-L-I	13.30	1.55	8.58
	S2-PM-R-I	10.60	1.55	6.84
	S2-PM-L-I	10.77	1.55	6.95
	S3-PM-R-I	9.24	1.54	6.00
	S3-PM-L-I	9.99	1.54	6.49
	S4-PM-R-I	NA	…	…
	S4-PM-L-I	NA	…	…
	S5-PM-R-I	7.13	1.55	4.60
	S5-PM-L-I	7.72	1.55	4.98
	S6-PM-R-I	6.50	1.55	4.19
	S6-PM-L-I	7.13	1.55	4.60
	TB-PM-T	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/10/2007 AM	S1-AM-R-J	1.57	1.40	1.12
	S1-AM-L-J	1.47	1.40	1.05
	S2-AM-R-J	1.40	1.39	1.00
	S2-AM-L-J	1.52	1.39	1.09
	S3-AM-R-J	1.45	1.40	1.03
	S3-AM-L-J	1.38	1.40	0.98
	S4-AM-R-J	1.63	1.39	1.17
	S4-AM-L-J	1.65	1.39	1.19
	S5-AM-R-J	1.40	1.40	1.00
	S5-AM-L-J	1.55	1.40	1.11
	S6-AM-R-J	1.57	1.40	1.12
	S6-AM-L-J	1.57	1.40	1.12
	TB-PM-T	ND	…	
10/11/2007 PM	S1-PM-R-J	2.69	1.44	1.87
	S1-PM-L-J	2.33	1.44	1.62
	S2-PM-R-J	2.63	1.44	1.83
	S2-PM-L-J	2.83	1.44	1.97
	S3-PM-R-J	ND	1.44	ND
	S3-PM-L-J	2.79	1.44	1.94
	S4-PM-R-J	4.80	1.45	3.31
	S4-PM-L-J	5.09	1.45	3.51
	S5-PM-R-J	1.67	1.45	1.15
	S5-PM-L-J	1.71	1.45	1.18
	S6-PM-R-J	1.73	1.45	1.20
	S6-PM-L-J	1.75	1.45	1.21
	TB-PM-T	ND	…	…
10/12/2007 AM	S1-AM-R-K	7.65	1.52	5.02
	S1-AM-L-K	7.13	1.52	4.68
	S2-AM-R-K	12.11	1.52	7.96
	S2-AM-L-K	13.16	1.52	8.66
	S3-AM-R-K	7.23	1.52	4.76
	S3-AM-L-K	6.13	1.52	4.03
	S4-AM-R-K	5.11	1.51	3.38
	S4-AM-L-K	4.76	1.51	3.15
	S5-AM-R-K	3.96	1.51	2.62
	S5-AM-L-K	3.90	1.51	2.58
	S6-AM-R-K	9.40	1.52	6.19
	S6-AM-L-K	9.50	1.52	6.25
	TB-PM-T	ND	…	…

NA – not analyzed ND - not detectable (i.e, < 0.03 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/12/2007 PM	S1-PM-R-K	26.90	1.36	19.81
	S1-PM-L-K	25.73	1.36	18.95
	S2-PM-R-K	26.86	1.36	19.72
	S2-PM-L-K	28.66	1.36	21.04
	S3-PM-R-K	37.99	1.36	27.98
	S3-PM-L-K	34.38	1.36	25.31
	S4-PM-R-K	50.97	1.37	37.20
	S4-PM-L-K	46.36	1.37	33.84
	S5-PM-R-K	26.45	1.37	19.28
	S5-PM-L-K	27.50	1.37	20.04
	S6-PM-R-K	31.96	1.36	23.47
	S6-PM-L-K	30.93	1.36	22.71
	TB-PM-T	ND	…	…
10/15/2007AM	S1-AM-R-L	11.26	1.44	7.82
	S1-AM-L-L	11.21	1.44	7.79
	S2-AM-R-L	8.75	1.44	6.07
	S2-AM-L-L	9.03	1.44	6.26
	S3-AM-R-L	7.42	1.44	5.16
	S3-AM-L-L	7.21	1.44	5.01
	S4-AM-R-L	6.18	1.45	4.26
	S4-AM-L-L	5.98	1.45	4.13
	S5-AM-R-L	6.23	1.46	4.28
	S5-AM-L-L	7.03	1.46	4.83
	S6-AM-R-L	5.95	1.45	4.09
	S6-AM-L-L	7.19	1.45	4.95
	TB-AM-R	ND	…	…
10/15/2007 PM	S1-PM-R-L	2.71	1.46	1.85
	S1-PM-L-L	3.21	1.46	2.20
	S2-PM-R-L	2.74	1.46	1.88
	S2-PM-L-L	3.51	1.46	2.41
	S3-PM-R-L	2.37	1.46	1.62
	S3-PM-L-L	2.18	1.46	1.49
	S4-PM-R-L	3.34	1.46	2.28
	S4-PM-L-L	2.64	1.46	1.80
	S5-PM-R-L	2.18	1.45	1.50
	S5-PM-L-L	2.35	1.45	1.62
	S6-PM-R-L	2.64	1.45	1.83
	S6-PM-L-L	2.74	1.45	1.90
	TB-PM-T	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/17/2007 AM	S1-AM-R-M	1.11	1.36	0.82
	S1-AM-L-M	1.29	1.36	0.95
	S2-AM-R-M	1.66	1.36	1.22
	S2-AM-L-M	1.24	1.36	0.91
	S3-AM-R-M	1.22	1.36	0.90
	S3-AM-L-M	0.89	1.29	0.69
	S4-AM-R-M	0.87	1.37	0.63
	S4-AM-L-M	0.84	1.37	0.61
	S5-AM-R-M	0.92	1.36	0.67
	S5-AM-L-M	0.79	1.36	0.58
	S6-AM-L-M	1.24	1.43	0.87
	S6-AM-L-M	1.14	1.36	0.84
	TB-AM-R	ND	…	…
10/17/2007 PM	S1-PM-R-M	1.35	1.52	0.88
	S1-PM-L-M	1.10	1.38	0.80
	S2-PM-R-M	1.26	1.52	0.83
	S2-PM-L-M	1.23	1.45	0.85
	S3-PM-R-M	1.50	1.45	1.04
	S3-PM-L-M	1.36	1.30	1.04
	S4-PM-R-M	1.76	1.45	1.22
	S4-PM-L-M	1.74	1.38	1.26
	S5-PM-R-M	1.10	1.45	0.76
	S5-PM-L-M	1.11	1.45	0.77
	S6-PM-R-M	1.30	1.52	0.85
	S6-PM-L-M	1.31	1.45	0.90
	TB-PM-T	ND	…	…
10/19/2007 AM	S1-AM-R-N	1.19	1.42	0.84
	S1-AM-L-N	1.30	1.42	0.92
	S2-AM-R-N	1.20	1.43	0.84
	S2-AM-L-N	1.21	1.43	0.85
	S3-AM-R-N	1.17	1.42	0.82
	S3-AM-L-N	1.21	1.35	0.90
	S4-AM-R-N	1.23	1.42	0.87
	S4-AM-L-N	1.21	1.42	0.85
	S5-AM-R-N	1.25	1.35	0.93
	S5-AM-L-N	1.15	1.42	0.81
	S6-AM-L-N	0.87	1.42	0.61
	TB-AM-N	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/19/2007 PM	S1-PM-R-N	0.56	1.39	0.40
	S1-PM-L-N	0.44	1.39	0.31
	S2-PM-R-N	0.40	1.38	0.29
	S2-PM-L-N	0.44	1.38	0.32
	S3-PM-R-N	0.31	1.39	0.22
	S3-PM-L-N	0.39	1.25	0.31
	S4-PM-R-N	0.43	1.39	0.31
	S4-PM-L-N	0.34	1.39	0.24
	S5-PM-R-N	0.21	1.32	<LOQ
	S5-PM-L-N	0.20	1.39	<LOQ
	S6-PM-R-N	0.42	1.39	0.30
	S6-PM-L-N	0.38	1.39	0.27
	TB-PM-T	ND	…	…
10/20/2007 PM	S1-1020-R	0.70	1.44	0.49
	S1-1020-L	0.74	1.44	0.51
	S2-1020-R	0.73	1.43	0.51
	S2-1020-L	0.76	1.43	0.53
	S3-1020-R	0.72	1.44	0.50
	S3-1020-L	0.75	1.44	0.52
	S5-1020-R	0.60	1.44	0.41
	S5-1020-L	0.58	1.30	0.45
	S6-1020-R	0.74	1.46	0.51
	S6-1020-L	0.72	1.46	0.50
	TB-PM-T	ND	…	…
10/21/2007 PM	S1-1021-R	0.68	1.46	0.47
	S1-1021-L	0.81	1.39	0.58
	S2-1021-R	1.31	1.39	0.94
	S2-1021-L	1.14	1.39	0.82
	S3-1021-R	0.92	1.38	0.67
	S3-1021-L	0.19	1.31	<LOQ
	S5-1021-R	0.51	1.39	0.37
	S5-1021-L	0.48	1.39	0.34
	S6-1021-R	0.73	1.45	0.50
	S6-1021-L	0.65	1.38	0.47
	TB-PM-T	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})
<LOQ-Limit of Quantitation (i.e. <0.17 µg m^{-3}

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/22/2007 AM	S1-0-R-O	ND	0.50	ND
	S1-0-L-O	0.09	0.45	0.20
	S2-0-R-O	0.08	0.47	0.18
	S2-0-L-O	0.13	0.45	0.30
	S3-0-R-O	0.03	0.44	<LOQ
	S3-0-L-O	ND	0.40	<LOQ
	S4-0-R-O	0.05	0.44	<LOQ
	S4-0-L-O	0.07	0.44	<LOQ
	S5-0-R-O	0.12	0.44	0.27
	S5-0-L-O	0.03	0.44	<LOQ
	S6-0-R-O	0.11	0.47	0.24
	S6-0-L-O	0.06	0.45	<LOQ
	TB-0-O	ND	…	…
10/22/2007 AM	S1-4-R-O	0.64	0.51	1.26
	S1-4-L-O	0.86	0.56	1.54
	S2-4-R-O	0.62	0.51	1.22
	S2-4-L-O	0.65	0.56	1.15
	S3-4-R-O	0.57	0.48	1.20
	S3-4-L-O	0.75	0.53	1.41
	S4-4-R-O	0.38	0.53	0.72
	S4-4-L-O	0.38	0.53	0.72
	S5-4-R-O	0.43	0.50	0.85
	S5-4-L-O	0.32	0.50	0.64
	S6-4-R-O	0.54	0.51	1.06
	S6-4-L-O	0.51	0.51	1.00
	TB-4-O	ND	…	…
10/22/2007 PM	S1-8-R-O	0.32	0.42	0.76
	S1-8-L-O	0.41	0.46	0.89
	S2-8-R-O	0.50	0.42	1.20
	S2-8-L-O	0.58	0.46	1.25
	S3-8-R-O	0.84	0.37	2.28
	S3-8-L-O	0.96	0.41	2.35
	S4-8-R-O	0.86	0.40	2.16
	S4-8-L-O	1.06	0.40	2.65
	S5-8-R-O	0.16	0.36	0.44
	S5-8-L-O	0.27	0.36	0.75
	S6-8-R-O	0.14	0.41	0.34
	S6-8-L-O	0.14	0.41	0.33
	TB-8-O	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})
<LOQ-Limit of Quantitation (i.e. <0.17 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/22/2007 PM	S1-12-R-O	4.76	0.52	9.15
	S1-12-L-O	5.94	0.55	10.88
	S2-12-R-O	7.21	0.52	13.82
	S2-12-L-O	6.69	0.55	12.21
	S3-12-R-O	10.00	0.50	20.16
	S3-12-L-O	11.50	0.52	22.03
	S4-12-R-O	17.14	0.53	32.34
	S4-12-L-O	17.93	0.53	33.83
	S5-12-R-O	6.00	0.51	11.88
	S5-12-L-O	5.67	0.51	11.23
	S6-12-R-O	7.73	0.54	14.42
	S6-12-L-O	8.20	0.51	16.11
	TB-12-O	ND	…	…
10/22/2007 PM	S1-16-R-O	17.66	0.47	37.57
	S1-16-L-O	19.61	0.47	41.71
	S2-16-R-O	23.39	0.47	49.56
	S2-16-L-O	21.00	0.47	44.48
	S3-16-R-O	28.59	0.48	59.80
	S3-16-L-O	32.07	0.48	67.08
	S4-16-R-O	32.61	0.49	66.56
	S4-16-L-O	33.87	0.49	69.13
	S5-16-R-O	34.26	0.48	70.99
	S5-16-L-O	35.83	0.51	70.53
	S6-16-R-O	23.33	0.50	46.47
	S6-16-L-O	20.16	0.48	42.28
	TB-16-O	ND	…	…
10/23/2007 AM	S1-20-R-O	39.25	0.45	87.23
	S1-20-L-O	44.60	0.47	94.39
	S2-20-R-O	42.63	0.42	100.62
	S2-20-L-O	44.99	0.45	100.87
	S3-20-R-O	53.31	0.44	121.15
	S3-20-L-O	52.59	0.46	113.84
	S4-20-R-O	44.32	0.43	103.07
	S4-20-L-O	48.43	0.43	112.64
	S5-20-R-O	40.36	0.41	98.45
	S5-20-L-O	35.79	0.39	91.90
	S6-20-R-O	38.37	0.41	93.12
	S6-20-L-O	33.22	0.39	84.86
	TB-20-O	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/24/2007 AM	S1-0-R-P	14.38	0.55	26.15
	S1-0-L-P	13.07	0.55	23.77
	S2-0-R-P	11.66	0.55	21.20
	S2-0-L-P	12.43	0.55	22.60
	S3-0-R-P	13.35	0.55	24.27
	S3-0-L-P	13.09	0.55	23.81
	S4-0-R-P	11.57	0.55	21.04
	S4-0-L-P	12.37	0.55	22.49
	S5-0-R-P	10.83	0.51	21.11
	S5-0-L-P	11.92	0.54	22.07
	S6-0-R-P	9.27	0.54	17.17
	S6-0-L-P	9.01	0.54	16.69
	TB-0-P	ND	…	…
10/24/2007 AM	S1-4-R-P	0.96	0.36	2.67
	S1-4-L-P	0.96	0.36	2.67
	S2-4-R-P	0.92	0.36	2.57
	S2-4-L-P	0.95	0.36	2.63
	S3-4-R-P	0.80	0.35	2.30
	S3-4-L-P	0.95	0.35	2.70
	S4-4-R-P	0.62	0.36	1.73
	S4-4-L-P	0.65	0.36	1.81
	S5-4-R-P	0.40	0.36	1.11
	S5-4-L-P	0.34	0.36	0.93
	S6-4-R-P	0.62	0.36	1.72
	S6-4-L-P	0.56	0.36	1.56
	TB-4-P	ND	…	…
10/24/2007 PM	S1-8-R-P	0.28	0.51	0.54
	S1-8-L-P	0.25	0.51	0.48
	S2-8-R-P	0.28	0.51	0.54
	S2-8-L-P	0.35	0.51	0.68
	S3-8-R-P	0.29	0.51	0.56
	S3-8-L-P	0.33	0.51	0.64
	S4-8-R-P	0.22	0.51	0.44
	S4-8-L-P	0.24	0.51	0.46
	S5-8-R-P	0.22	0.51	0.42
	S5-8-L-P	0.22	0.51	0.43
	S6-8-R-P	0.22	0.51	0.43
	S6-8-L-P	0.23	0.51	0.44
	TB-8-P	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})
<LOQ-Limit of Quantitation (i.e. <0.17 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/24/2007 PM	S1-12-R-P	0.51	0.49	1.04
	S1-12-L-P	0.55	0.49	1.10
	S2-12-R-P	0.12	0.50	0.25
	S2-12-L-P	0.13	0.50	0.27
	S3-12-R-P	0.11	0.50	0.23
	S3-12-L-P	0.11	0.50	0.23
	S4-12-R-P	0.11	0.50	0.22
	S4-12-L-P	0.10	0.50	0.20
	S5-12-R-P	0.60	0.47	1.27
	S5-12-L-P	0.64	0.50	1.28
	S6-12-R-P	1.22	0.50	2.45
	S6-12-L-P	1.09	0.50	2.19
	TB-12-P	ND	…	…
10/24/2007 PM	S1-16-R-P	1.87	0.48	3.93
	S1-16-L-P	1.84	0.48	3.88
	S2-16-R-P	1.83	0.48	3.78
	S2-16-L-P	1.91	0.48	3.95
	S3-16-R-P	1.60	0.48	3.30
	S3-16-L-P	1.68	0.48	3.47
	S4-16-R-P	1.44	0.49	2.97
	S4-16-L-P	1.49	0.49	3.07
	S5-16-R-P	0.99	0.43	2.28
	S5-16-L-P	1.01	0.48	2.10
	S6-16-R-P	0.99	0.49	2.04
	S6-16-L-P	0.99	0.49	2.04
	TB-16-P	ND	…	…
10/25/2007 AM	S1-20-R-P	ND	0.43	<LOQ
	S1-20-L-P	ND	0.43	<LOQ
	S2-20-R-P	ND	0.42	<LOQ
	S2-20-L-P	0.04	0.42	<LOQ
	S3-20-R-P	ND	0.43	<LOQ
	S3-20-L-P	ND	0.43	<LOQ
	S4-20-R-P	ND	0.43	<LOQ
	S4-20-L-P	ND	0.43	<LOQ
	S5-20-R-P	ND	0.43	<LOQ
	S5-20-L-P	0.05	0.41	<LOQ
	S6-20-R-P	ND	0.43	<LOQ
	S6-20-L-P	ND	0.43	<LOQ
	TB-20-P	ND	…	…

ND - not detectable (i.e, < 0.03 µg m^{-3}) <LOQ-Limit of Quantitation (i.e. <0.17 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/26/2007 AM	S1-0-R-Q	0.93	0.56	1.66
	S1-0-L-Q	0.99	0.56	1.76
	S2-0-R-Q	0.66	0.56	1.18
	S2-0-L-Q	0.68	0.56	1.21
	S3-0-R-Q	0.84	0.57	1.47
	S3-0-L-Q	0.62	0.57	1.08
	S4-0-R-Q	0.58	0.57	1.01
	S4-0-L-Q	0.61	0.57	1.07
	S5-0-R-Q	0.52	0.56	0.93
	S5-0-L-Q	0.44	0.56	0.79
	S6-0-R-Q	0.75	0.56	1.34
	S6-0-L-Q	0.58	0.56	1.04
	TB-0-Q	ND	…	…
10/26/2007 PM	S1-4-R-Q	0.75	0.43	1.74
	S1-4-L-Q	0.76	0.43	1.76
	S2-4-R-Q	0.73	0.43	1.70
	S2-4-L-Q	0.79	0.43	1.85
	S3-4-R-Q	0.74	0.43	1.73
	S3-4-L-Q	0.73	0.43	1.71
	S4-4-R-Q	0.69	0.42	1.65
	S4-4-L-Q	0.69	0.42	1.65
	S5-4-R-Q	0.70	0.42	1.66
	S5-4-L-Q	0.62	0.42	1.47
	S6-4-R-Q	0.75	0.42	1.79
	S6-4-L-Q	0.70	0.42	1.67
	TB-4-Q	ND	…	…
10/26/2007 PM	S1-8-R-Q	0.28	0.40	0.70
	S1-8-L-Q	0.26	0.40	0.65
	S2-8-R-Q	0.19	0.40	0.47
	S2-8-L-Q	0.29	0.40	0.73
	S3-8-R-Q	0.30	0.40	0.76
	S3-8-L-Q	0.20	0.40	0.51
	S4-8-R-Q	0.34	0.40	0.85
	S4-8-L-Q	0.46	0.40	1.16
	S5-8-R-Q	0.24	0.40	0.60
	S5-8-L-Q	0.28	0.40	0.69
	S6-8-R-Q	0.20	0.40	0.49
	S6-8-L-Q	0.13	0.40	0.33
	TB-8-Q	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})
<LOQ-Limit of Quantitation (i.e. <0.17 µg m^{-3}

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/26/2007 PM	S1-12-R-Q	1.72	0.55	3.10
	S1-12-L-Q	1.76	0.55	3.17
	S2-12-R-Q	1.70	0.56	3.04
	S2-12-L-Q	1.62	0.56	2.90
	S3-12-R-Q	1.47	0.56	2.64
	S3-12-L-Q	2.06	0.56	3.70
	S4-12-R-Q	1.80	0.57	3.18
	S4-12-L-Q	2.01	0.57	3.54
	S5-12-R-Q	1.26	0.57	2.22
	S5-12-L-Q	1.44	0.57	2.55
	S6-12-R-Q	1.51	0.57	2.66
	S6-12-L-Q	1.35	0.57	2.39
	TB-12-Q	ND	…	…
10/26/2007 PM	S1-16-R-Q	1.00	0.48	2.11
	S1-16-L-Q	0.89	0.48	1.88
	S2-16-R-Q	0.91	0.48	1.89
	S2-16-L-Q	0.99	0.48	2.06
	S3-16-R-Q	0.98	0.49	2.03
	S3-16-L-Q	0.99	0.49	2.03
	S4-16-R-Q	0.85	0.48	1.75
	S4-16-L-Q	0.96	0.48	1.99
	S5-16-R-Q	0.89	0.48	1.83
	S5-16-L-Q	0.99	0.48	2.04
	S6-16-R-Q	0.76	0.48	1.58
	S6-16-L-Q	0.67	0.48	1.38
	TB-16-Q	ND	…	…
10/27/2007 AM	S1-20-R-Q	1.72	0.43	4.00
	S1-20-L-Q	1.56	0.43	3.63
	S2-20-R-Q	1.51	0.42	3.59
	S2-20-L-Q	1.63	0.42	3.88
	S3-20-R-Q	1.40	0.41	3.43
	S3-20-L-Q	1.47	0.41	3.60
	S4-20-R-Q	1.26	0.41	3.08
	S4-20-L-Q	1.52	0.41	3.71
	S5-20-R-Q	1.78	0.41	4.33
	S5-20-L-Q	1.63	0.41	3.97
	S6-20-R-Q	1.45	0.41	3.54
	S6-20-L-Q	1.29	0.41	3.15
	TB-20-Q	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/29/2007 AM	S1-AM-R-R	ND	1.40	ND
	S1-AM-L-R	4.21	1.40	3.01
	S2-AM-R-R	3.62	1.40	2.59
	S2-AM-L-R	4.18	1.40	2.98
	S3-AM-R-R	4.04	1.40	2.88
	S3-AM-L-R	4.60	1.40	3.28
	S4-AM-R-R	NA	…	…
	S4-AM-L-R	5.31	1.39	3.82
	S5-AM-R-R	5.25	1.38	3.80
	S5-AM-L-R	5.03	1.38	3.65
	S6-AM-R-R	4.36	1.39	3.13
	S6-AM-L-R	4.26	1.39	3.07
	TB-AM-R	ND	…	…
10/29/2007PM	S1-PM-R-R	8.30	1.43	5.81
	S1-PM-L-R	11.06	1.43	7.73
	S2-PM-R-R	8.41	1.43	5.88
	S2-PM-L-R	9.07	1.43	6.34
	S3-PM-R-R	7.25	1.43	5.07
	S3-PM-L-R	9.36	1.43	6.54
	S4-PM-R-R	6.90	1.43	4.82
	S4-PM-L-R	8.05	1.43	5.63
	S5-PM-R-R	6.16	1.43	4.31
	S5-PM-L-R	6.06	1.43	4.24
	S6-PM-R-R	6.78	1.43	4.74
	S6-PM-L-R	6.72	1.43	4.70
	TB-PM-R	ND	…	…
10/31/2007AM	S1-AM-R-S	7.01	1.32	5.31
	S1-AM-L-S	7.05	1.32	5.34
	S2-AM-R-S	14.54	1.22	11.92
	S2-AM-L-S	16.89	1.22	13.84
	S3-AM-R-S	6.67	1.21	5.51
	S3-AM-L-S	9.45	1.21	7.81
	S4-AM-R-S	1.30	0.68	1.92
	S4-AM-L-S	1.97	0.68	2.90
	S5-AM-R-S	3.83	1.21	3.16
	S5-AM-L-S	3.95	1.21	3.27
	S6-AM-R-S	4.99	1.21	4.12
	S6-AM-L-S	3.92	1.21	3.24
	TB-AM-S	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})
<LOQ-Limit of Quantitation (i.e. <0.17 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
10/31/2007 PM	S1-PM-R-S	17.70	1.57	11.28
	S1-PM-L-S	21.67	1.57	13.80
	S2-PM-R-S	42.13	1.67	25.23
	S2-PM-L-S	33.71	1.67	20.18
	S3-PM-R-S	18.67	1.68	11.11
	S3-PM-L-S	21.47	1.68	12.78
	S4-PM-R-S	6.59	1.67	3.95
	S4-PM-L-S	9.58	1.67	5.74
	S5-PM-R-S	9.22	1.67	5.52
	S5-PM-L-S	10.64	1.67	6.37
	S6-PM-R-S	19.29	1.67	11.55
	S6-PM-L-S	20.12	1.67	12.05
	TB-PM-S	ND	…	…
11/2/2007 AM	S1-AM-R-T	4.17	1.33	3.14
	S1-AM-L-T	4.45	1.33	3.34
	S2-AM-R-T	5.69	1.32	4.31
	S2-AM-L-T	6.22	1.32	4.71
	S3-AM-R-T	0.58	1.32	0.44
	S3-AM-L-T	0.62	1.32	0.47
	S4-AM-R-T	1.27	0.84	1.52
	S4-AM-L-T	1.42	0.84	1.69
	S5-AM-R-T	1.28	1.31	0.97
	S5-AM-L-T	1.36	1.31	1.04
	S6-AM-R-T	1.68	1.31	1.28
	S6-AM-L-T	1.40	1.31	1.07
	TB-AM-T	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})

Table B-4 (continued)
Air Sampler MITC Results

Date:	Sample ID	Total MITC (µg)	Air Sampled (m3)	Air Concentration (µg/ m3)
11/2/2007 PM	S1-PM-R-T	15.58	1.47	10.60
	S1-PM-L-T	16.69	1.47	11.36
	S2-PM-R-T	39.50	1.47	26.87
	S2-PM-L-T	23.72	1.47	16.13
	S3-PM-R-T	4.71	1.47	3.21
	S3-PM-L-T	5.48	1.47	3.73
	S4-PM-R-T	4.32	1.48	2.92
	S4-PM-L-T	5.47	1.48	3.70
	S5-PM-R-T	5.31	1.48	3.59
	S5-PM-L-T	4.11	1.48	2.78
	S6-PM-R-T	6.44	1.48	4.35
	S6-PM-L-T	5.81	1.48	3.93
	TB-PM-T	ND	…	…

NA – not analyzed
ND - not detectable (i.e, < 0.03 µg m^{-3})

IV: ANALYTICAL SUMMARY

A. Introduction

An analytical method was developed and validated for determining methyl isothiocyanate (MITC) from charcoal sampling tubes. This method was adapted from California Department of Pesticide Regulation "*Air Monitoring for Methylisothiocyanate During a Sprinkler Application of Metam-Sodium"* Report EH 94-02, 1994. The procedure involved extraction of the charcoal media using a 1:4 mixture of carbon disulfide:ethyl acetate (i.e., 20% carbon disulfide in ethyl acetate) followed by sonication, and filtration through a 0.45µm Teflon membrane. The sample extract was then analyzed by gas chromatography using thermionic specific detection (TSD). The method limit of quantitation (LOQ) was estimated to be 0.17 µg m^{-3} (ca. 0.06 ppb) with a detection limit of 0.03 µg m^{-3} (ca. 0.01 ppb) based on a 12 hour air sample at 2 L/min. See Appendix D for the analytical method.

B. Materials and Methods

1. Equipment

The following equipment and/or its equivalent were used in this study:

Sartorius Micro M5P analytical balance
Sartorius LC3200D top-loading balance
Standard laboratory glassware and equipment
Ultrasonic bath (VWR brand)
Varian Star Chromatography Workstation
Varian Star 3400cx Gas Chromatograph
Varian 8200cx Auto Sampler

2. Reagents

The following reagents and/or equivalents were used in this study. All solvents were pesticide-analysis grade or better.

Analytical standards (Chem Service, Inc.)
Carbon disulfide
Ethyl acetate
0.45 µm Teflon® membrane filter (Whatman®)
Methanol

3. Standards

Standards were prepared to bracket the range of MITC concnetrationss expected in the charcoal samples. The following test substances, standards, and standard dilutions were used for this study:

Test substance

Compound	**Substance No.**	**Purity**	**Source**
Methyl isothiocyanate	1316	99.5%	Chem Service

Stock Solution

Compound	**Substance No.**	**Conc.**	**Solvent**
Methyl isothiocyanate	13166	10 mg/mL	methanol
Methyl isothiocyanate	131661	0.1 mg/mL	methanol
Methyl isothiocyanate	131662	1.0 mg/mL	methanol

Dilution of Stock Solution

Compound	**Substance No.**	**Conc.**	**Solvent**
Methyl isothiocyanate	131663	100 µg/mL	20% CS_2/ethyl acetate
Methyl isothiocyanate	131664	20 µg/mL	20% CS_2/ethyl acetate
Methyl isothiocyanate	131665	10 µg/mL	20% CS_2/ethyl acetate
Methyl isothiocyanate	131666	5 µg/mL	20% CS_2/ethyl acetate
Methyl isothiocyanate	131667	2 µg/mL	20% CS_2/ethyl acetate
Methyl isothiocyanate	131668	1 µg/mL	20% CS_2/ethyl acetate
Methyl isothiocyanate	131669	0.5 µg/mL	20% CS_2/ethyl acetate
Methyl isothiocyanate	13166-10	0.1 µg/mL	20% CS_2/ethyl acetate

Fortification Solutions

Compound	**Substance No.**	**Conc.**	**Solvent**
Methyl isothiocyanate	13166	10 mg/mL	methanol
Methyl isothiocyanate	131661	0.1 mg/mL	methanol
Methyl isothiocyanate	131662	1.0 mg/mL	methanol

All standard solutions were stored in the freezer at ca. -15°C (I.D. Prancer). Dilutions are recorded in the FEQL analytical laboratory standards logbook.

4. Instrumentation

A Varian Star 3400CX gas chromatograph using thermionic specific detection (TSD) with 8200CX autosampler was used for MITC detection and quantification. Integration of chromatographic data was performed using Varian Star Chromatography Workstation software.

Column: EC-WAX, 15m x 0.53mm, 1.2 µm film thickness

Carrier gas: Ultrapure helium, column flow rate ca 3.4-mL/min.

Temperatures: Detector: 260°C
Injector port: 55 to 225°C (225°C/min), hold for 5 min.
Oven program: Initial: 55°C, hold for 0.09min.
Ramp 10°C/min to 90°C, hold for 5 min.

MITC Retention time: 6.48 min (+/-0.05 min)

Injection volume: 2 µL

The hydrogen, air, and make-up gas flows were set at 3-4 mL/min, 100-120 mL/min, and 25-30 mL/min, respectively over the course of the study. The TSD bead current was set at 3.0 A.

5. Quantitation

The quantitation of MITC was performed by electronic peak area measurement. MITC concentrations were calculated by linear regression from a minimum of four external standards in the concentration range of the matrix-samples. For quality control during the GC operation, a laboratory matrix control and matrix fortified sample accompanied each analytical set. All samples were bracketed with external calibration standards. For each analytical set, at least four linearity standards were used in the calculation of the linear regression curve using a spreadsheet program (Microsoft Excel®). The estimated concentration of MITC in the sample extract was corrected for dilution by multiplying by the final volume of extract. The MITC values (in µg) were calculated according to the following equations.

Eq 1: Total MITC (µg) = (x µg/mL detected concentration) (Final volume of extract)

For example, sample set 24 included the preparation of air sample S2-PM-R-S (sample date 10/31/07). The sample was processed for analysis to a final volume of 5 mL. The MITC linear regression line of best fit calculated from calibration standards ($R^2 = 0.999$) of this set was:

Y (area counts) = 49334 X(detected concentration in µg/mL) + 3052.96

The MITC-peak area count for this sample was 418702. Therefore, the concentration (in µg/mL) was:

$$X = \frac{(418702 - 3052.96)}{49334} = 8.425 \text{ µg/mL}$$

The total concentration is then calculated according to Eq. 1:

8.425 µg/mL x 5 mL = 42.13 µg MITC

Once the total micrograms per sample was obtained, the concentration per cubic meter was calculated by equation 2.

Eq 2: $\mu g/m^3$ = (x µg total MITC per sample)/ (total m^3 of air sampled)

From the example above:

$\mu g/m^3$ = 42.13 µg MITC / 1.67 m^3 = 25.23$\mu g/m^3$ MITC

To assess overall analysis precision and percent recovery a control sample was fortified with a known amount of MITC prior to extraction. For each analytical set, percent recovery for the fortified sample was calculated using peak areas according to the Equation 3.

Eq.3: % Recovery = $\frac{\text{(Fortified Peak – Control Peak)Calculated Concnetration}}{\text{Fortification Amount}}$ x 100

Example: The cartridge 1207-2g-FS24, in sample set 24 (S-PM), was fortified with 10 µg of MITC. The sample extract was prepared to a final volume of 5 mL for residue determination.

The linear regression line of best fit for MITC calculated from the calibration standards (R^2=0.999) of this set was:

Y (area counts) = 49334 X(detected concentration in µg/mL) + 3052.96

The MITC peak area count for this fortified sample was 85954 at a 5X dilution. The fortified sample concentration was:

(85954) = 49334X - 3052.96

$X = \frac{85954 - 3052.96}{49334}$ = 1.680 µg/mL MITC

The total concentration is then calculated according to *Eq. 1*:

1.680 µg/mL x 5 mL = 8.40 µg MITC

There was no detected MITC in the control sample in this set. The fortified sample 1207-2g-FS24 was spiked at 10 µg MITC. From *Eq.3*, the percent recovery for this fortified sample was:

Percent Recovery = $\frac{8.40\ \mu g}{10.0\ \mu g}$ x 100 = 84.0%

6. Confirmatory Techniques

Analytical standards were used to detect the presence of MITC in air samples by retention time. In the event that the GC did not confirm the presence of MITC, values were reported as "Not Detected" (ND). When MITC was detected but the values per air volume sampled were lower than the calculated Limit of Quantitation, concentrations were reported as <LOQ.

7. Time Required For Analysis

The time required for an experienced person to work up a set of samples (12 samples plus QC) for analysis was approximately 2.5 hours. The time required for the GC analysis of a single sample was approximately 9 minutes.

C. Information/Raw Data

1. Storage and Shipping

The charcoal air samples were transferred on the day of collection to the Food & Environmental Quality Laboratory (FEQL), Washington State University, 2710 University Drive, Richland, WA where they were logged and placed in frozen storage (-80^{o}C) until analysis.

2. Analytical Method Validation

Before performing MITC determinations, a method validation set was performed to demonstrate MITC extraction efficacy (in triplicate) from the 2 gram charcoal cartridges. The average recoveries of spiked cartridges ranging from 0.5 µg to 25 µg MITC are presented in Table B-1. Table B-2 provides results of quality control samples done during each of the sample workups.

3. Storage Stability

A -80^{o}C storage stability evaluation for MITC on charcoal-filled glass cartridges was completed and reported for study FEQL-NG-0605, covering a storage interval of 85 days. No samples were kept in frozen storage for more than 85 days.

4. Field Fortifications

Field fortifications were performed routinely over the course of the monitoring study. Each field fortification was prepared by injecting 10 µL of 1 mg/mL solution (i.e., 10 µg MITC) or 10 µL of 10 mg/mL solution (i.e., 100 µg MITC) into the cartridge before placement in the field. The field fortification spike was periodically located at WSU simultaneously during the ca. 4-hour and 12 hour sampling intervals. Field fortification results are provided in Table B-3.

APPENDIX A: PROJECT PROTOCOL

Field and Analytical Protocol
Project No. FEQL-1207-A **Page 1 of 5**

PROJECT TITLE: **2007 MITC RESIDENTIAL COMMUNITY AIR ASSESSMENT; FRANKLIN COUNTY, WASHINGTON**

PROJECT COORDINATOR: Vincent R. Hebert, Laboratory Research Director
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PROJECT STAFF: Jason Merriman, Graduate Researcher; Jane LePage ART III

PROJECT DURATION: September 2007 through February 2008

PROJECT OBJECTIVE:

An ambient air monitoring program will be conducted in Franklin County, WA over a ca. six week time frame starting mid-September through late October 2007. This monitoring study will aid in establishing fumigant emission information in this agriculturally important region that is now facing expansive urban development. This study specifically assesses metam sodium's biologically active gaseous ingredient methyl isothiocyanate (MITC) in ambient air near residential and commercial structures. An earlier 2005 air monitoring study in this region showed that MITC air concentrations were uniformly distributed and approached regulatory acute levels of concern. It will be important to corroborate this earlier emission study and establish baseline residential air exposure information in 2007 and 2008 for evaluating anticipated benefits of future proposed emission-reducing best management practice (BMP) technologies. For five weeks, sampling will be performed three times weekly for 24 hour periods with charcoal adsorbent cartridges replaced at 12-hour intervals. During one week, air monitoring will be performed three times but at replacement intervals of 4 hours instead of 12 hours per day. The greater intensity of air sampling can provide a more precise indication if MITC ambient air concentrations are actually approaching or exceeding an acute regulatory level of concern, especially during nighttime calm wind conditions.

APPROACH

Weeks 1 – 5: 12-hour interval sampling

Siting: Air monitors will be sited at a minimum of six residential area locations in Franklin County. Outdoor sampling masts will consist of a cross-arm at ca. 1½ - 2 m height that can hold two collocated charcoal sampling tubes (each tube contains 2 g coconut charcoal prepared by SKC West, Fullerton, CA) at opposite ends of the cross-arm with two AC powered air sampling pump (SKC AirCheck series; Figure 1). The outdoor pump flows per cartridge will be set at 2 to 3 L/min, but actual flow will be measured at the start and end of each sampling period using a calibrated flow meter. Field fortifications will be performed nearby at the WSU-Tri

Cites campus to routinely to monitor trapping efficiency over the September through October field fumigation season.

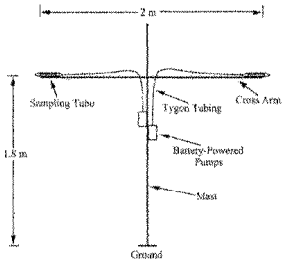

Figure 1: Sample mast with coconut charcoal cartridges

Sampling Frequency and Duration: The outdoor sampling masts samplers will be operated three days per week starting mid-September through late October, 2007. To avoid breakthrough, 2-gram cartridges will be replaced at 12-hour intervals during the day of sampling. Anticipated number of samples: 6 locations x 2 replicates x 2 intervals/day x 15 sample interval days = 360 events plus ca. 12 trip blanks and 3 to 6 field fortification samples and corresponding controls (performed at WSU-Tri Cities).

Sample Handling and Quality Control: Before field sampling, labels uniquely identifying the individual sample will be prepared and attached to the sampling cartridges. At the end of each sampling period, the sampling media will be capped and placed in cold storage then transported on the day of the sampling event with chain of custody documentation to the Food and Environmental Quality Laboratory. Trip blanks (i.e., cartridges with no MITC), will routinely accompany sample shipments

Sample Coding: The samples acquired from the field will be given a sample code that will be used to track each sample as it gathered. This code will be constructed so that each site, day, collocation, time of day and trip blanks will have unique alphanumeric values that will be traceable. The coding will be as follows:

Site Name**	Code	AM	PM	Collocation	Day*
Station 1	S1	AM	PM	R/L	A through O
Station 2	S2	AM	PM	R/L	A through O
Station 3	S3	AM	PM	R/L	A through O
Station 4	S4	AM	PM	R/L	A though O
Station 5	S5	AM	PM	R/L	A through O
Station 6	S6	AM	PM	R/L	A through O

* The planned sampling schedule is 3 times per week for 5 weeks (i.e, 15 sampling days, designated A (day 1, week 1) through O (day 3, week 5).

** Station locations will be kept confidential.

The 24 treatment blanks that will accompany each day and evening shipment over the 5-week period will receive a TB designation. A charcoal tube labeled **S3-PM-L-D** would uniquely identify the sample taken at station 3 during the 12-hour evening sampling period from the left position on the sampling mast. "D" would indicate that this sample was taken during the forth sampling interval. A charcoal tube labeled **TB-PM-F** would indicate that the sample is a trip blank stored with samples taken in the evening on the 6th sampling interval date. A sample labeled **S7-PM-L-D-F** would indicate a field fortification (F) at the WSU-TC campus (Station 7) taken in the evening at the left position (L) on day D.

Week 6; 4-hour interval sampling

Siting: Residential sampling locations will be identical. However, 1-gram SKC charcoal cartridges will be employed to collect MITC from the ambient air. Flow rates will be adjusted similarly from 2 to 3 L/min and will be measured at the start and end of each sampling period using a calibrated flow meter.

Sampling Frequency and Duration: The outdoor sampling masts samplers will be operated three days per week. The 1-gram cartridges will be replaced at 4-hour intervals during the day of sampling. Number of samples: 6 locations x 2 replicates x 6 intervals/day x 3 sample interval days = 216 events plus 3 trip blanks and two 4 hr field fortification samples with respective controls (performed at WSU-Tri Cities).

Sample Handling and Quality Control: Procedures will be followed as outline above.

Sample Coding: The coding for the 4-hour week-six samples will be as follows:

Site Name**	Code	Interval	Collocation	Day*
Station 1	S1	0, 4, 8, 12, 16, 20	R/L	P through R
Station 2	S2	0, 4, 8, 12, 16, 20	R/L	P through R
Station 3	S3	0, 4, 8, 12, 16, 20	R/L	P through R
Station 4	S4	0, 4, 8, 12, 16, 20	R/L	P though R
Station 5	S5	0, 4, 8, 12, 16, 20	R/L	P through R
Station 6	S6	0, 4, 8, 12, 16, 20	R/L	P through R

A charcoal tube labeled **S5-8-R-Q** would uniquely identify the sample taken at station 5 after the third 4-hour evening sampling period from the right position on the sampling mast. "Q" would indicate that this sample was taken during the second sampling day of week 6.

Laboratory Analysis: The Food and Environmental Quality Laboratory (FEQL) is a regulatory science 40CFR Part 160 Good Laboratory Practices (GLP) facility under the direction of Dr. Hebert. Extraction and analytical methods will be developed and validated in advance of the starting date of the field study. The Lab will employ a previously validated solvent elution method that uses an 80:20 v/v mixture of ethyl acetate/carbon disulfide for extracting MITC from charcoal air sampling tubes. MITC in the solvent extract will be determined using gas chromatography with nitrogen-phosphorus thermionic specific detection. The analytical method will be considered validated if recoveries from fortified field samples prepared at various spiking concentrations (in triplicate) range from 70 to 120%. All steps will be taken to insure sample

integrity on an analytical set-by-set basis (i.e., controls, fortifications, calibrations and linearities). The generated data will be expressed in units of mass per volume (i.e., $\mu g\ m^{-3}$) taken over the sampling interval for assessing ambient air residue concentrations.

Storage Stability Analysis: A storage stability study will not be required. A previous storage stability study completed in 2006 (FEQL –NG-0605) showed that MITC is stable for up to 85 days at -80°C.

Statistical Method: Criteria for acceptance of standard curve(s) or other statistical methods shall be determined by the Project Coordinator and documented in the raw data.

Field Documentation And Record Keeping: All operations, data and observations appropriate to this study should be recorded directly and promptly into the FIELD DATA BOOK. General instructions for completion of the field data book can be found on page 2 of this book. This Data Book was designed for collecting field information and serves as an authentic record of fieldwork. It has eight Parts or Chapters containing the following information:

PART	SUBJECT
1	Personnel Log
2	Communications/ Chronological Log and Notes
3	Trial Site Information/Placement of Air Samplers
4	Air Sampler Calibration/Field Testing Data Sheets
5	Air Sampler Shipping Information
6	Meteorological Records
7	Additional Information

Laboratory Documentation and Record Keeping: All operations, data and observations shall be recorded in the analyst' and log books, which must be signed and dated on date of entry. At a minimum, collect and maintain the following raw data:

- Analytical standard(s) receipt, use and disposition records
- Analytical standard(s) storage conditions
- Analytical standard(s) dilution calculations and preparation records
- Sample storage conditions and locations
- Calculation work sheets
- All chromatograms, including those which are not reported
- Chain of custody records
- Name of personnel conducting specific research functions
- Sample analysis worksheets
- Concurrent recovery fortification records

A study file shall be developed and maintained at the FEQL in conjunction with the analysis. It will contain a copy of the protocol, all pertinent raw data, documentation, records, correspondence, and the final analytical summary report. In addition, records of equipment maintenance and calibrations will be kept and periodically archived.

Field and Analytical Protocol
Project No. FEQL-1207-A **Page 5 of 5**

Laboratory Research Report: The analytical summary report sent to the Sponsor shall contain, but not be limited to:

- Applicable method validation data
- Residue levels for control and treated air and depositional samples with concurrent fortified recoveries
- Meteorological data
- Complete copy of the analytical Working Method
- Clearly presented example calculations or statistical evaluations
- Discussion of results (including purpose of method modifications, sample storage conditions, etc.) -summary data associated with calibration standards (dilution and use records, calibration curves, etc.)
- Discussion of estimated acute and sub-chronic inhalation exposure and relevant calculations

Laboratory Archives: When the final analytical summary report is completed the analytical report and all original field (Field Data Book) and analytical raw data will be retained at the FEQL Testing Laboratory. All original raw data shall be secured in the FEQL Testing Laboratory archives.

Vincent R Hebert
Project Coordinator

9-17-07
Date

APPENDIX B: SAMPLE INVENTORY

Table A-2
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
AM-A	S1-AM-R-A	9/17/07 9:00 AM	9/17/07 9:00 PM	12:00	1.44
	S1-AM-L-A	9/17/07 9:00 AM	9/17/07 9:00 PM	12:00	1.44
	S2-AM-R-A	9/17/07 9:10 AM	9/17/07 8:50 PM	11:40	1.40
	S2-AM-L-A	9/17/07 9:10 AM	9/17/07 8:50 AM	Pump Failed	
	S3-AM-R-A	9/17/07 9:20 AM	9/17/07 8:45 PM	11:25	1.37
	S3-AM-L-A	9/17/07 9:20 AM	9/17/07 10:25AM	1:05	0.13
	S4-AM-R-A	NA	NA	…	
	S4-AM-L-A	NA	NA	…	
	S5-AM-R-A	9/17/07 9:35 AM	9/17/07 9:30 PM	11:55	1.43
	S5-AM-L-A	9/17/07 9:35 AM	9/17/07 9:30 PM	Pump Failed	
	S6-AM-R-A	9/17/07 9:47 AM	9/17/07 9:15 PM	11:28	1.38
	S6-AM-L-A	9/17/07 9:47 AM	9/17/07 9:15 PM	11:28	1.38
PM-A	S1-PM-R-A	9/17/07 9:00 PM	9/18/07 8:55 AM	11:55	1.43
	S1-PM-L-A	9/17/07 9:00 PM	9/18/07 8:55 AM	11:55	1.43
	S2-PM-R-A	9/17/07 8:50 PM	9/18/07 9:00 AM	12:10	1.46
	S2-PM-L-A	9/17/07 8:50 PM	9/18/07 9:00 AM	Pump Failed	
	S3-PM-R-A	9/17/07 8:45 PM	9/18/07 9:12 AM	12:27	1.49
	S3-PM-L-A	9/17/07 8:45 PM	9/18/07 9:12 AM	Pump Failed	
	S4-PM-R-A	NA	NA	…	
	S4-PM-L-A	NA	NA	…	
	S5-PM-R-A	9/17/07 9:30 PM	9/18/07 9:25 AM	11:55	1.43
	S5-PM-L-A	9/17/07 9:30 PM	9/18/07 9:25 AM	11:55	1.43
	S6-PM-R-A	9/17/07 9:15 PM	9/18/07 9:35 AM	12:20	1.48
	S6-PM-L-A	9/17/07 9:15 PM	9/18/07 9:35 AM	12:20	1.48
AM-B	S1-AM-R-B	9/21/07 7:20 AM	9/21/07 7:55 PM	12:35	1.51
	S1-AM-L-B	9/21/07 7:20 AM	9/21/07 7:55 PM	12:35	1.51
	S2-AM-R-B	9/21/07 7:25 AM	9/21/07 7:45 PM	12:20	1.48
	S2-AM-L-B	9/21/07 7:25 AM	9/21/07 7:45 PM	12:20	1.48
	S3-AM-R-B	9/21/07 7:35 AM	9/21/07 7:10 PM	11:35	1.39
	S3-AM-L-B	9/21/07 7:35 AM	9/21/07 8:15 AM	Pump Failed	
	S4-AM-R-B	NA	NA	…	
	S4-AM-L-B	NA	NA	…	
	S5-AM-R-B	9/21/07 7:50 AM	9/21/07 7:25 PM	11:35	1.39
	S5-AM-L-B	9/21/07 7:50 AM	9/21/07 7:25 PM	11:35	1.39
	S6-AM-R-B	9/21/07 8:00 AM	9/21/07 7:35 PM	11:35	1.39
	S6-AM-L-B	9/21/07 8:00 AM	9/21/07 7:35 PM	11:35	1.39

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
PM-B	S1-PM-R-B	9/21/07 7:55 PM	9/22/07 8:20 AM	12:25	1.49
	S1-PM-L-B	9/21/07 7:55 PM	9/22/07 8:20 AM	12:25	1.49
	S2-PM-R-B	9/21/07 7:45 PM	9/22/07 8:37 AM	12:52	1.54
	S2-PM-L-B	9/21/07 7:45 PM	9/22/07 8:37 AM	12:52	1.54
	S3-PM-R-B	9/21/07 7:10 PM	9/22/07 8:50 AM	13:40	1.64
	S3-PM-L-B	9/21/07 7:10 PM	9/21/07 8:50 AM	Pump Failed	
	S4-PM-R-B	NA	NA	…	
	S4-PM-L-B	NA	NA	…	
	S5-PM-R-B	9/21/07 7:25 PM	9/22/07 9:15 AM	13:50	1.66
	S5-PM-L-B	9/21/07 7:25 PM	9/22/07 9:15 AM	13:50	1.66
	S6-PM-R-B	9/21/07 7:35 PM	9/22/07 9:25 AM	13:50	1.66
	S6-PM-L-B	9/21/07 7:35 PM	9/22/07 9:25 AM	13:50	1.66
AM-C	S1-AM-R-C	9/24/07 6:55 AM	9/24/07 7:20 PM	12:25	1.49
	S1-AM-L-C	9/24/07 6:55 AM	9/24/07 7:20 PM	12:25	1.49
	S2-AM-R-C	9/24/07 7:00 AM	9/24/07 7:15 PM	12:15	1.47
	S2-AM-L-C	9/24/07 7:00 AM	9/24/07 7:15 PM	12:15	1.47
	S3-AM-R-C	9/24/07 7:10 AM	9/24/07 7:05 PM	11:55	1.43
	S3-AM-L-C	9/24/07 7:10 AM	9/24/07 7:05 PM	11:55	1.43
	S4-AM-R-C	NA	NA	…	
	S4-AM-L-C	NA	NA	…	
	S5-AM-R-C	9/24/07 7:25 AM	9/24/07 6:45 PM	11:20	1.36
	S5-AM-L-C	9/24/07 7:25 AM	9/24/07 6:45 PM	11:20	1.36
	S6-AM-R-C	9/24/07 7:35 AM	9/24/07 6:55 PM	11:20	1.36
	S6-AM-L-C	9/24/07 7:35 AM	9/24/07 6:55 PM	11:20	1.36
PM-C	S1-PM-R-C	9/24/07 7:20 PM	9/25/07 7:00 AM	11:40	1.40
	S1-PM-L-C	9/24/07 7:20 PM	9/25/07 7:00 AM	11:40	1.40
	S2-PM-R-C	9/24/07 7:15 PM	9/25/07 7:05 AM	11:50	1.42
	S2-PM-L-C	9/24/07 7:15 PM	9/25/07 7:05 AM	11:50	1.42
	S3-PM-R-C	9/24/07 7:05 PM	9/25/07 7:10 AM	12:05	1.45
	S3-PM-L-C	9/24/07 7:05 PM	9/25/07 7:10 AM	12:05	1.45
	S4-PM-R-C	NA	NA	…	
	S4-PM-L-C	NA	NA	…	
	S5-PM-R-C	9/24/07 6:45 PM	9/25/07 7:20 AM	12:35	1.51
	S5-PM-L-C	9/24/07 6:45 PM	9/25/07 7:20 AM	12:35	1.51
	S6-PM-R-C	9/24/07 6:55 PM	9/25/07 7:40 AM	12:45	1.53
	S6-PM-L-C	9/24/07 6:55 PM	9/25/07 7:40 AM	12:45	1.53

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
AM-D	S1-AM-R-D	9/26/07 6:55 AM	9/26/07 7:00 PM	12:05	1.45
	S1-AM-L-D	9/26/07 6:55 AM	9/26/07 7:00 PM	12:05	1.45
	S2-AM-R-D	9/26/07 7:05 AM	9/26/07 7:05 PM	12:00	1.44
	S2-AM-L-D	9/26/07 7:05 AM	9/26/07 7:05 PM	12:00	1.44
	S3-AM-R-D	9/26/07 7:15 AM	9/26/07 7:15 PM	12:00	1.44
	S3-AM-L-D	9/26/07 7:15 AM	9/26/07 7:15 PM	379 min	0.76
	S4-AM-R-D	NA	NA	…	
	S4-AM-L-D	NA	NA	…	
	S5-AM-R-D	9/26/07 7:40 AM	9/26/07 7:35 PM	11:55	1.43
	S5-AM-L-D	9/26/07 7:40 AM	9/26/07 7:35 PM	11:55	1.43
	S6-AM-R-D	9/26/07 7:50 AM	9/26/07 7:30 PM	11:40	1.40
	S6-AM-L-D	9/26/07 7:50 AM	9/26/07 7:51 AM	Pump Failed	
PM-D	S1-PM-R-D	9/26/07 7:00 PM	9/27/07 7:00 AM	12:00	1.44
	S1-PM-L-D	9/26/07 7:00 PM	9/27/07 7:00 AM	12:00	1.44
	S2-PM-R-D	9/26/07 7:05 PM	9/27/07 7:05 AM	12:00	1.44
	S2-PM-L-D	9/26/07 7:05 PM	9/27/07 7:05 AM	12:00	1.44
	S3-PM-R-D	9/26/07 7:15 PM	9/27/07 7:15 AM	12:00	1.44
	S3-PM-L-D	9/26/07 7:15 PM	9/27/07 7:15 AM	Pump Failed	
	S4-PM-R-D	NA	NA	…	
	S4-PM-L-D	NA	NA	…	
	S5-PM-R-D	9/26/07 7:35 PM	9/27/07 7:25 AM	11:50	1.42
	S5-PM-L-D	9/26/07 7:35 PM	9/27/07 7:25 AM	11:50	1.42
	S6-PM-R-D	9/26/07 7:30 PM	9/27/07 7:35 AM	12:05	1.45
	S6-PM-L-D	9/26/07 7:30 PM	9/27/07 7:35 AM	12:05	1.45
AM-E	S1-AM-R-E	9/28/07 6:50 AM	9/28/07 6:25 PM	11:35	1.39
	S1-AM-L-E	9/28/07 6:50 AM	9/28/07 6:25 PM	11:35	1.39
	S2-AM-R-E	9/28/07 6:55 AM	9/28/07 6:30 PM	11:35	1.39
	S2-AM-L-E	9/28/07 6:55 AM	9/28/07 6:30 PM	11:35	1.39
	S3-AM-R-E	9/28/07 7:10 AM	9/28/07 6:35 PM	Pump Failed	
	S3-AM-L-E	9/28/07 7:10 AM	9/28/07 6:35 PM	Pump Failed	
	S4-AM-R-E	NA	NA	…	
	S4-AM-L-E	NA	NA	…	
	S5-AM-R-E	9/28/07 7:25 AM	9/28/07 6:55 PM	11:30	1.38
	S5-AM-L-E	9/28/07 7:25 AM	9/28/07 6:55 PM	11:30	1.38
	S6-AM-R-E	9/28/07 7:40 AM	9/28/07 7:15 PM	11:35	1.39
	S6-AM-L-E	9/28/07 7:40 AM	9/28/07 7:15 PM	11:35	1.39
	S7-PM-L-E-F	9/28/07 8:10 AM	9/28/07 8:10 AM	…	
	S7-AM-L-E	9/28/07 8:10 AM	9/28/07 7:35 PM	11:25	1.37

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
PM-E	S1-PM-R-E	9/28/07 6:25 PM	9/29/07 6:47 AM	12:22	1.48
	S1-PM-L-E	9/28/07 6:25 PM	9/29/07 6:47 AM	12:22	1.48
	S2-PM-R-E	9/28/07 6:30 PM	9/29/07 6:55 AM	12:25	1.49
	S2-PM-L-E	9/28/07 6:30 PM	9/29/07 6:55 AM	12:25	1.49
	S3-PM-R-E	9/28/07 6:35 PM	9/29/07 7:05 AM	Pump Failed	
	S3-PM-L-E	9/28/07 6:35 PM	9/29/07 7:05 AM	Pump Failed	
	S4-PM-R-E	NA	NA	…	
	S4-PM-L-E	NA	NA	…	
	S5-PM-R-E	9/28/07 6:55 PM	9/29/07 7:18 AM	12:23	1.49
	S5-PM-L-E	9/28/07 6:55 PM	9/29/07 7:18 AM	12:23	1.49
	S6-PM-R-E	9/28/07 7:15 PM	9/29/07 7:28 AM	12:13	1.47
	S6-PM-L-E	9/28/07 7:15 PM	9/29/07 7:28 AM	12:13	1.47
	S7-PM-R-E	9/28/07 7:35 PM	9/29/07 7:46 AM	12:11	1.46
	S7-AM-R-E-F	9/28/07 8:10 AM	9/29/07 7:46 AM	23:36	2.83
AM-F	S1-AM-R-F	10/1/07 7:10 AM	10/1/07 6:30 PM	11:20	1.36
	S1-AM-L-F	10/1/07 7:10 AM	10/1/07 6:30 PM	11:20	1.36
	S2-AM-R-F	10/1/07 7:15 AM	10/1/07 6:35 PM	11:20	1.36
	S2-AM-L-F	10/1/07 7:15 AM	10/1/07 6:35 PM	11:20	1.36
	S3-AM-R-F	10/1/07 7:20 AM	10/1/07 6:40 PM	Pump Failed	
	S3-AM-L-F	10/1/07 7:20 AM	10/1/07 6:40 PM	Pump Failed	
	S4-AM-R-F	NA	NA	…	
	S4-AM-L-F	NA	NA	…	
	S5-AM-R-F	10/1/07 7:40 AM	10/1/07 7:00 PM	11:20	1.36
	S5-AM-L-F	10/1/07 7:40 AM	10/1/07 7:00 PM	11:20	1.36
	S6-AM-R-F	10/1/07 7:45 AM	10/1/07 7:10 PM	11:25	1.37
	S6-AM-L-F	10/1/07 7:45 AM	10/1/07 7:10 PM	11:25	1.37
PM-F	S1-PM-R-F	10/1/07 6:30 PM	10/2/07 7:00 AM	12:30	1.50
	S1-PM-L-F	10/1/07 6:30 PM	10/2/07 7:00 AM	12:30	1.50
	S2-PM-R-F	10/1/07 6:35 PM	10/2/07 7:07 AM	12:32	1.50
	S2-PM-L-F	10/1/07 6:35 PM	10/2/07 7:07 AM	12:32	1.50
	S3-PM-R-F	10/1/07 6:40 PM	10/2/07 7:18 AM	Pump Failed	
	S3-PM-L-F	10/1/07 6:40 PM	10/1/07 11:42 PM	5:02	0.60
	S4-PM-R-F	NA	NA	…	
	S4-PM-L-F	NA	NA	…	
	S5-PM-R-F	10/1/07 7:00 PM	10/2/07 8:05 AM	13:05	1.57
	S5-PM-L-F	10/1/07 7:00 PM	10/2/07 8:05 AM	13:05	1.57
	S6-PM-R-F	10/1/07 7:10 PM	10/2/07 7:00 AM	11:50	1.42
	S6-PM-L-F	10/1/07 7:10 PM	10/2/07 7:00 AM	11:50	1.42

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
AM-G	S1-AM-R-G	10/3/07 7:00 AM	10/3/07 6:30 PM	11:30	1.38
	S1-AM-L-G	10/3/07 7:00 AM	10/3/07 6:30 PM	11:30	1.38
	S2-AM-R-G	10/3/07 7:05 AM	10/3/07 6:35 PM	11:30	1.38
	S2-AM-L-G	10/3/07 7:05 AM	10/3/07 6:35 PM	11:30	1.38
	S3-AM-R-G	10/3/07 7:15 AM	10/3/07 6:45 PM	11:30	1.38
	S3-AM-L-G	10/3/07 7:15 AM	10/3/07 6:45 PM	11:30	1.38
	S4-AM-R-G	NA	NA	…	
	S4-AM-L-G	NA	NA	…	
	S5-AM-R-G	10/3/07 7:30 AM	10/3/07 6:55 PM	11:25	1.37
	S5-AM-L-G	10/3/07 7:30 AM	10/3/07 6:55 PM	11:25	1.37
	S6-AM-R-G	10/3/07 7:40 AM	10/3/07 7:05 PM	11:25	1.37
	S6-AM-L-G	10/3/07 7:40 AM	10/3/07 7:05 PM	11:25	1.37
PM-G	S1-PM-R-G	10/3/07 6:30 PM	10/4/07 6:30 AM	12:00	1.44
	S1-PM-L-G	10/3/07 6:30 PM	10/4/07 6:30 AM	12:00	1.44
	S2-PM-R-G	10/3/07 6:35 PM	10/4/07 6:35 AM	12:00	1.44
	S2-PM-L-G	10/3/07 6:35 PM	10/4/07 6:35 AM	12:00	1.44
	S3-PM-R-G	10/3/07 6:45 PM	10/4/07 6:45 AM	12:00	1.44
	S3-PM-L-G	10/3/07 6:45 PM	10/4/07 6:45 AM	12:00	1.44
	S4-PM-R-G	NA	NA	…	
	S4-PM-L-G	NA	NA	…	
	S5-PM-R-G	10/3/07 6:55 PM	10/4/07 6:55 AM	12:00	1.44
	S5-PM-L-G	10/3/07 6:55 PM	10/4/07 6:55 AM	12:00	1.44
	S6-PM-R-G	10/3/07 7:05 PM	10/4/07 7:05 AM	12:00	1.44
	S6-PM-L-G	10/3/07 7:05 PM	10/4/07 7:05 AM	12:00	1.44
AM-H	S1-AM-R-H	10/5/07 7:05 AM	10/5/07 6:35 PM	11:30	1.38
	S1-AM-L-H	10/5/07 7:05 AM	10/5/07 6:35 PM	11:30	1.38
	S2-AM-R-H	10/5/07 7:10 AM	10/5/07 6:45 PM	11:35	1.39
	S2-AM-L-H	10/5/07 7:10 AM	10/5/07 6:45 PM	11:35	1.39
	S3-AM-R-H	10/5/07 7:20 AM	10/5/07 6:55 PM	11:35	1.39
	S3-AM-L-H	10/5/07 7:20 AM	10/5/07 6:55 PM	11:35	1.39
	S4-AM-R-H	NA	NA	…	
	S4-AM-L-H	NA	NA	…	
	S5-AM-R-H	10/5/07 7:30 AM	10/5/07 7:05 PM	11:35	1.39
	S5-AM-L-H	10/5/07 7:30 AM	10/5/07 7:05 PM	11:35	1.39
	S6-AM-R-H	10/5/07 7:40 AM	10/5/07 7:10 PM	11:30	1.38
	S6-AM-L-H	10/5/07 7:40 AM	10/5/07 7:10 PM	11:30	1.38
	S7-AM-R-H-F	10/5/07 8:30 AM	10/5/07 7:40 PM	11:10	1.34
	S7-AM-L-H	10/5/07 8:30 AM	10/5/07 7:40 PM	11:10	1.34

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
PM-H	S1-PM-R-H	10/5/07 6:35 PM	10/6/07 6:41 AM	12:06	1.45
	S1-PM-L-H	10/5/07 6:35 PM	10/6/07 6:41 AM	12:06	1.45
	S2-PM-R-H	10/5/07 6:45 PM	10/6/07 6:46 AM	12:01	1.44
	S2-PM-L-H	10/5/07 6:45 PM	10/6/07 6:46 AM	12:01	1.44
	S3-PM-R-H	10/5/07 6:55 PM	10/6/07 6:57 AM	12:02	1.62
	S3-PM-L-H	10/5/07 6:55 PM	10/6/07 6:57 AM	12:02	1.44
	S4-PM-R-H	NA	NA	…	
	S4-PM-L-H	NA	NA	…	
	S5-PM-R-H	10/5/07 7:05 PM	10/6/07 7:12 AM	12:07	1.45
	S5-PM-L-H	10/5/07 7:05 PM	10/6/07 7:12 AM	12:07	1.45
	S6-PM-R-H	10/5/07 7:10 PM	10/6/07 7:22 AM	12:12	1.46
	S6-PM-L-H	10/5/07 7:10 PM	10/6/07 7:22 AM	12:12	1.46
	S7-PM-R-H	10/5/07 7:40 PM	10/6/07 7:40 AM	12:00	1.44
	S7-PM-L-H-F	10/5/07 7:40 PM	10/6/07 7:40 AM	12:00	1.44
AM-I	S1-AM-R-I	10/8/07 6:55 AM	10/8/07 6:25 PM	11:30	1.38
	S1-AM-L-I	10/8/07 6:55 AM	10/8/07 6:25 PM	11:30	1.38
	S2-AM-R-I	10/8/07 7:00 AM	10/8/07 6:30 PM	11:30	1.38
	S2-AM-L-I	10/8/07 7:00 AM	10/8/07 6:30 PM	11:30	1.38
	S3-AM-R-I	10/8/07 7:05 AM	10/8/07 6:40 PM	11:35	1.39
	S3-AM-L-I	10/8/07 7:05 AM	10/8/07 6:40 PM	11:35	1.39
	S4-AM-R-I	NA	NA	…	
	S4-AM-L-I	NA	NA	…	
	S5-AM-R-I	10/8/07 7:25 AM	10/8/07 6:50 PM	11:25	1.37
	S5-AM-L-I	10/8/07 7:25 AM	10/8/07 6:50 PM	11:25	1.37
	S6-AM-R-I	10/8/07 7:40 AM	10/8/07 7:00 PM	11:20	1.36
	S6-AM-L-I	10/8/07 7:40 AM	10/8/07 7:00 PM	11:20	1.36
PM-I	S1-PM-R-I	10/8/07 6:25 PM	10/9/07 7:20 AM	12:55	1.55
	S1-PM-L-I	10/8/07 6:25 PM	10/9/07 7:20 AM	12:55	1.55
	S2-PM-R-I	10/8/07 6:30 PM	10/9/07 7:25 AM	12:55	1.55
	S2-PM-L-I	10/8/07 6:30 PM	10/9/07 7:25 AM	12:55	1.55
	S3-PM-R-I	10/8/07 6:40 PM	10/9/07 7:30 AM	12:50	1.73
	S3-PM-L-I	10/8/07 6:40 PM	10/9/07 7:30 AM	12:50	1.54
	S4-PM-R-I	NA	NA	…	
	S4-PM-L-I	NA	NA	…	
	S5-PM-R-I	10/8/07 6:50 PM	10/9/07 7:45 AM	12:55	1.55
	S5-PM-L-I	10/8/07 6:50 PM	10/9/07 7:45 AM	12:55	1.55
	S6-PM-R-I	10/8/07 7:00 PM	10/9/07 7:55 AM	12:55	1.55
	S6-PM-L-I	10/8/07 7:00 PM	10/9/07 7:55 AM	12:55	1.55

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
AM-J	S1-AM-R-J	10/10/07 7:00 AM	10/10/07 6:40 PM	11:40	1.40
	S1-AM-L-J	10/10/07 7:00 AM	10/10/07 6:40 PM	11:40	1.40
	S2-AM-R-J	10/10/07 7:10 AM	10/10/07 6:45 PM	11:35	1.39
	S2-AM-L-J	10/10/07 7:10 AM	10/10/07 6:45 PM	11:35	1.39
	S3-AM-R-J	10/10/07 7:15 AM	10/10/07 6:55 PM	11:40	1.40
	S3-AM-L-J	10/10/07 7:15 AM	10/10/07 6:55 PM	11:40	1.40
	S4-AM-R-J	10/10/07 7:25 AM	10/10/07 7:00 PM	11:35	1.39
	S4-AM-L-J	10/10/07 7:25 AM	10/10/07 7:00 PM	11:35	1.39
	S5-AM-R-J	10/10/07 7:35 AM	10/10/07 7:15 PM	11:40	1.40
	S5-AM-L-J	10/10/07 7:35 AM	10/10/07 7:15 PM	11:40	1.40
	S6-AM-R-J	10/10/07 7:45 AM	10/10/07 7:25 PM	11:40	1.40
	S6-AM-L-J	10/10/07 7:45 AM	10/10/07 7:25 PM	11:40	1.40
	S7-AM-R-J-F	10/10/07 6:40 AM	10/10/07 7:55 PM	13:15	1.59
	S7-AM-L-J	10/10/07 6:40 AM	10/10/07 7:55 PM	13:15	1.59
PM-J	S1-PM-R-J	10/11/07 6:50 PM	10/12/07 6:50 AM	12:00	1.44
	S1-PM-L-J	10/11/07 6:50 PM	10/12/07 6:50 AM	12:00	1.44
	S2-PM-R-J	10/11/07 6:55 PM	10/12/07 6:55 AM	12:00	1.44
	S2-PM-L-J	10/11/07 6:55 PM	10/12/07 6:55 AM	12:00	1.44
	S3-PM-R-J	10/11/07 7:05 PM	10/12/07 7:05 AM	Pump Failed	
	S3-PM-L-J	10/11/07 7:05 PM	10/12/07 7:05 AM	12:00	1.44
	S4-PM-R-J	10/11/07 7:10 PM	10/12/07 7:15 AM	12:05	1.45
	S4-PM-L-J	10/11/07 7:10 PM	10/12/07 7:15 AM	12:05	1.45
	S5-PM-R-J	10/11/07 7:20 PM	10/12/07 7:25 AM	12:05	1.45
	S5-PM-L-J	10/11/07 7:20 PM	10/12/07 7:25 AM	12:05	1.45
	S6-PM-R-J	10/11/07 7:30 PM	10/12/07 7:35 AM	12:05	1.45
	S6-PM-L-J	10/11/07 7:30 PM	10/12/07 7:35 AM	12:05	1.45
	S7-PM-R-J	10/11/07 7:50 PM	10/12/07 7:55 AM	12:05	1.45
	S7-PM-L-J-F	10/11/07 7:50 PM	10/12/07 7:55 AM	12:05	1.45
AM-K	S1-AM-R-K	10/12/07 6:50 AM	10/12/07 7:32 PM	12:42	1.52
	S1-AM-L-K	10/12/07 6:50 AM	10/12/07 7:32 PM	12:42	1.52
	S2-AM-R-K	10/12/07 6:55 AM	10/12/07 7:35 PM	12:40	1.52
	S2-AM-L-K	10/12/07 6:55 AM	10/12/07 7:35 PM	12:40	1.52
	S3-AM-R-K	10/12/07 7:05 AM	10/12/07 7:45 PM	12:40	1.52
	S3-AM-L-K	10/12/07 7:05 AM	10/12/07 7:45 PM	12:40	1.52
	S4-AM-R-K	10/12/07 7:15 AM	10/12/07 7:50 PM	12:35	1.51
	S4-AM-L-K	10/12/07 7:15 AM	10/12/07 7:50 PM	12:35	1.51
	S5-AM-R-K	10/12/07 7:25 AM	10/12/07 8:00 PM	12:35	1.51
	S5-AM-L-K	10/12/07 7:25 AM	10/12/07 8:00 PM	12:35	1.51
	S6-AM-R-K	10/12/07 7:35 AM	10/12/07 8:15 PM	12:40	1.52
	S6-AM-L-K	10/12/07 7:35 AM	10/12/07 8:15 PM	12:40	1.52

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
PM-K	S1-PM-R-K	10/12/07 7:30 PM	10/13/07 6:49 AM	11:19	1.36
	S1-PM-L-K	10/12/07 7:30 PM	10/13/07 6:49 AM	11:19	1.36
	S2-PM-R-K	10/12/07 7:35 PM	10/13/07 6:56 AM	11:21	1.36
	S2-PM-L-K	10/12/07 7:35 PM	10/13/07 6:56 AM	11:21	1.36
	S3-PM-R-K	10/12/07 7:45 PM	10/13/07 7:04 AM	11:19	1.36
	S3-PM-L-K	10/12/07 7:45 PM	10/13/07 7:04 AM	11:19	1.36
	S4-PM-R-K	10/12/07 7:50 PM	10/13/07 7:15 AM	11:25	1.37
	S4-PM-L-K	10/12/07 7:50 PM	10/13/07 7:15 AM	11:25	1.37
	S5-PM-R-K	10/12/07 8:00 PM	10/13/07 7:26 AM	11:26	1.37
	S5-PM-L-K	10/12/07 8:00 PM	10/13/07 7:26 AM	11:26	1.37
	S6-PM-R-K	10/12/07 8:15 PM	10/13/07 7:36 AM	11:21	1.36
	S6-PM-L-K	10/12/07 8:15 PM	10/13/07 7:36 AM	11:21	1.36
AM-L	S1-AM-R-L	10/15/07 7:05 AM	10/15/07 7:05 PM	12:00	1.44
	S1-AM-L-L	10/15/07 7:05 AM	10/15/07 7:05 PM	12:00	1.44
	S2-AM-R-L	10/15/07 7:10 AM	10/15/07 7:11 PM	12:01	1.44
	S2-AM-L-L	10/15/07 7:10 AM	10/15/07 7:11 PM	12:01	1.44
	S3-AM-R-L	10/15/07 7:20 AM	10/15/07 7:19 PM	11:59	1.44
	S3-AM-L-L	10/15/07 7:20 AM	10/15/07 7:19 PM	11:59	1.44
	S4-AM-R-L	10/15/07 7:25 AM	10/15/07 7:29 PM	12:04	1.45
	S4-AM-L-L	10/15/07 7:25 AM	10/15/07 7:29 PM	12:04	1.45
	S5-AM-R-L	10/15/07 7:35 AM	10/15/07 7:43 PM	12:08	1.46
	S5-AM-L-L	10/15/07 7:35 AM	10/15/07 7:43 PM	12:08	1.46
	S6-AM-R-L	10/15/07 7:45 AM	10/15/07 7:52 PM	12:07	1.45
	S6-AM-L-L	10/15/07 7:45 AM	10/15/07 7:52 PM	12:07	1.45
PM-L	S1-PM-R-L	10/15/07 7:05 PM	10/16/07 7:15 AM	12:10	1.46
	S1-PM-L-L	10/15/07 7:05 PM	10/16/07 7:15 AM	12:10	1.46
	S2-PM-R-L	10/15/07 7:11 PM	10/16/07 7:20 AM	12:09	1.46
	S2-PM-L-L	10/15/07 7:11 PM	10/16/07 7:20 AM	12:09	1.46
	S3-PM-R-L	10/15/07 7:19 PM	10/16/07 7:30 AM	12:11	1.46
	S3-PM-L-L	10/15/07 7:19 PM	10/16/07 7:30 AM	12:11	1.46
	S4-PM-R-L	10/15/07 7:29 PM	10/16/07 7:40 AM	12:11	1.46
	S4-PM-L-L	10/15/07 7:29 PM	10/16/07 7:40 AM	12:11	1.46
	S5-PM-R-L	10/15/07 7:43 PM	10/16/07 7:50 AM	12:07	1.45
	S5-PM-L-L	10/15/07 7:43 PM	10/16/07 7:50 AM	12:07	1.45
	S6-PM-R-L	10/15/07 7:52 PM	10/16/07 7:55 AM	12:03	1.45
	S6-PM-L-L	10/15/07 7:52 PM	10/16/07 7:55 AM	12:03	1.45

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
AM-M	S1-AM-R-M	10/17/07 7:10 AM	10/17/07 6:30 PM	11:20	1.36
	S1-AM-L-M	10/17/07 7:10 AM	10/17/07 6:30 PM	11:20	1.36
	S2-AM-R-M	10/17/07 7:15 AM	10/17/07 6:35 PM	11:20	1.36
	S2-AM-L-M	10/17/07 7:15 AM	10/17/07 6:35 PM	11:20	1.36
	S3-AM-R-M	10/17/07 7:25 AM	10/17/07 6:45 PM	11:20	1.36
	S3-AM-L-M	10/17/07 7:25 AM	10/17/07 6:45 PM	11:20	1.29
	S4-AM-R-M	10/17/07 7:30 AM	10/17/07 6:55 PM	11:25	1.37
	S4-AM-L-M	10/17/07 7:30 AM	10/17/07 6:55 PM	11:25	1.37
	S5-AM-R-M	10/17/07 7:45 AM	10/17/07 7:05 PM	11:20	1.36
	S5-AM-L-M	10/17/07 7:45 AM	10/17/07 7:05 PM	11:20	1.36
	S6-AM-R-M	10/17/07 7:55 AM	10/17/07 7:15 PM	11:20	1.50
	S6-AM-L-M	10/17/07 7:55 AM	10/17/07 7:15 PM	11:20	1.36
PM-M	S1-PM-R-M	10/17/07 6:30 PM	10/18/07 6:35 AM	12:05	1.52
	S1-PM-L-M	10/17/07 6:30 PM	10/18/07 6:35 AM	12:05	1.38
	S2-PM-R-M	10/17/07 6:35 PM	10/18/07 6:40 AM	12:05	1.52
	S2-PM-L-M	10/17/07 6:35 PM	10/18/07 6:40 AM	12:05	1.45
	S3-PM-R-M	10/17/07 6:45 PM	10/18/07 6:50 AM	12:05	1.45
	S3-PM-L-M	10/17/07 6:45 PM	10/18/07 6:50 AM	12:05	1.30
	S4-PM-R-M	10/17/07 6:55 PM	10/18/07 7:00 AM	12:05	1.45
	S4-PM-L-M	10/17/07 6:55 PM	10/18/07 7:00 AM	12:05	1.38
	S5-PM-R-M	10/17/07 7:05 PM	10/18/07 7:10 AM	12:05	1.45
	S5-PM-L-M	10/17/07 7:05 PM	10/18/07 7:10 AM	12:05	1.45
	S6-PM-R-M	10/17/07 7:15 PM	10/18/07 7:20 AM	12:05	1.52
	S6-PM-L-M	10/17/07 7:15 PM	10/18/07 7:20 AM	12:05	1.45
AM-N	S1-AM-R-N	10/19/07 7:10 AM	10/19/07 7:00 PM	11:50	1.42
	S1-AM-L-N	10/19/07 7:10 AM	10/19/07 7:00 PM	11:50	1.42
	S2-AM-R-N	10/19/07 7:15 AM	10/19/07 7:10 PM	11:55	1.43
	S2-AM-L-N	10/19/07 7:15 AM	10/19/07 7:10 PM	11:55	1.43
	S3-AM-R-N	10/19/07 7:25 AM	10/19/07 7:15 PM	11:50	1.42
	S3-AM-L-N	10/19/07 7:25 AM	10/19/07 7:15 PM	11:50	1.35
	S4-AM-R-N	10/19/07 7:35 AM	10/19/07 7:25 PM	11:50	1.42
	S4-AM-L-N	10/19/07 7:35 AM	10/19/07 7:25 PM	11:50	1.42
	S5-AM-R-N	10/19/07 7:45 AM	10/19/07 7:35 PM	11:50	1.35
	S5-AM-L-N	10/19/07 7:45 AM	10/19/07 7:35 PM	11:50	1.42
	S6-AM-L-N	10/19/07 7:55 AM	10/19/07 7:45 PM	11:50	1.42
	S7-AM-R-N-F	10/19/07 8:25 AM	10/19/07 8:05 PM	11:40	1.40
	S7-AM-L-N	10/19/07 8:25 AM	10/19/07 8:05 PM	11:40	1.40

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
PM-N	S1-PM-R-N	10/19/07 7:00 PM	10/20/07 6:35 AM	11:35	1.39
	S1-PM-L-N	10/19/07 7:00 PM	10/20/07 6:35 AM	11:35	1.39
	S2-PM-R-N	10/19/07 7:10 PM	10/20/07 6:40 AM	11:30	1.38
	S2-PM-L-N	10/19/07 7:10 PM	10/20/07 6:40 AM	11:30	1.38
	S3-PM-R-N	10/19/07 7:15 PM	10/20/07 6:50 AM	11:35	1.39
	S3-PM-L-N	10/19/07 7:15 PM	10/20/07 6:50 AM	11:35	1.25
	S4-PM-R-N	10/19/07 7:25 PM	10/20/07 7:00 AM	11:35	1.39
	S4-PM-L-N	10/19/07 7:25 PM	10/20/07 7:00 AM	11:35	1.39
	S5-PM-R-N	10/19/07 7:35 PM	10/20/07 7:10 AM	11:35	1.32
	S5-PM-L-N	10/19/07 7:35 PM	10/20/07 7:10 AM	11:35	1.39
	S6-PM-R-N	10/19/07 7:45 PM	10/20/07 7:20 AM	11:35	1.39
	S6-PM-L-N	10/19/07 7:45 PM	10/20/07 7:20 AM	11:35	1.39
	S7-PM-R-N	10/19/07 8:05 PM	10/20/07 7:40 AM	11:35	1.39
	S7-PM-L-N-F	10/19/07 8:05 PM	10/20/07 7:40 AM	11:35	1.39
1020	S1-1020-R	10/20/07 8:30 PM	10/21/07 8:30 AM	12:00	1.44
	S1-1020-L	10/20/07 8:30 PM	10/21/07 8:30 AM	12:00	1.44
	S2-1020-R	10/20/07 8:38 PM	10/21/07 8:35 AM	11:57	1.43
	S2-1020-L	10/20/07 8:38 PM	10/21/07 8:35 AM	11:57	1.43
	S3-1020-R	10/20/07 8:42 PM	10/21/07 8:42 AM	12:00	1.44
	S3-1020-L	10/20/07 8:42 PM	10/21/07 8:42 AM	12:00	1.44
	S5-1020-R	10/20/07 8:58 PM	10/21/07 9:00 AM	12:02	1.44
	S5-1020-L	10/20/07 8:58 PM	10/21/07 9:00 AM	12:02	1.30
	S6-1020-R	10/20/07 9:11 PM	10/21/07 9:20 AM	12:09	1.46
	S6-1020-L	10/20/07 9:11 PM	10/21/07 9:20 AM	12:09	1.46
1021	S1-1021-R	10/21/07 7:40 PM	10/22/07 7:15 AM	11:35	1.46
	S1-1021-L	10/21/07 7:40 PM	10/22/07 7:15 AM	11:35	1.39
	S2-1021-R	10/21/07 7:46 PM	10/22/07 7:20 AM	11:34	1.39
	S2-1021-L	10/21/07 7:46 PM	10/22/07 7:20 AM	11:34	1.39
	S3-1021-R	10/21/07 8:00 PM	10/22/07 7:30 AM	11:30	1.38
	S3-1021-L	10/21/07 8:00 PM	10/22/07 7:30 AM	11:30	1.31
	S5-1021-R	10/21/07 8:17 PM	10/22/07 7:50 AM	11:33	1.39
	S5-1021-L	10/21/07 8:17 PM	10/22/07 7:50 AM	11:33	1.39
	S6-1021-R	10/21/07 8:30 PM	10/22/07 8:00 AM	11:30	1.45
	S6-1021-L	10/21/07 8:30 PM	10/22/07 8:00 AM	11:30	1.38

Days O-P were set at 4-hour intervals

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
AM-R	S1-AM-R-R	10/29/07 6:55 AM	10/29/07 6:35 PM	11:40	1.40
	S1-AM-L-R	10/29/07 6:55 AM	10/29/07 6:35 PM	11:40	1.40
	S2-AM-R-R	10/29/07 7:00 AM	10/29/07 6:40 PM	11:40	1.40
	S2-AM-L-R	10/29/07 7:00 AM	10/29/07 6:40 PM	11:40	1.40
	S3-AM-R-R	10/29/07 7:10 AM	10/29/07 6:50 PM	11:40	1.40
	S3-AM-L-R	10/29/07 7:10 AM	10/29/07 6:50 PM	11:40	1.40
	S4-AM-R-R	10/29/07 7:20 AM	10/29/07 7:25 AM	Pump Failed	
	S4-AM-L-R	10/29/07 7:20 AM	10/29/07 6:55 PM	11:35	1.39
	S5-AM-R-R	10/29/07 7:35 AM	10/29/07 7:05 PM	11:30	1.38
	S5-AM-L-R	10/29/07 7:35 AM	10/29/07 7:05 PM	11:30	1.38
	S6-AM-R-R	10/29/07 7:40 AM	10/29/07 7:15 PM	11:35	1.39
	S6-AM-L-R	10/29/07 7:40 AM	10/29/07 7:15 PM	11:35	1.39
PM-R	S1-PM-R-R	10/29/07 6:35 PM	10/30/07 6:30 AM	11:55	1.43
	S1-PM-L-R	10/29/07 6:35 PM	10/30/07 6:30 AM	11:55	1.43
	S2-PM-R-R	10/29/07 6:40 PM	10/30/07 6:35 AM	11:55	1.43
	S2-PM-L-R	10/29/07 6:40 PM	10/30/07 6:35 AM	11:55	1.43
	S3-PM-R-R	10/29/07 6:50 PM	10/30/07 6:45 AM	11:55	1.43
	S3-PM-L-R	10/29/07 6:50 PM	10/30/07 6:45 AM	11:55	1.43
	S4-PM-R-R	10/29/07 6:55 AM	10/30/07 6:50 AM	11:55	1.43
	S4-PM-L-R	10/29/07 6:55 PM	10/30/07 6:50 AM	11:55	1.43
	S5-PM-R-R	10/29/07 7:05 PM	10/30/07 7:00 AM	11:55	1.43
	S5-PM-L-R	10/29/07 7:05 PM	10/30/07 7:00 AM	11:55	1.43
	S6-PM-R-R	10/29/07 7:15 PM	10/30/07 7:10 AM	11:55	1.43
	S6-PM-L-R	10/29/07 7:15 PM	10/30/07 7:10 AM	11:55	1.43
AM-S	S1-AM-R-S	10/31/07 6:55 AM	10/31/07 5:55 PM	11:00	1.32
	S1-AM-L-S	10/31/07 6:55 AM	10/31/07 5:55 PM	11:00	1.32
	S2-AM-R-S	10/31/07 7:00 AM	10/31/07 5:10 PM	10:10	1.22
	S2-AM-L-S	10/31/07 7:00 AM	10/31/07 5:10 PM	10:10	1.22
	S3-AM-R-S	10/31/07 7:10 AM	10/31/07 5:15 PM	10:05	1.21
	S3-AM-L-S	10/31/07 7:10 AM	10/31/07 5:15 PM	10:05	1.21
	S4-AM-R-S	10/31/07 11:45 AM	10/31/07 5:25 PM	5:40	0.68
	S4-AM-L-S	10/31/07 11:45 AM	10/31/07 5:25 PM	5:40	0.68
	S5-AM-R-S	10/31/07 7:30 AM	10/31/07 5:35 PM	10:05	1.21
	S5-AM-L-S	10/31/07 7:30 AM	10/31/07 5:35 PM	10:05	1.21
	S6-AM-R-S	10/31/07 7:40 AM	10/31/07 5:45 PM	10:05	1.21
	S6-AM-L-S	10/31/07 7:40 AM	10/31/07 5:45 PM	10:05	1.21

Table A-2 (continued)
12-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
PM-S	S1-PM-R-S	10/31/07 5:55 PM	11/1/07 7:00 AM	13:05	1.57
	S1-PM-L-S	10/31/07 5:55 PM	11/1/07 7:00 AM	13:05	1.57
	S2-PM-R-S	10/31/07 5:10 PM	11/1/07 7:05 AM	13:55	1.67
	S2-PM-L-S	10/31/07 5:10 PM	11/1/07 7:05 AM	13:55	1.67
	S3-PM-R-S	10/31/07 5:15 PM	11/1/07 7:15 AM	14:00	1.68
	S3-PM-L-S	10/31/07 5:15 PM	11/1/07 7:15 AM	14:00	1.68
	S4-PM-R-S	10/31/07 5:25 PM	11/1/07 7:20 AM	13:55	1.67
	S4-PM-L-S	10/31/07 5:25 PM	11/1/07 7:20 AM	13:55	1.67
	S5-PM-R-S	10/31/07 5:35 PM	11/1/07 7:30 AM	13:55	1.67
	S5-PM-L-S	10/31/07 5:35 PM	11/1/07 7:30 AM	13:55	1.67
	S6-PM-R-S	10/31/07 5:45 PM	11/1/07 7:40 AM	13:55	1.67
	S6-PM-L-S	10/31/07 5:45 PM	11/1/07 7:40 AM	13:55	1.67
AM-T	S1-AM-R-T	11/2/07 7:15 AM	11/2/07 6:20 PM	11:05	1.33
	S1-AM-L-T	11/2/07 7:15 AM	11/2/07 6:20 PM	11:05	1.33
	S2-AM-R-T	11/2/07 7:25 AM	11/2/07 6:25 PM	11:00	1.32
	S2-AM-L-T	11/2/07 7:25 AM	11/2/07 6:25 PM	11:00	1.32
	S3-AM-R-T	11/2/07 7:35 AM	11/2/07 6:35 PM	11:00	1.32
	S3-AM-L-T	11/2/07 7:35 AM	11/2/07 6:35 PM	11:00	1.32
	S4-AM-R-T	11/2/07 11:40 AM	11/2/07 6:40 PM	7:00	0.84
	S4-AM-L-T	11/2/07 11:40 AM	11/2/07 6:40 PM	7:00	0.84
	S5-AM-R-T	11/2/07 7:55 AM	11/2/07 6:50 PM	10:55	1.31
	S5-AM-L-T	11/2/07 7:55 AM	11/2/07 6:50 PM	10:55	1.31
	S6-AM-R-T	11/2/07 8:05 AM	11/2/07 7:00 PM	10:55	1.31
	S6-AM-L-T	11/2/07 8:05 AM	11/2/07 7:00 PM	10:55	1.31
	S7-AM-R-T-F	11/2/07 7:00 AM	11/2/07 7:25 PM	12:25	1.49
	S7-AM-L-T	11/2/07 7:00 AM	11/2/07 7:25 PM	12:25	1.49
PM-T	S1-PM-R-T	11/2/07 6:20 PM	11/3/07 6:35 AM	12:15	1.47
	S1-PM-L-T	11/2/07 6:20 PM	11/3/07 6:35 AM	12:15	1.47
	S2-PM-R-T	11/2/07 6:25 PM	11/3/07 6:40 AM	12:15	1.47
	S2-PM-L-T	11/2/07 6:25 PM	11/3/07 6:40 AM	12:15	1.47
	S3-PM-R-T	11/2/07 6:35 PM	11/3/07 6:50 AM	12:15	1.47
	S3-PM-L-T	11/2/07 6:35 PM	11/3/07 6:50 AM	12:15	1.47
	S4-PM-R-T	11/2/07 6:40 PM	11/3/07 7:00 AM	12:20	1.48
	S4-PM-L-T	11/2/07 6:40 PM	11/3/07 7:00 AM	12:20	1.48
	S5-PM-R-T	11/2/07 6:50 PM	11/3/07 7:10 AM	12:20	1.48
	S5-PM-L-T	11/2/07 6:50 PM	11/3/07 7:10 AM	12:20	1.48
	S6-PM-R-T	11/2/07 7:00 PM	11/3/07 7:20 AM	12:20	1.48
	S6-PM-L-T	11/2/07 7:00 PM	11/3/07 7:20 AM	12:20	1.48
	S7-PM-R-T	11/2/07 7:25 PM	11/3/07 7:35 AM	12:10	1.46
	S7-PM-L-T-F	11/2/07 7:25 PM	11/3/07 7:35 AM	12:10	1.46

Table A-3
4-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
0-O	S1-0-R-O	10/22/07 7:15 AM	10/22/07 11:00 AM	3:45	0.50
	S1-0-L-O	10/22/07 7:15 AM	10/22/07 11:00 AM	3:45	0.45
	S2-0-R-O	10/22/07 7:20 AM	10/22/07 11:05 AM	3:45	0.47
	S2-0-L-O	10/22/07 7:20 AM	10/22/07 11:05 AM	3:45	0.45
	S3-0-R-O	10/22/07 7:30 AM	10/22/07 11:10 AM	3:40	0.44
	S3-0-L-O	10/22/07 7:30 AM	10/22/07 11:10 AM	3:40	0.40
	S4-0-R-O	10/22/07 7:40 AM	10/22/07 11:20 AM	3:40	0.44
	S4-0-L-O	10/22/07 7:40 AM	10/22/07 11:20 AM	3:40	0.44
	S5-0-R-O	10/22/07 7:50 AM	10/22/07 11:30 AM	3:40	0.44
	S5-0-L-O	10/22/07 7:50 AM	10/22/07 11:30 AM	3:40	0.44
	S6-0-R-O	10/22/07 8:00 AM	10/22/07 11:45 AM	3:45	0.47
	S6-0-L-O	10/22/07 8:00 AM	10/22/07 11:45 AM	3:45	0.45
4-O	S1-4-R-O	10/22/07 11:00 AM	10/22/07 3:15 PM	4:15	0.51
	S1-4-L-O	10/22/07 11:00 AM	10/22/07 3:15 PM	4:15	0.56
	S2-4-R-O	10/22/07 11:05 AM	10/22/07 3:20 PM	4:15	0.51
	S2-4-L-O	10/22/07 11:05 AM	10/22/07 3:20 PM	4:15	0.56
	S3-4-R-O	10/22/07 11:10 AM	10/22/07 3:35 PM	4:25	0.48
	S3-4-L-O	10/22/07 11:10 AM	10/22/07 3:35 PM	4:25	0.53
	S4-4-R-O	10/22/07 11:20 AM	10/22/07 3:45 PM	4:25	0.53
	S4-4-L-O	10/22/07 11:20 AM	10/22/07 3:45 PM	4:25	0.53
	S5-4-R-O	10/22/07 11:30 AM	10/22/07 3:55 PM	4:25	0.50
	S5-4-L-O	10/22/07 11:30 AM	10/22/07 3:55 PM	4:25	0.50
	S6-4-R-O	10/22/07 11:45 AM	10/22/07 4:00 PM	4:15	0.51
	S6-4-L-O	10/22/07 11:45 AM	10/22/07 4:00 PM	4:15	0.51
8-O	S1-8-R-O	10/22/07 3:15 PM	10/22/07 6:45 PM	3:45	0.42
	S1-8-L-O	10/22/07 3:15 PM	10/22/07 6:45 PM	3:45	0.46
	S2-8-R-O	10/22/07 3:20 PM	10/22/07 6:50 PM	3:45	0.42
	S2-8-L-O	10/22/07 3:20 PM	10/22/07 6:50 PM	3:45	0.46
	S3-8-R-O	10/22/07 3:35 PM	10/22/07 7:00 PM	3:35	0.37
	S3-8-L-O	10/22/07 3:35 PM	10/22/07 7:00 PM	3:35	0.41
	S4-8-R-O	10/22/07 3:45 PM	10/22/07 7:05 PM	3:35	0.40
	S4-8-L-O	10/22/07 3:45 PM	10/22/07 7:05 PM	3:35	0.40
	S5-8-R-O	10/22/07 3:55 PM	10/22/07 7:15 PM	3:35	0.36
	S5-8-L-O	10/22/07 3:55 PM	10/22/07 7:15 PM	3:35	0.36
	S6-8-R-O	10/22/07 4:00 PM	10/22/07 7:25 PM	3:40	0.41
	S6-8-L-O	10/22/07 4:00 PM	10/22/07 7:25 PM	3:40	0.41

Table A-3 (continued)
4-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
12-O	S1-12-R-O	10/22/07 6:45 PM	10/22/07 11:05 PM	4:05	0.52
	S1-12-L-O	10/22/07 6:45 PM	10/22/07 11:05 PM	4:05	0.55
	S2-12-R-O	10/22/07 6:50 PM	10/22/07 11:11 PM	4:06	0.52
	S2-12-L-O	10/22/07 6:50 PM	10/22/07 11:11 PM	4:06	0.55
	S3-12-R-O	10/22/07 7:00 PM	10/22/07 11:21 PM	4:11	0.50
	S3-12-L-O	10/22/07 7:00 PM	10/22/07 11:21 PM	4:11	0.52
	S4-12-R-O	10/22/07 7:05 PM	10/22/07 11:30 PM	4:10	0.53
	S4-12-L-O	10/22/07 7:05 PM	10/22/07 11:30 PM	4:10	0.53
	S5-12-R-O	10/22/07 7:15 PM	10/22/07 11:41 PM	4:11	0.51
	S5-12-L-O	10/22/07 7:15 PM	10/22/07 11:41 PM	4:11	0.51
	S6-12-R-O	10/22/07 7:25 PM	10/22/07 11:53 PM	4:13	0.54
	S6-12-L-O	10/22/07 7:25 PM	10/22/07 11:53 PM	4:13	0.51
16-O	S1-16-R-O	10/22/07 11:05 PM	10/23/07 3:00 AM	3:55	0.47
	S1-16-L-O	10/22/07 11:05 PM	10/23/07 3:00 AM	3:55	0.47
	S2-16-R-O	10/22/07 11:11 PM	10/23/07 3:07 AM	3:56	0.47
	S2-16-L-O	10/22/07 11:11 PM	10/23/07 3:07 AM	3:56	0.47
	S3-16-R-O	10/22/07 11:21 PM	10/23/07 3:20 AM	3:59	0.48
	S3-16-L-O	10/22/07 11:21 PM	10/23/07 3:20 AM	3:59	0.48
	S4-16-R-O	10/22/07 11:30 PM	10/23/07 3:35 AM	4:05	0.49
	S4-16-L-O	10/22/07 11:30 PM	10/23/07 3:35 AM	4:05	0.49
	S5-16-R-O	10/22/07 11:41 PM	10/23/07 3:55 AM	4:14	0.48
	S5-16-L-O	10/22/07 11:41 PM	10/23/07 3:55 AM	4:14	0.51
	S6-16-R-O	10/22/07 11:53 PM	10/23/07 4:04 AM	4:11	0.50
	S6-16-L-O	10/22/07 11:53 PM	10/23/07 4:04 AM	4:11	0.48
20-O	S1-20-R-O	10/23/07 3:00 AM	10/23/07 6:45 AM	3:45	0.45
	S1-20-L-O	10/23/07 3:00 AM	10/23/07 6:45 AM	3:45	0.47
	S2-20-R-O	10/23/07 3:07 AM	10/23/07 6:50 AM	3:43	0.42
	S2-20-L-O	10/23/07 3:07 AM	10/23/07 6:50 AM	3:43	0.45
	S3-20-R-O	10/23/07 3:20 AM	10/23/07 7:00 AM	3:40	0.44
	S3-20-L-O	10/23/07 3:20 AM	10/23/07 7:00 AM	3:40	0.46
	S4-20-R-O	10/23/07 3:35 AM	10/23/07 7:10 AM	3:35	0.43
	S4-20-L-O	10/23/07 3:35 AM	10/23/07 7:10 AM	3:35	0.43
	S5-20-R-O	10/23/07 3:55 AM	10/23/07 7:20 AM	3:25	0.41
	S5-20-L-O	10/23/07 3:55 AM	10/23/07 7:20 AM	3:25	0.39
	S6-20-R-O	10/23/07 4:04 AM	10/23/07 7:30 AM	3:26	0.41
	S6-20-L-O	10/23/07 4:04 AM	10/23/07 7:30 AM	3:26	0.39

Table A-3 (continued)
4-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
0-P	S1-0-R-P	10/24/07 7:10 AM	10/24/07 11:45 AM	4:35	0.55
	S1-0-L-P	10/24/07 7:10 AM	10/24/07 11:45 AM	4:35	0.55
	S2-0-R-P	10/24/07 7:15 AM	10/24/07 11:50 AM	4:35	0.55
	S2-0-L-P	10/24/07 7:15 AM	10/24/07 11:50 AM	4:35	0.55
	S3-0-R-P	10/24/07 7:25 AM	10/24/07 12:00 PM	4:35	0.55
	S3-0-L-P	10/24/07 7:25 AM	10/24/07 12:00 PM	4:35	0.55
	S4-0-R-P	10/24/07 7:30 AM	10/24/07 12:05 PM	4:35	0.55
	S4-0-L-P	10/24/07 7:30 AM	10/24/07 12:05 PM	4:35	0.55
	S5-0-R-P	10/24/07 7:45 AM	10/24/07 12:15 PM	4:30	0.51
	S5-0-L-P	10/24/07 7:45 AM	10/24/07 12:15 PM	4:30	0.54
	S6-0-R-P	10/24/07 7:55 AM	10/24/07 12:25 PM	4:30	0.54
	S6-0-L-P	10/24/07 7:55 AM	10/24/07 12:25 PM	4:30	0.54
4-P	S1-4-R-P	10/24/07 11:45 AM	10/24/07 2:45 PM	3:00	0.36
	S1-4-L-P	10/24/07 11:45 AM	10/24/07 2:45 PM	3:00	0.36
	S2-4-R-P	10/24/07 11:50 AM	10/24/07 2:50 PM	3:00	0.36
	S2-4-L-P	10/24/07 11:50 AM	10/24/07 2:50 PM	3:00	0.36
	S3-4-R-P	10/24/07 12:00 PM	10/24/07 2:55 PM	2:55	0.35
	S3-4-L-P	10/24/07 12:00 PM	10/24/07 2:55 PM	2:55	0.35
	S4-4-R-P	10/24/07 12:05 PM	10/24/07 3:05 PM	3:00	0.36
	S4-4-L-P	10/24/07 12:05 PM	10/24/07 3:05 PM	3:00	0.36
	S5-4-R-P	10/24/07 12:15 PM	10/24/07 3:15 PM	3:00	0.36
	S5-4-L-P	10/24/07 12:15 PM	10/24/07 3:15 PM	3:00	0.36
	S6-4-R-P	10/24/07 12:25 PM	10/24/07 3:25 PM	3:00	0.36
	S6-4-L-P	10/24/07 12:25 PM	10/24/07 3:25 PM	3:00	0.36
	S7-4-R-P-F	10/24/07 1:35 PM	10/24/07 4:25 PM	2:50	0.34
	S7-4-L-P	10/24/07 1:35 PM	10/24/07 4:25 PM	2:50	0.34
8-P	S1-8-R-P	10/24/07 2:45 PM	10/24/07 7:00 PM	4:15	0.54
	S1-8-L-P	10/24/07 2:45 PM	10/24/07 7:00 PM	4:15	0.48
	S2-8-R-P	10/24/07 2:50 PM	10/24/07 7:05 PM	4:15	0.54
	S2-8-L-P	10/24/07 2:50 PM	10/24/07 7:05 PM	4:15	0.68
	S3-8-R-P	10/24/07 2:55 PM	10/24/07 7:10 PM	4:15	0.56
	S3-8-L-P	10/24/07 2:55 PM	10/24/07 7:10 PM	4:15	0.64
	S4-8-R-P	10/24/07 3:05 PM	10/24/07 7:20 PM	4:15	0.44
	S4-8-L-P	10/24/07 3:05 PM	10/24/07 7:20 PM	4:15	0.46
	S5-8-R-P	10/24/07 3:15 PM	10/24/07 7:30 PM	4:15	0.42
	S5-8-L-P	10/24/07 3:15 PM	10/24/07 7:30 PM	4:15	0.43
	S6-8-R-P	10/24/07 3:25 PM	10/24/07 7:40 PM	4:15	0.43
	S6-8-L-P	10/24/07 3:25 PM	10/24/07 7:40 PM	4:15	0.44

Table A-3 (continued)
4-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
12-P	S1-12-R-P	10/24/07 7:00 PM	10/24/07 11:07 PM	4:07	0.49
	S1-12-L-P	10/24/07 7:00 PM	10/24/07 11:07 PM	4:07	0.49
	S2-12-R-P	10/24/07 7:05 PM	10/24/07 11:13 PM	4:08	0.50
	S2-12-L-P	10/24/07 7:05 PM	10/24/07 11:13 PM	4:08	0.50
	S3-12-R-P	10/24/07 7:10 PM	10/24/07 11:20 PM	4:10	0.50
	S3-12-L-P	10/24/07 7:10 PM	10/24/07 11:20 PM	4:10	0.50
	S4-12-R-P	10/24/07 7:20 PM	10/24/07 11:29 PM	4:09	0.50
	S4-12-L-P	10/24/07 7:20 PM	10/24/07 11:29 PM	4:09	0.50
	S5-12-R-P	10/24/07 7:30 PM	10/24/07 11:39 PM	4:09	0.47
	S5-12-L-P	10/24/07 7:30 PM	10/24/07 11:39 PM	4:09	0.50
	S6-12-R-P	10/24/07 7:40 PM	10/24/07 11:49 PM	4:09	0.50
	S6-12-L-P	10/24/07 7:40 PM	10/24/07 11:49 PM	4:09	0.50
	S7-12-R-P	10/24/07 8:05 PM	10/25/07 12:14AM	4:09	0.50
	S7-12-L-P-F	10/24/07 8:05 PM	10/25/07 12:14AM	4:09	0.50
16-P	S1-16-R-P	10/24/07 11:07 PM	10/25/07 3:05 AM	3:58	0.48
	S1-16-L-P	10/24/07 11:07 PM	10/25/07 3:05 AM	3:58	0.48
	S2-16-R-P	10/24/07 11:13 PM	10/25/07 3:15 AM	4:02	0.48
	S2-16-L-P	10/24/07 11:13 PM	10/25/07 3:15 AM	4:02	0.48
	S3-16-R-P	10/24/07 11:20 PM	10/25/07 3:22 AM	4:02	0.48
	S3-16-L-P	10/24/07 11:20 PM	10/25/07 3:22 AM	4:02	0.48
	S4-16-R-P	10/24/07 11:29 PM	10/25/07 3:32 AM	4:03	0.49
	S4-16-L-P	10/24/07 11:29 PM	10/25/07 3:32 AM	4:03	0.49
	S5-16-R-P	10/24/07 11:39 PM	10/25/07 3:40 AM	4:01	0.43
	S5-16-L-P	10/24/07 11:39 PM	10/25/07 3:40 AM	4:01	0.48
	S6-16-R-P	10/24/07 11:49 PM	10/25/07 3:52 AM	4:03	0.49
	S6-16-L-P	10/24/07 11:49 PM	10/25/07 3:52 AM	4:03	0.49
20-P	S1-20-R-P	10/25/07 3:05 AM	10/25/07 6:40 AM	3:35	0.43
	S1-20-L-P	10/25/07 3:05 AM	10/25/07 6:40 AM	3:35	0.43
	S2-20-R-P	10/25/07 3:15 AM	10/25/07 6:45 AM	3:30	0.42
	S2-20-L-P	10/25/07 3:15 AM	10/25/07 6:45 AM	3:30	0.42
	S3-20-R-P	10/25/07 3:22 AM	10/25/07 6:55 AM	3:33	0.43
	S3-20-L-P	10/25/07 3:22 AM	10/25/07 6:55 AM	3:33	0.43
	S4-20-R-P	10/25/07 3:32 AM	10/25/07 7:05 AM	3:33	0.43
	S4-20-L-P	10/25/07 3:32 AM	10/25/07 7:05 AM	3:33	0.43
	S5-20-R-P	10/25/07 3:40 AM	10/25/07 7:15 AM	3:35	0.43
	S5-20-L-P	10/25/07 3:40 AM	10/25/07 7:15 AM	3:35	0.41
	S6-20-R-P	10/25/07 3:52 AM	10/25/07 7:25 AM	3:33	0.43
	S6-20-L-P	10/25/07 3:52 AM	10/25/07 7:25 AM	3:33	0.43

Table A-3 (continued)
4-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
0-Q	S1-0-R-Q	10/26/07 6:55 AM	10/26/07 11:35 AM	4:40	0.56
	S1-0-L-Q	10/26/07 6:55 AM	10/26/07 11:35 AM	4:40	0.56
	S2-0-R-Q	10/26/07 7:00 AM	10/26/07 11:40 AM	4:40	0.56
	S2-0-L-Q	10/26/07 7:00 AM	10/26/07 11:40 AM	4:40	0.56
	S3-0-R-Q	10/26/07 7:05 AM	10/26/07 11:50 AM	4:45	0.57
	S3-0-L-Q	10/26/07 7:05 AM	10/26/07 11:50 AM	4:45	0.57
	S4-0-R-Q	10/26/07 7:15 AM	10/26/07 12:00 PM	4:45	0.57
	S4-0-L-Q	10/26/07 7:15 AM	10/26/07 12:00 PM	4:45	0.57
	S5-0-R-Q	10/26/07 7:30 AM	10/26/07 12:10 PM	4:40	0.56
	S5-0-L-Q	10/26/07 7:30 AM	10/26/07 12:10 PM	4:40	0.56
	S6-0-R-Q	10/26/07 7:40 AM	10/26/07 12:20 PM	4:40	0.56
	S6-0-L-Q	10/26/07 7:40 AM	10/26/07 12:20 PM	4:40	0.56
4-Q	S1-4-R-Q	10/26/07 11:35 AM	10/26/07 3:10 PM	3:35	0.43
	S1-4-L-Q	10/26/07 11:35 AM	10/26/07 3:10 PM	3:35	0.43
	S2-4-R-Q	10/26/07 11:40 AM	10/26/07 3:15 PM	3:35	0.43
	S2-4-L-Q	10/26/07 11:40 AM	10/26/07 3:15 PM	3:35	0.43
	S3-4-R-Q	10/26/07 11:50 AM	10/26/07 3:25 PM	3:35	0.43
	S3-4-L-Q	10/26/07 11:50 AM	10/26/07 3:25 PM	3:35	0.43
	S4-4-R-Q	10/26/07 12:00 PM	10/26/07 3:30 PM	3:30	0.42
	S4-4-L-Q	10/26/07 12:00 PM	10/26/07 3:30 PM	3:30	0.42
	S5-4-R-Q	10/26/07 12:10 PM	10/26/07 3:40 PM	3:30	0.42
	S5-4-L-Q	10/26/07 12:10 PM	10/26/07 3:40 PM	3:30	0.42
	S6-4-R-Q	10/26/07 12:20 PM	10/26/07 3:50 PM	3:30	0.42
	S6-4-L-Q	10/26/07 12:20 PM	10/26/07 3:50 PM	3:30	0.42
8-Q	S1-8-R-Q	10/26/07 3:10 PM	10/26/07 6:30 PM	3:20	0.40
	S1-8-L-Q	10/26/07 3:10 PM	10/26/07 6:30 PM	3:20	0.40
	S2-8-R-Q	10/26/07 3:15 PM	10/26/07 6:35 PM	3:20	0.40
	S2-8-L-Q	10/26/07 3:15 PM	10/26/07 6:35 PM	3:20	0.40
	S3-8-R-Q	10/26/07 3:25 PM	10/26/07 6:45 PM	3:20	0.40
	S3-8-L-Q	10/26/07 3:25 PM	10/26/07 6:45 PM	3:20	0.40
	S4-8-R-Q	10/26/07 3:30 PM	10/26/07 6:50 PM	3:20	0.40
	S4-8-L-Q	10/26/07 3:30 PM	10/26/07 6:50 PM	3:20	0.40
	S5-8-R-Q	10/26/07 3:40 PM	10/26/07 7:00 PM	3:20	0.40
	S5-8-L-Q	10/26/07 3:40 PM	10/26/07 7:00 PM	3:20	0.40
	S6-8-R-Q	10/26/07 3:50 PM	10/26/07 7:10 PM	3:20	0.40
	S6-8-L-Q	10/26/07 3:50 PM	10/26/07 7:10 PM	3:20	0.40

Table A-3 (continued)
4-hour Air Sample History

Date Code	Site	Start time	End time	Hours ran	Air Sampled (m^3)
12-Q	S1-12-R-Q	10/26/07 6:30 PM	10/26/07 11:07 PM	4:37	0.55
	S1-12-L-Q	10/26/07 6:30 PM	10/26/07 11:07 PM	4:37	0.55
	S2-12-R-Q	10/26/07 6:35 PM	10/26/07 11:15 PM	4:40	0.56
	S2-12-L-Q	10/26/07 6:35 PM	10/26/07 11:15 PM	4:40	0.56
	S3-12-R-Q	10/26/07 6:45 PM	10/26/07 11:23 PM	4:38	0.56
	S3-12-L-Q	10/26/07 6:45 PM	10/26/07 11:23 PM	4:38	0.56
	S4-12-R-Q	10/26/07 6:50 PM	10/26/07 11:33 PM	4:43	0.57
	S4-12-L-Q	10/26/07 6:50 PM	10/26/07 11:33 PM	4:43	0.57
	S5-12-R-Q	10/26/07 7:00 PM	10/26/07 11:43 PM	4:43	0.57
	S5-12-L-Q	10/26/07 7:00 PM	10/26/07 11:43 PM	4:43	0.57
	S6-12-R-Q	10/26/07 7:10 PM	10/26/07 11:53 PM	4:43	0.57
	S6-12-L-Q	10/26/07 7:10 PM	10/26/07 11:53 PM	4:43	0.57
16-Q	S1-16-R-Q	10/26/07 11:07 PM	10/27/07 3:05 AM	3:58	0.48
	S1-16-L-Q	10/26/07 11:07 PM	10/27/07 3:05 AM	3:58	0.48
	S2-16-R-Q	10/26/07 11:15 PM	10/27/07 3:15 AM	4:00	0.48
	S2-16-L-Q	10/26/07 11:15 PM	10/27/07 3:15 AM	4:00	0.48
	S3-16-R-Q	10/26/07 11:23 PM	10/27/07 3:26 AM	4:03	0.49
	S3-16-L-Q	10/26/07 11:23 PM	10/27/07 3:26 AM	4:03	0.49
	S4-16-R-Q	10/26/07 11:33 PM	10/27/07 3:35 AM	4:02	0.48
	S4-16-L-Q	10/26/07 11:33 PM	10/27/07 3:35 AM	4:02	0.48
	S5-16-R-Q	10/26/07 11:43 PM	10/27/07 3:45 AM	4:02	0.48
	S5-16-L-Q	10/26/07 11:43 PM	10/27/07 3:45 AM	4:02	0.48
	S6-16-R-Q	10/26/07 11:53 PM	10/27/07 3:55 AM	4:02	0.48
	S6-16-L-Q	10/26/07 11:53 PM	10/27/07 3:55 AM	4:02	0.48
20-Q	S1-20-R-Q	10/27/07 3:05 AM	10/27/07 6:40 AM	3:35	0.43
	S1-20-L-Q	10/27/07 3:05 AM	10/27/07 6:40 AM	3:35	0.43
	S2-20-R-Q	10/27/07 3:15 AM	10/27/07 6:45 AM	3:30	0.42
	S2-20-L-Q	10/27/07 3:15 AM	10/27/07 6:45 AM	3:30	0.42
	S3-20-R-Q	10/27/07 3:26 AM	10/27/07 6:50 AM	3:24	0.41
	S3-20-L-Q	10/27/07 3:26 AM	10/27/07 6:50 AM	3:24	0.41
	S4-20-R-Q	10/27/07 3:35 AM	10/27/07 7:00 AM	3:25	0.41
	S4-20-L-Q	10/27/07 3:35 AM	10/27/07 7:00 AM	3:25	0.41
	S5-20-R-Q	10/27/07 3:45 AM	10/27/07 7:10 AM	3:25	0.41
	S5-20-L-Q	10/27/07 3:45 AM	10/27/07 7:10 AM	3:25	0.41
	S6-20-R-Q	10/27/07 3:55 AM	10/27/07 7:20 AM	3:25	0.41
	S6-20-L-Q	10/27/07 3:55 AM	10/27/07 7:20 AM	3:25	0.41

APPENDIX C: WEATHER DATA

Hourly Data Report
Data Extracted: 2008-03-20
Station: CBC Pasco
Lat: 46.3 Lng: 119.1 Elevation: 404
Date Range from 2007-9-17 to 2007-11-3

Date	Hour	AirTemp (C)	RH (%)	Wind Speed (m/s)	WindDir (Degree)	SolarRad (W/m 2)	Precip (mm)	Soil Temp 8 (C)
2007-09-17	0	14.36	77.66	1.61	239.32	0	0	25.58
2007-09-17	1	13.82	78.82	0.95	233.07	0	0	25.46
2007-09-17	2	13.28	81.25	0.98	204.25	0	0	25.38
2007-09-17	3	13.01	83.24	0.98	227.03	0	0	25.07
2007-09-17	4	13.22	83.49	0.36	186.35	0	0	24.88
2007-09-17	5	13.63	80.34	0.67	199.38	0	0	24.62
2007-09-17	6	14.06	80.9	0.89	245.88	41.71	0	24.42
2007-09-17	7	16.13	73.5	1.37	208.31	170.4	0	24.26
2007-09-17	8	16.72	73.42	1.78	217.7	243.02	0	24.07
2007-09-17	9	18.24	67.3	2.62	243.96	390.03	0	23.9
2007-09-17	10	19.3	63.76	2.45	228.53	493.27	0	23.74
2007-09-17	11	21.68	48.45	1.92	227.66	658.16	0	23.74
2007-09-17	12	22.93	43.27	2.06	219.49	582.83	0	23.74
2007-09-17	13	22.68	43.68	1.54	237.87	402.38	0	23.87
2007-09-17	14	24.3	34.85	2.65	251.37	431.27	0	24.1
2007-09-17	15	24.64	31.8	3.34	237.34	425.53	0	24.39
2007-09-17	16	23.8	32.96	3.63	236.52	244.38	0	24.57
2007-09-17	17	22.1	37.85	3.06	239.78	43.79	0	24.86
2007-09-17	18	20.47	46.13	2.99	263.52	0.08	0	25.06
2007-09-17	19	19.43	50.34	2.06	256.67	0	0	25.3
2007-09-17	20	18.04	49.58	1.31	335.74	0	0	25.36
2007-09-17	21	17.32	50.64	2.81	310.49	0	0	25.32
2007-09-17	22	15.36	62.13	0.64	210.07	0	0	25.25
2007-09-17	23	14.04	69.05	0.7	202.01	0	0	25
2007-09-18	0	14.42	65.5	1.62	237.33	0	0	24.93
2007-09-18	1	14.02	64.33	2.03	246.41	0	0	24.71
2007-09-18	2	13.1	66.01	2.38	242.05	0	0	24.52
2007-09-18	3	12.45	67.74	2.15	247.05	0	0	24.41
2007-09-18	4	12.48	62.08	2.49	246.37	0	0	24.22
2007-09-18	5	12.18	58.93	2.68	240.63	0	0	24.06
2007-09-18	6	11.49	62.27	1.58	238.69	8.8	0	23.86
2007-09-18	7	12.29	61.07	1.25	263.95	208.09	0	23.69
2007-09-18	8	13.97	54.53	2.33	236.81	412.29	0	23.51
2007-09-18	9	14.87	50.16	3.13	227.13	562.71	0	23.22
2007-09-18	10	16.46	43.6	2.64	247.99	651.66	0	23.11
2007-09-18	11	18.1	39.4	2.84	244.39	662.38	0	23.08
2007-09-18	12	19.11	37.16	3.55	249.56	651.31	0	23.13
2007-09-18	13	20.23	34.75	3.1	246.26	692.12	0	23.35
2007-09-18	14	20.33	34.92	3.13	231.33	491.06	0	23.67

2007-09-18	15	20.96	33.2	2.55	250.44	395.11	0	23.97
2007-09-18	16	20.16	34.51	2.43	230.01	219.25	0	24.29
2007-09-18	17	18.7	38.47	2.22	235.3	42.71	0	24.48
2007-09-18	18	16.51	49.09	2.63	246.37	0.01	0	24.69
2007-09-18	19	15.2	53.13	2.16	264.94	0	0	24.9
2007-09-18	20	14.32	56.12	0.91	246.46	0	0	24.92
2007-09-18	21	14.05	58.25	0.66	173.53	0	0	24.86
2007-09-18	22	13.49	61.2	0.49	154.91	0	0	24.69
2007-09-18	23	12.25	73.09	0.94	81.52	0	0	24.54
2007-09-19	0	11.24	77.37	0.54	193.77	0	0	24.41
2007-09-19	1	10.81	78.24	0.3	113.54	0	0	24.27
2007-09-19	2	9.28	84.8	0.47	131.29	0	0	24.08
2007-09-19	3	8.06	90.37	0.78	78.52	0	0	23.91
2007-09-19	4	6.5	94.69	0.65	49.2	0	0	23.7
2007-09-19	5	5.47	96.69	1.24	28	0	0	23.47
2007-09-19	6	6.29	92.95	1.11	22.87	26.37	0	23.2
2007-09-19	7	7.87	86.48	1.31	187.8	159.44	0	23.04
2007-09-19	8	10.39	73.7	1.78	182.67	373.28	0	22.87
2007-09-19	9	13.4	61.85	2.49	95.4	507.85	0	22.62
2007-09-19	10	15.54	58.23	2.47	177.65	571.76	0	22.38
2007-09-19	11	18.86	51.19	3.88	11.87	546.48	0	22.35
2007-09-19	12	21.38	41.31	5.23	13.29	664.3	0	22.35
2007-09-19	13	22.63	34.38	4.98	18.11	626.08	0	22.51
2007-09-19	14	23.12	31.68	5.28	11.21	537.88	0	22.74
2007-09-19	15	22.96	30.95	4.79	9.9	391.57	0	23.01
2007-09-19	16	22.28	31.98	3.89	6.91	232.12	0	23.15
2007-09-19	17	21.12	34.43	2.92	353.13	68.96	0	23.47
2007-09-19	18	19.52	36.22	2.86	349.79	0.37	0	23.65
2007-09-19	19	15.15	52.98	1.7	47.32	0	0	23.74
2007-09-19	20	13.88	57.16	1.09	185.35	0	0	23.74
2007-09-19	21	12.71	64.81	0	260.29	0	0	23.74
2007-09-19	22	10.86	70.48	0.06	335.53	0	0	23.72
2007-09-19	23	10.88	66.03	0.38	300.51	0	0	23.64
2007-09-20	0	8.59	81.81	0.31	112.76	0	0	23.44
2007-09-20	1	8.06	81.45	0.51	126.12	0	0	23.22
2007-09-20	2	7.01	84.98	0.49	81.4	0	0	23.08
2007-09-20	3	5.88	89.15	0.46	71.08	0	0	22.92
2007-09-20	4	6.17	87.56	0.43	120.44	0	0	22.67
2007-09-20	5	6.28	91.67	0.68	117.57	0	0	22.35
2007-09-20	6	6.29	91.39	0.51	67.42	57.2	0	22.15
2007-09-20	7	11.55	72.98	1.16	151.21	204.11	0	21.96
2007-09-20	8	15.62	50.78	2.62	207.16	348.32	0	21.79
2007-09-20	9	17.34	44.11	2.77	232.64	346.46	0	21.6
2007-09-20	10	19.28	39.84	3.75	241.66	451.9	0	21.44
2007-09-20	11	20.32	35.41	4.09	252.87	240.47	0	21.42
2007-09-20	12	21.24	32.36	4.31	244.89	252.57	0	21.44
2007-09-20	13	22.1	27.67	3.37	245.37	145.73	0	21.58
2007-09-20	14	22.92	30.2	3.06	276.65	183.18	0	21.78
2007-09-20	15	21.5	39.71	3.02	97.15	272.02	1.016	21.83
2007-09-20	16	21.1	41.11	1.4	102.73	130.56	1.016	22

2007-09-20	17	20.01	41.52	3.26	258.4	30.31	0	22.12
2007-09-20	18	18.49	44.16	3.1	337.23	0.1	0	22.12
2007-09-20	19	17.01	48.98	2.53	321.33	0	0	22.13
2007-09-20	20	16.02	53.4	2.68	344.07	0	0	22.12
2007-09-20	21	14.89	58.51	2.32	299.64	0	0	22.12
2007-09-20	22	13	67.36	1.06	22.92	0	0	22
2007-09-20	23	11.7	73.26	1	54.93	0	0	21.83
2007-09-21	0	10.12	79.98	0.56	193.43	0	0	21.77
2007-09-21	1	9.21	83.2	0.32	91.81	0	0	21.57
2007-09-21	2	7.8	88.26	0.42	40.34	0	0	21.39
2007-09-21	3	6.61	93.57	0.75	69.29	0	0	21.13
2007-09-21	4	5.87	97.78	0.27	49.64	0	0	20.97
2007-09-21	5	4.84	99.09	0.47	54.8	0	0	20.8
2007-09-21	6	4.74	98.3	0.47	41.4	36.96	0	20.51
2007-09-21	7	7.4	91.9	0.79	52.54	211.33	0	20.3
2007-09-21	8	11.95	78.35	1.01	96.99	386.38	0	20.08
2007-09-21	9	15.55	60.65	0.47	139.84	519.82	0	19.93
2007-09-21	10	18.09	51.32	0.93	144.57	618.36	0	19.85
2007-09-21	11	20.12	45.29	1.05	154.86	672.81	0	19.85
2007-09-21	12	21.52	40.5	1.24	314.09	672.84	0	19.91
2007-09-21	13	22.99	34.78	1.43	223.75	623.95	0	20.1
2007-09-21	14	23.94	32.5	1.06	195.8	525.34	0	20.48
2007-09-21	15	24.02	32.77	1.27	165.25	389.87	0	20.93
2007-09-21	16	23.78	33.02	1.55	170.75	232.95	0	21.3
2007-09-21	17	22.91	33.54	1.06	171.97	70.07	0	21.64
2007-09-21	18	20.45	41.82	0.33	171.56	0.03	0	21.84
2007-09-21	19	18.2	49.98	0.3	133.59	0	0	22.02
2007-09-21	20	15.37	61.61	0.16	92.97	0	0	22.12
2007-09-21	21	13.63	69.2	0.29	91	0	0	22.12
2007-09-21	22	11.71	77.31	0.76	65.6	0	0	22.1
2007-09-21	23	12.07	76.03	0.21	94.46	0	0	21.95
2007-09-22	0	10.67	82.41	0.44	85.51	0	0	21.81
2007-09-22	1	9.38	88.24	0.64	85.28	0	0	21.75
2007-09-22	2	9.09	89.19	0.63	77.04	0	0	21.56
2007-09-22	3	8.9	90.68	0.52	56.54	0	0	21.39
2007-09-22	4	9.07	89.41	0.39	105.27	0	0	21.15
2007-09-22	5	8.42	92.05	0.68	81.3	0	0	21.01
2007-09-22	6	8.91	90.82	0.27	78.02	46.08	0	20.85
2007-09-22	7	14.58	66.92	1.06	182.02	238.59	0	20.73
2007-09-22	8	17.69	48.9	1.77	319.59	374.08	0	20.46
2007-09-22	9	18.88	41.16	3.15	267.12	476.45	0	20.32
2007-09-22	10	19.5	41.43	1.47	19.9	515.48	0	20.22
2007-09-22	11	20.66	41.24	1.42	187.19	560.76	0	20.24
2007-09-22	12	21.15	34.89	2.5	185.09	540.71	0	20.4
2007-09-22	13	21.34	27.94	3	19.59	441.96	0	20.68
2007-09-22	14	21.41	28.49	2.2	33.27	395.49	0	20.96
2007-09-22	15	21.18	28.98	1.34	47.87	245.86	0	21.24
2007-09-22	16	21.01	27.55	0.99	263.39	155.37	0	21.51
2007-09-22	17	19.87	31.7	1.56	254.47	45.16	0	21.79
2007-09-22	18	18.06	35.88	4.02	337.84	0.29	0	21.89

2007-09-22	19	16.57	39.78	4	342.61	0	0	22.04
2007-09-22	20	15.77	41.61	4.18	332.98	0	0	22.12
2007-09-22	21	14.93	43.17	3.08	329.79	0	0	22.12
2007-09-22	22	14.18	45.08	3.23	327.05	0	0	22.04
2007-09-22	23	13.79	47.1	2.48	320.53	0	0	21.93
2007-09-23	0	13.16	48.74	2.36	334.7	0	0	21.81
2007-09-23	1	12.42	51.34	2.49	325.27	0	0	21.76
2007-09-23	2	11.18	56.18	1.95	318.7	0	0	21.58
2007-09-23	3	11.15	54.25	1.53	324.65	0	0	21.42
2007-09-23	4	9.59	60.48	0.48	161.38	0	0	21.21
2007-09-23	5	6.9	71.02	0.27	151.4	0	0	21.03
2007-09-23	6	7.46	72.57	0.57	193.22	45.18	0	20.85
2007-09-23	7	11.35	57.68	1.13	246.48	232.91	0	20.69
2007-09-23	8	14.08	47.69	1.62	269.05	369.47	0	20.43
2007-09-23	9	16.22	41.27	2.78	291.68	538.36	0	20.22
2007-09-23	10	18.09	35.76	3.12	283.67	639.75	0	20.09
2007-09-23	11	19.45	30.83	3.01	296.99	699.68	0	20.07
2007-09-23	12	20.56	28.51	2.89	297.3	689.94	0	20.21
2007-09-23	13	21.11	26.66	3.08	272.82	647.63	0	20.52
2007-09-23	14	21.45	26.23	3.39	272.31	459.62	0	20.92
2007-09-23	15	21.63	26.69	2.52	262.76	401.32	0	21.28
2007-09-23	16	21.31	29.01	2.71	255.16	227.72	0	21.69
2007-09-23	17	19.91	33.26	2.2	242.45	63.73	0	21.96
2007-09-23	18	17.86	42.41	2.16	244.04	0	0	22.14
2007-09-23	19	16.79	47.41	2.74	249.76	0	0	22.32
2007-09-23	20	14.91	55.85	1.53	285.3	0	0	22.36
2007-09-23	21	12.47	64.58	0.37	194.24	0	0	22.36
2007-09-23	22	11.85	69.03	0.54	169.22	0	0	22.26
2007-09-23	23	9.94	75.09	0.51	254.67	0	0	22.14
2007-09-24	0	9.63	70.36	0.39	119.01	0	0	22.06
2007-09-24	1	7.87	76.01	0.17	64.32	0	0	21.85
2007-09-24	2	5.96	84.63	0.34	72.59	0	0	21.7
2007-09-24	3	4.45	92.28	0.77	67.19	0	0	21.45
2007-09-24	4	3.89	94.19	0.98	56.06	0	0	21.16
2007-09-24	5	3.3	96.12	0.59	60.48	0	0	20.95
2007-09-24	6	3.6	95.56	0.75	57.1	46.02	0	20.71
2007-09-24	7	6.58	86.48	0.96	57.68	210.58	0	20.44
2007-09-24	8	11.23	67.01	0.58	80.52	378.45	0	20.18
2007-09-24	9	14.74	51.75	0.48	170.57	521.63	0	19.98
2007-09-24	10	16.73	46.66	0.86	216.18	622.24	0	19.86
2007-09-24	11	18.24	40.79	0.97	177.87	675.7	0	19.85
2007-09-24	12	19.57	36.37	1.31	213.04	674.79	0	19.88
2007-09-24	13	20.65	34.25	1.14	231.53	619.25	0	20.06
2007-09-24	14	21.4	32.48	1.16	160.02	520.22	0	20.42
2007-09-24	15	21.67	30.79	1.08	202.95	380.81	0	20.89
2007-09-24	16	21.64	28.66	1.1	175.65	224.34	0	21.24
2007-09-24	17	20.43	30.06	1.02	172.51	58.27	0	21.56
2007-09-24	18	18.26	38.51	0.83	190.37	0	0	21.8
2007-09-24	19	15.97	43.36	0.53	156.09	0	0	21.92
2007-09-24	20	13.44	50.16	0.45	180.64	0	0	21.96

2007-09-24	21	11.69	58.11	0.04	181.21	0	0	21.96
2007-09-24	22	8.47	75.92	0.75	84.94	0	0	21.88
2007-09-24	23	8.03	78.9	0.76	86.11	0	0	21.79
2007-09-25	0	6.73	83.64	0.94	76.14	0	0	21.65
2007-09-25	1	6.84	81	0.25	78.97	0	0	21.44
2007-09-25	2	6.9	78	0.56	106.37	0	0	21.18
2007-09-25	3	5.55	83.44	0.42	62.01	0	0	20.99
2007-09-25	4	5.5	84.58	0.49	96.03	0	0	20.81
2007-09-25	5	4.78	89.18	0.62	67.05	0	0	20.52
2007-09-25	6	5.96	87.88	0.44	158.15	37.95	0	20.3
2007-09-25	7	9.99	75.2	0.73	49.21	202.43	0	20.06
2007-09-25	8	15.62	56.97	1.92	213.95	371.73	0	19.9
2007-09-25	9	18.01	44.93	2.67	237.19	512.45	0	19.73
2007-09-25	10	19.61	37.04	2.75	238.71	612.45	0	19.69
2007-09-25	11	21.05	32.73	3.09	249.1	665.06	0	19.69
2007-09-25	12	22.49	30.78	2.6	238.75	659.78	0	19.73
2007-09-25	13	23.78	27.19	2.47	251.76	607.51	0	19.93
2007-09-25	14	24.6	27.16	2.05	244.32	510.75	0	20.28
2007-09-25	15	25.18	27.44	2.11	248.35	377.27	0	20.79
2007-09-25	16	24.89	28.02	2.06	251.73	211.89	0	21.19
2007-09-25	17	23.61	31.24	1.59	251.29	43.72	0	21.53
2007-09-25	18	20.8	40.69	0.95	287.66	0	0	21.8
2007-09-25	19	18.5	45.59	1.56	187.32	0	0	21.97
2007-09-25	20	16.33	52.37	0.83	176.53	0	0	22.12
2007-09-25	21	16.09	51.76	0.73	301.21	0	0	22.12
2007-09-25	22	15.08	55.23	1.29	279.9	0	0	22.12
2007-09-25	23	13.59	61.28	1.48	122.48	0	0	22.01
2007-09-26	0	11.65	71.25	0.6	244.92	0	0	21.87
2007-09-26	1	10.39	76.45	0.76	87.05	0	0	21.79
2007-09-26	2	8.05	85.2	0.52	63.66	0	0	21.64
2007-09-26	3	7.24	89.4	0.43	66.66	0	0	21.44
2007-09-26	4	6.63	92.21	0.38	72.79	0	0	21.21
2007-09-26	5	6.2	97.56	0.33	75.47	0	0	21.01
2007-09-26	6	6.68	97.38	0.3	55.11	30.84	0	20.83
2007-09-26	7	9.73	89.06	0.41	71.54	162.47	0	20.6
2007-09-26	8	15.04	67.07	1.7	211.81	369.4	0	20.37
2007-09-26	9	17.9	54.09	1.83	234.75	505.43	0	20.17
2007-09-26	10	19.79	46.23	1.69	240.3	603.3	0	20.02
2007-09-26	11	21.25	42.12	1.65	223.63	652.24	0	20
2007-09-26	12	22.81	37.82	2.02	230.03	651.53	0	20.12
2007-09-26	13	24.3	33.82	1.22	226.82	597.06	0	20.36
2007-09-26	14	25.08	31.99	1.27	167.21	496.7	0	20.79
2007-09-26	15	25.45	30.46	0.78	163.67	359.37	0	21.15
2007-09-26	16	24.77	33.1	1.49	140.85	200.94	0	21.52
2007-09-26	17	23.71	35.43	0.93	161.07	45.05	0	21.83
2007-09-26	18	21.6	40.6	0.58	161.26	0	0	22.08
2007-09-26	19	17.57	55.03	0.75	83.95	0	0	22.18
2007-09-26	20	14.78	66.81	0.41	62.87	0	0	22.33
2007-09-26	21	12.97	71.34	0.53	68.34	0	0	22.35
2007-09-26	22	11.68	77.8	0.65	74.35	0	0	22.26

2007-09-26	23	10.69	81.63	0.22	43.22	0	0	22.15
2007-09-27	0	10.4	81.22	0.21	111.17	0	0	22.12
2007-09-27	1	8.68	90.77	0.67	72.94	0	0	21.92
2007-09-27	2	8.26	92.47	0.67	70.26	0	0	21.79
2007-09-27	3	7.51	91.93	0.36	50.84	0	0	21.63
2007-09-27	4	7.2	90.95	0.29	121.86	0	0	21.4
2007-09-27	5	6.46	92.93	0.81	73.41	0	0	21.14
2007-09-27	6	6.57	92.58	0.29	50.07	45.05	0	20.97
2007-09-27	7	9.14	81.79	0.9	44.01	171.71	0	20.8
2007-09-27	8	11.17	75.72	1.24	95.5	269.96	0	20.54
2007-09-27	9	14.16	58.31	1.01	245.46	501.34	0	20.35
2007-09-27	10	17.05	51.34	1	29.08	580.58	0	20.21
2007-09-27	11	19.68	46.39	1.11	67.22	650.5	0	20.12
2007-09-27	12	21.56	42.1	0.93	93.4	531.39	0	20.21
2007-09-27	13	23.05	41.46	0.84	260.29	523.91	0	20.38
2007-09-27	14	24.37	37.33	0.97	161.02	501.67	0	20.74
2007-09-27	15	25.57	33.98	0.5	119.26	357.27	0	21.01
2007-09-27	16	25.68	36.1	0.9	40.73	194.52	0	21.37
2007-09-27	17	23.9	39.2	0.99	123.4	38.97	0	21.64
2007-09-27	18	21.19	44.82	1.04	193.76	0	0	21.82
2007-09-27	19	19.99	46.99	0.46	132.44	0	0	21.99
2007-09-27	20	20.23	38.05	1.53	261.65	0	0	22.12
2007-09-27	21	19.86	36.27	1.71	240.88	0	0	22.12
2007-09-27	22	18.54	48.25	1.45	229.51	0	0	22.12
2007-09-27	23	18.76	49.84	2.3	259.35	0	0	22.02
2007-09-28	0	18.19	54.43	2.83	247.03	0	0	21.93
2007-09-28	1	18.57	55.21	3.23	252.54	0	0	21.81
2007-09-28	2	17.68	59.78	2.79	249.04	0	0	21.8
2007-09-28	3	17.18	61.86	2.38	244.58	0	0	21.72
2007-09-28	4	16.44	63.42	2.02	320.1	0	0	21.57
2007-09-28	5	14.81	60.86	1.66	263.34	0	0	21.46
2007-09-28	6	14.22	53.64	2.65	340.32	3.76	0	21.41
2007-09-28	7	14.04	56.12	4.24	331.93	23.72	0	21.32
2007-09-28	8	11.59	85.09	2.09	332.15	11.49	0.762	21.12
2007-09-28	9	10.51	94.7	1.23	286.94	38.59	2.286	21.04
2007-09-28	10	10.28	96.34	1.63	254.93	60.49	1.27	21
2007-09-28	11	10.39	90.93	2.45	231.7	93.19	0.508	20.88
2007-09-28	12	11.23	83.1	3.13	204.79	148.18	0	20.78
2007-09-28	13	12.81	72.74	2.67	225.12	267.38	0	20.62
2007-09-28	14	14.7	58.42	2.94	242.77	303.25	0	20.45
2007-09-28	15	15.99	49.57	3.03	251.72	307.82	0	20.41
2007-09-28	16	16.18	45.55	3.65	251.68	211.48	0	20.25
2007-09-28	17	15.2	49.73	2.96	250.36	38.95	0	20.25
2007-09-28	18	13.85	49.19	2.66	344.11	0	0	20.24
2007-09-28	19	11.9	56.05	1.52	322.38	0	0	20.21
2007-09-28	20	11.17	51.7	1.59	292.77	0	0	20.08
2007-09-28	21	9.56	58.97	1.12	295.56	0	0	19.96
2007-09-28	22	8.77	63.21	0.99	238.93	0	0	19.82
2007-09-28	23	8.2	67.04	0.92	242.51	0	0	19.64
2007-09-29	0	7.43	72.07	1.52	259.21	0	0	19.39

2007-09-29	1	7.4	70.86	1.51	265.63	0	0	19.11
2007-09-29	2	7.9	66.48	1.61	263.11	0	0	18.9
2007-09-29	3	4	88.23	0.45	149.47	0	0	18.66
2007-09-29	4	3.86	90.66	0.43	79.75	0	0	18.34
2007-09-29	5	5.85	80.28	0.79	91.08	0	0	18.05
2007-09-29	6	6.35	80.19	0.74	130.76	56.78	0	17.83
2007-09-29	7	8.35	78.44	1.63	227.8	198.31	0	17.64
2007-09-29	8	10.55	67.01	1.7	217.9	320.28	0	17.4
2007-09-29	9	12.34	58.95	2.13	212.2	515.13	0	17.13
2007-09-29	10	13.81	53.62	2.47	213.4	622.95	0	17.03
2007-09-29	11	14.9	48.16	2.65	214.07	669.31	0	17.05
2007-09-29	12	15.84	44.44	3.02	227.57	623.95	0	17.34
2007-09-29	13	16.83	39.8	2.74	227.67	572.46	0	17.63
2007-09-29	14	17.59	37.12	3.04	230.1	493.12	0	17.91
2007-09-29	15	17.75	34.68	3.39	239.73	291.89	0	18.33
2007-09-29	16	16.8	38.66	3.09	232.72	89.5	0	18.7
2007-09-29	17	16.1	40.92	2.39	249.08	18.94	0	18.9
2007-09-29	18	15.29	44.82	1.45	228.69	0	0	18.98
2007-09-29	19	14.83	47.37	1.29	205.37	0	0	18.99
2007-09-29	20	14.12	50.18	0.87	237.4	0	0	18.99
2007-09-29	21	12.74	56.74	0.82	223.95	0	0	18.98
2007-09-29	22	11.52	63.06	0.73	219.89	0	0	18.98
2007-09-29	23	10.94	68.88	0.71	171.6	0	0	18.87
2007-09-30	0	10.88	75.55	0.73	172.29	0	0	18.77
2007-09-30	1	10.38	81.66	0.3	44.61	0	0	18.66
2007-09-30	2	9.73	88.14	0.74	32.63	0	0	18.5
2007-09-30	3	10.15	84.21	0.84	101.74	0	0	18.29
2007-09-30	4	10.65	78.74	0.72	110.03	0	0	18.16
2007-09-30	5	10.28	79.79	0.72	107.03	0	0	18.02
2007-09-30	6	10.7	78.4	0.27	147.74	6.23	0	17.96
2007-09-30	7	11.01	77.76	0.59	147.61	37.02	0	17.88
2007-09-30	8	11.12	80.46	0.8	100.91	80.01	0	17.78
2007-09-30	9	11.42	81.47	1	87.45	103.94	0	17.73
2007-09-30	10	12.35	76.61	1.35	41.44	148.4	0	17.72
2007-09-30	11	13.46	71.43	1.49	263.68	168.81	0	17.71
2007-09-30	12	13.85	68.15	1.64	343.55	152.28	0	17.71
2007-09-30	13	14.17	65.38	1.27	36.85	160.64	0	17.73
2007-09-30	14	14.33	65.87	0.76	63.18	83.07	0	17.73
2007-09-30	15	13.92	74.38	0.54	174.45	48.88	0.254	17.78
2007-09-30	16	13.18	82.98	0.77	161.94	16.81	0.254	17.87
2007-09-30	17	12.57	92.64	1.17	148.73	0.05	1.27	17.87
2007-09-30	18	12.43	96.13	0.37	133.17	0	1.524	17.93
2007-09-30	19	12.24	99.66	0.44	124.85	0	3.302	17.89
2007-09-30	20	12.37	99.97	0.99	166.14	0	1.016	17.87
2007-09-30	21	12.28	100	1.06	152.25	0	0.254	17.77
2007-09-30	22	12.18	100	0.28	159.77	0	0	17.71
2007-09-30	23	11.91	99.33	0.8	214.23	0	0	17.58
2007-10-01	0	11.55	96.95	1	235.23	0	0	17.48
2007-10-01	1	11.18	96.16	1.55	224.31	0	0	17.38
2007-10-01	2	11.16	94.3	2.45	228.03	0	0	17.26

2007-10-01	3	11.68	86.44	3.32	243.45	0	0	17.07
2007-10-01	4	11.65	82.57	3.56	264.17	0	0	16.98
2007-10-01	5	10.29	88.01	1.29	167.42	0	0	16.88
2007-10-01	6	10.73	85	1.78	262.64	7.59	0	16.77
2007-10-01	7	12.03	79.45	3.24	262.35	177.01	0	16.55
2007-10-01	8	13.02	77.17	4.11	253.53	342.69	0	16.4
2007-10-01	9	14.53	68.83	4.41	260.42	476.27	0	16.28
2007-10-01	10	15.95	60.37	4.25	269.83	424.43	0	16.29
2007-10-01	11	16.88	51.68	3.2	289.54	351.34	0	16.48
2007-10-01	12	17.98	47.98	3.97	272.31	368.99	0	16.81
2007-10-01	13	19.01	44.24	4.35	265.88	379.84	0	17.03
2007-10-01	14	19.61	44.37	4.79	258.27	444.5	0	17.41
2007-10-01	15	19.47	44.5	4.92	256.48	316.69	0	17.68
2007-10-01	16	18.59	47.37	5.14	253.75	154.39	0	17.86
2007-10-01	17	17.16	51.46	4.36	256.34	14.02	0	17.99
2007-10-01	18	15.54	57.49	3.93	253.65	0	0	18
2007-10-01	19	15	58.55	3.97	263.26	0	0	18
2007-10-01	20	14.21	62.38	3.04	259.56	0	0	17.93
2007-10-01	21	13.72	67.25	3.11	238.79	0	0	17.81
2007-10-01	22	13.59	71.31	3.95	246.11	0	0	17.71
2007-10-01	23	13.74	68.9	3.66	239.48	0	0	17.57
2007-10-02	0	13.46	69.65	3.86	232.05	0	0	17.47
2007-10-02	1	13.66	68.12	3.14	235.93	0	0	17.28
2007-10-02	2	13.4	69.84	3.46	232.23	0	0	17.06
2007-10-02	3	13.68	67.89	3.68	246.81	0	0	16.99
2007-10-02	4	13.24	69.15	2.42	236.46	0	0	16.93
2007-10-02	5	13.06	68.08	2.69	230.22	0	0	16.86
2007-10-02	6	13.4	65.89	3.58	227.55	12.94	0	16.79
2007-10-02	7	13.49	64.84	4.04	227.65	37.41	0	16.58
2007-10-02	8	13.83	61.98	4.42	234.66	103.01	0	16.52
2007-10-02	9	14.85	57.4	4.1	228.6	249.43	0	16.42
2007-10-02	10	15.55	53.54	5.16	233.01	242.28	0	16.35
2007-10-02	11	16.14	52.28	3.24	241.76	194.83	0	16.4
2007-10-02	12	16.83	50.99	2.91	238.74	178.47	0	16.52
2007-10-02	13	17.66	48.5	3.45	247.98	132.9	0	16.63
2007-10-02	14	17.88	47.94	1.8	233.51	61.79	0	16.83
2007-10-02	15	17.93	47.85	1.66	264.91	40.31	0	16.92
2007-10-02	16	17.72	51.01	2.94	270.32	40.04	0	16.96
2007-10-02	17	17.24	53.82	3.99	262.58	16.27	0	17.02
2007-10-02	18	16.81	55.54	3.13	258.2	0	0	17.05
2007-10-02	19	16.48	57.55	2.95	265.4	0	0	17.06
2007-10-02	20	15.74	63.83	3.81	279.95	0	0	17.05
2007-10-02	21	14.24	77.24	3.35	290.14	0	0	17.02
2007-10-02	22	12.9	85.21	1.35	283.66	0	0.254	16.99
2007-10-02	23	13.61	69.86	3.38	250.71	0	0	16.94
2007-10-03	0	13.47	71.23	3.54	268.78	0	0	16.93
2007-10-03	1	13.17	73.19	5.04	253.11	0	0	16.89
2007-10-03	2	12.67	71.4	3.96	255.27	0	0	16.82
2007-10-03	3	11.59	73.24	2.26	307.67	0	0	16.7
2007-10-03	4	11.29	74.08	3.15	261.83	0	0	16.55

2007-10-03	5	11.03	75.03	2.97	286.21	0	0	16.45
2007-10-03	6	10.64	76.03	3.58	281	19.85	0	16.29
2007-10-03	7	11.34	71.76	3.34	281.76	164.26	0	16.14
2007-10-03	8	12.91	63.13	2.61	261.72	326.83	0	16.04
2007-10-03	9	14.2	58.26	3.64	256.63	464.62	0	15.99
2007-10-03	10	15.32	50.3	4.12	254.97	541.25	0	16.01
2007-10-03	11	16.49	44.82	4.74	252.1	641.18	0	16.12
2007-10-03	12	16.97	43.15	4.79	255.37	526.92	0	16.46
2007-10-03	13	16.1	42.54	5.41	258.36	258.71	0	16.92
2007-10-03	14	16.84	39.8	4.7	257.78	315.91	0	17.41
2007-10-03	15	16.07	44.28	4.07	251.91	115.22	0	17.75
2007-10-03	16	15.45	48.53	4.22	244.01	131.97	0	17.94
2007-10-03	17	14.49	50.5	4.33	242.06	9.16	0	18.02
2007-10-03	18	13.38	52.79	3.58	246.78	0	0	18.07
2007-10-03	19	12.32	57.55	2.88	224.32	0	0	18.03
2007-10-03	20	11.69	57.9	1.96	247.47	0	0	17.97
2007-10-03	21	10.3	66.87	1.76	234.67	0	0	17.83
2007-10-03	22	9.38	71.21	1.56	227.71	0	0	17.71
2007-10-03	23	9.33	73.23	2.45	227.71	0	0	17.51
2007-10-04	0	9.33	72.1	2.43	248.6	0	0	17.28
2007-10-04	1	9.35	72.29	1.43	216.02	0	0	17.02
2007-10-04	2	9.84	70.34	1.07	204.97	0	0	16.88
2007-10-04	3	8.99	75.4	1.39	147.26	0	0	16.69
2007-10-04	4	9.05	74.44	1.19	209.36	0	0	16.5
2007-10-04	5	8.68	76.5	1.96	200.59	0	0	16.32
2007-10-04	6	8.97	74.48	2.26	201.56	12.26	0	16.15
2007-10-04	7	9.35	72.93	0.99	160.4	96.73	0	16.04
2007-10-04	8	10.15	70.76	1.26	249.32	182.03	0	15.89
2007-10-04	9	12.02	62.01	1.83	228.42	426.41	0	15.84
2007-10-04	10	13.35	53.91	2.1	267.39	431.5	0	15.8
2007-10-04	11	14.52	47.07	2.74	296.88	580.28	0	15.87
2007-10-04	12	14.96	44.9	2	285.11	593.3	0	16.08
2007-10-04	13	15.28	42.96	1.58	318.75	476.48	0	16.49
2007-10-04	14	15.54	42.74	1.57	111.59	428.34	0	16.98
2007-10-04	15	16.13	41.56	1.35	199.48	334.44	0	17.49
2007-10-04	16	14.95	45.6	1.38	52.65	52.74	0	17.79
2007-10-04	17	12.81	60.39	0.66	32.89	5.27	0	17.98
2007-10-04	18	11.48	65.95	0.03	40.21	0	0	18.04
2007-10-04	19	10.9	68.56	0	198.87	0	0	18.02
2007-10-04	20	10.5	73.22	0.36	235.64	0	0	17.97
2007-10-04	21	10.7	69.63	3.21	267.21	0	0	17.83
2007-10-04	22	8.95	77.7	1.95	179.34	0	0	17.71
2007-10-04	23	8.83	76.02	2.1	340	0	0	17.55
2007-10-05	0	8.41	77.36	2.35	344.08	0	0	17.35
2007-10-05	1	7.28	84.38	0.99	102.41	0	0	17.08
2007-10-05	2	6.85	87.03	1.32	247.31	0	0	16.92
2007-10-05	3	5.59	92.06	0.4	276.81	0	0	16.76
2007-10-05	4	5.21	93.68	0.2	110.21	0	0	16.51
2007-10-05	5	5.18	93.89	0.08	119.27	0	0	16.28
2007-10-05	6	4.12	96.07	0.26	71.77	7.34	0	16.09

2007-10-05	7	5.44	94.59	0.17	75.82	118.87	0	15.91
2007-10-05	8	8.23	80.46	0.6	180.42	328.39	0	15.72
2007-10-05	9	10.4	67.4	1.05	265.84	432.97	0	15.58
2007-10-05	10	12.1	59.39	1.72	321.54	539.23	0	15.56
2007-10-05	11	13.68	53.05	2.6	342.55	590.14	0	15.65
2007-10-05	12	15.04	46.52	2.17	316.11	591.51	0	15.95
2007-10-05	13	16.22	40.9	1.67	222.56	566.43	0	16.34
2007-10-05	14	16.4	37.06	1.71	175.92	329.99	0	16.89
2007-10-05	15	17.03	34.03	1.83	168.07	287.57	0	17.4
2007-10-05	16	16.93	33.39	1.73	330	113.05	0	17.76
2007-10-05	17	16.06	39.62	1.61	277.41	22.73	0	17.94
2007-10-05	18	13.76	48.9	1.34	268.88	0	0	18.01
2007-10-05	19	12.04	53.83	1.33	275.12	0	0	18.02
2007-10-05	20	11.65	54	1.12	311.26	0	0	18
2007-10-05	21	9.93	60.21	0.92	165.32	0	0	17.92
2007-10-05	22	8.3	69.44	0.2	238.45	0	0	17.76
2007-10-05	23	8.03	67.9	1.03	238.06	0	0	17.61
2007-10-06	0	7.41	74.91	0.56	216.81	0	0	17.37
2007-10-06	1	6.7	80.97	1.08	215.61	0	0	17.06
2007-10-06	2	6.95	81.92	1.37	233.29	0	0	16.87
2007-10-06	3	7.51	79.75	1.57	230.16	0	0	16.61
2007-10-06	4	7.92	74.59	2.08	228.41	0	0	16.35
2007-10-06	5	8.16	71.09	1.67	237.02	0	0	16.14
2007-10-06	6	8.69	68.66	1.53	228.86	1.26	0	15.98
2007-10-06	7	9.42	64.95	1.68	260.23	49.1	0	15.86
2007-10-06	8	11.47	57.48	1.54	262.71	299.87	0	15.69
2007-10-06	9	13.72	46.45	2.26	251.13	435.41	0	15.62
2007-10-06	10	14.79	41.47	2.74	241.89	504.82	0	15.62
2007-10-06	11	15.91	37.89	2.59	237.05	576.37	0	15.76
2007-10-06	12	16.42	37.42	2.69	238.24	468.02	0	16.03
2007-10-06	13	16.97	39.38	2.59	266.17	517.97	0	16.45
2007-10-06	14	17.6	39.9	2.24	231.79	481.74	0	16.95
2007-10-06	15	17.28	41.69	2.45	222.14	267.83	0	17.44
2007-10-06	16	16.43	45.79	2.55	233.55	88.63	0	17.78
2007-10-06	17	15.84	51.47	2.24	231.12	11.38	0	17.98
2007-10-06	18	14.78	55.34	2.8	235.4	0	0	18.12
2007-10-06	19	13.72	59.18	2.53	229.57	0	0	18.21
2007-10-06	20	13.76	61.96	3.11	246.83	0	0	18.13
2007-10-06	21	13.59	63.22	3.04	253.95	0	0	18.02
2007-10-06	22	12.98	66.37	1.87	220.26	0	0	17.96
2007-10-06	23	13.26	66.98	2.11	229.37	0	0	17.87
2007-10-07	0	13.05	67.66	1.76	218.07	0	0	17.74
2007-10-07	1	12.91	70.43	0.93	230.54	0	0	17.69
2007-10-07	2	13.53	69.82	1.84	254.08	0	0	17.56
2007-10-07	3	13.78	70.71	1.44	228.68	0	0	17.43
2007-10-07	4	13.3	72.87	2.72	230.78	0	0	17.33
2007-10-07	5	12.69	75.98	2.24	213.03	0	0	17.17
2007-10-07	6	12.9	76.19	2.03	200.58	5.27	0	17.05
2007-10-07	7	14.53	71.27	1.84	198.54	38.49	0	16.97
2007-10-07	8	15.87	66.1	1.36	230.1	154.09	0	16.93

2007-10-07	9	16.69	63.23	2.37	215.81	249.22	0	16.89
2007-10-07	10	18.96	55.32	3.36	222.99	523.95	0	16.88
2007-10-07	11	20.16	51.12	3.32	238.1	453.62	0	16.93
2007-10-07	12	21.19	48.23	4.11	254.99	444.42	0	17.14
2007-10-07	13	22.22	43.7	4.75	262.03	521.06	0	17.54
2007-10-07	14	21.98	44.12	4.02	262.39	160.32	0	17.88
2007-10-07	15	23.13	40.8	2.87	261.65	277.82	0	18.33
2007-10-07	16	23.07	41.45	2.7	238.4	153.34	0	18.72
2007-10-07	17	20.83	47.7	2.33	232.06	1.04	0	18.9
2007-10-07	18	19.11	52.66	1.46	274.35	0	0	18.99
2007-10-07	19	18.47	54.46	1.3	273.84	0	0	19.05
2007-10-07	20	17.67	57.15	1.4	269.96	0	0	19.04
2007-10-07	21	17.36	58.61	1.74	276.45	0	0	18.99
2007-10-07	22	15.18	59.47	1.37	174.48	0	0	18.98
2007-10-07	23	14.56	61.17	0.62	182	0	0	18.94
2007-10-08	0	14.35	63.67	0.13	156.53	0	0	18.84
2007-10-08	1	13.92	66.69	1.19	260.93	0	0	18.75
2007-10-08	2	12.72	69.24	1.21	252.95	0	0	18.65
2007-10-08	3	11.95	72.7	0.69	209.99	0	0	18.49
2007-10-08	4	10.09	83.51	0.33	49.26	0	0	18.26
2007-10-08	5	10.94	79.64	0.4	150.28	0	0	18.06
2007-10-08	6	11.25	74.01	0.68	34.88	0.26	0	17.94
2007-10-08	7	11.44	71.88	0.77	43.37	34.48	0	17.8
2007-10-08	8	12.2	65.22	0.97	8.4	139.74	0	17.72
2007-10-08	9	13.95	56.24	1.23	103.48	337.26	0	17.65
2007-10-08	10	15.22	53.11	1.09	137.31	401.4	0	17.53
2007-10-08	11	16.24	50.42	1.79	97.87	481.01	0	17.61
2007-10-08	12	17.11	48.37	2.87	100.69	393.41	0	17.73
2007-10-08	13	17.84	44.69	2.99	12.33	448.69	0	17.93
2007-10-08	14	18.11	43.61	3.22	1.6	267.73	0	18.22
2007-10-08	15	18.64	43.85	3.22	268.51	239.81	0	18.59
2007-10-08	16	17.63	47.07	3.04	343.06	64.62	0	18.81
2007-10-08	17	16.48	49.02	2.47	348.05	2.9	0	18.97
2007-10-08	18	16.08	45.92	3.25	342.92	0	0	18.98
2007-10-08	19	15.74	44.1	2.86	330.97	0	0	18.99
2007-10-08	20	15.04	47.91	2.78	316.19	0	0	18.98
2007-10-08	21	14.22	49.72	2.51	322.3	0	0	18.98
2007-10-08	22	14	49.24	2.55	336.19	0	0	18.86
2007-10-08	23	13.2	51.38	2.02	185.52	0	0	18.78
2007-10-09	0	11.19	61.03	0.7	73.63	0	0	18.66
2007-10-09	1	9.48	69.94	0	132.7	0	0	18.49
2007-10-09	2	7.96	79.85	0	49.87	0	0	18.25
2007-10-09	3	7.45	85.42	0	49.57	0	0	18.04
2007-10-09	4	6.95	89.27	0	49.53	0	0	17.9
2007-10-09	5	6.76	95.55	0.21	263.31	0	0	17.72
2007-10-09	6	6.3	97.69	0.24	83.34	16.48	0	17.53
2007-10-09	7	8.49	91.68	0.21	45.91	150.22	0	17.3
2007-10-09	8	11.27	78.62	0.61	131.54	298.25	0	17.04
2007-10-09	9	13.94	66.35	0.83	311.45	404.94	0	16.93
2007-10-09	10	16.44	61.29	1.34	109.19	511.4	0	16.91

2007-10-09	11	18.42	59.29	1.97	15.5	545.81	0	16.93
2007-10-09	12	20.17	54.23	2.05	91.56	489.85	0	17.13
2007-10-09	13	21.35	50.01	2.15	181.74	378.68	0	17.52
2007-10-09	14	21.67	48.74	2.52	8.85	239.33	0	17.86
2007-10-09	15	21.64	47.57	2.07	259.01	125.03	0	18.28
2007-10-09	16	21.02	48.83	0.98	321.19	52.72	0	18.66
2007-10-09	17	19.22	52.11	0.89	290.15	4.19	0	18.85
2007-10-09	18	16.98	62.69	0.38	285.89	0	0	18.98
2007-10-09	19	15.85	68.59	0.58	264.46	0	0	18.98
2007-10-09	20	14.81	72.33	0.52	239.86	0	0	18.98
2007-10-09	21	13.67	77.95	0.37	77.1	0	0	18.98
2007-10-09	22	13.6	79.26	0.73	171.95	0	0	18.85
2007-10-09	23	14.05	79.32	0.97	179.04	0	0	18.76
2007-10-10	0	13.88	80.89	0.83	205.07	0	0	18.66
2007-10-10	1	12.12	89.8	0.78	92.28	0	0	18.52
2007-10-10	2	11.65	94.01	0.65	61.65	0	0	18.36
2007-10-10	3	11.29	95.01	0.48	120.56	0	0	18.2
2007-10-10	4	11.8	93.44	0.55	86.64	0	0	18.04
2007-10-10	5	12.05	92.63	0.54	144.64	0	0	17.97
2007-10-10	6	14.26	73.47	1.15	276.19	0.52	0	17.88
2007-10-10	7	16.29	57.12	2.46	255.4	46.03	0	17.75
2007-10-10	8	15.73	66.27	5.69	259.04	80.98	0	17.72
2007-10-10	9	15.17	69.31	3.85	252.03	55.65	0	17.69
2007-10-10	10	14.59	73.07	3.55	232.27	69.01	0	17.65
2007-10-10	11	13	86.57	3.46	232.96	84.09	0.508	17.58
2007-10-10	12	13.38	86.64	3.11	238.72	178.02	0	17.53
2007-10-10	13	14.47	80.63	3.5	227.88	183.57	0	17.53
2007-10-10	14	16.01	72.91	3.75	232.26	232.96	0	17.54
2007-10-10	15	16.85	63.01	3.9	237.37	146.63	0	17.64
2007-10-10	16	17.27	56.69	3.23	236.6	61.33	0	17.69
2007-10-10	17	17.25	51.29	3.96	253.31	12.61	0	17.71
2007-10-10	18	15.64	55	2.92	249.69	0	0	17.72
2007-10-10	19	14.19	62.4	2.85	256.12	0	0	17.7
2007-10-10	20	12.74	72.27	1.61	209.54	0	0	17.62
2007-10-10	21	13.02	70.25	1.48	238.53	0	0	17.51
2007-10-10	22	12.58	69.72	1.24	210.67	0	0	17.37
2007-10-10	23	11.51	74.85	1.78	245.78	0	0	17.21
2007-10-11	0	10.99	77	2.52	247.03	0	0	17.04
2007-10-11	1	10.55	77.98	1.35	245.18	0	0	16.94
2007-10-11	2	9.07	83.56	0.5	147.46	0	0	16.83
2007-10-11	3	8.21	88.09	0.57	155.33	0	0	16.63
2007-10-11	4	6.83	94.1	0.33	138.22	0	0	16.45
2007-10-11	5	5.39	97.93	0.28	58.46	0	0	16.25
2007-10-11	6	5.66	98.99	0.29	96	11.61	0	16.08
2007-10-11	7	7.24	96.86	0.74	31.89	53.76	0	15.92
2007-10-11	8	9.24	89.73	1.01	75.99	230.71	0	15.76
2007-10-11	9	12.3	71.76	0.7	62.28	390.92	0	15.61
2007-10-11	10	13.73	63.81	0.96	189.34	461.77	0	15.57
2007-10-11	11	14.88	55.91	1.14	21.63	471.06	0	15.6
2007-10-11	12	16.42	51.39	1.35	41.3	523.02	0	15.77

2007-10-11	13	17.41	46.85	2.2	17.96	444.52	0	16.01
2007-10-11	14	17.57	47.63	2.2	6.86	225.63	0	16.34
2007-10-11	15	17.66	48.3	2.41	265.53	136.35	0	16.74
2007-10-11	16	16.7	53.78	2	342.35	37.89	0	16.98
2007-10-11	17	15.82	55.99	2.54	346.86	0.43	0	17.22
2007-10-11	18	15.12	56.67	3.15	348.48	0	0	17.38
2007-10-11	19	14.8	55.05	3.68	263.23	0	0	17.4
2007-10-11	20	14.17	57.45	2.57	175.12	0	0	17.39
2007-10-11	21	13.6	60.27	1.46	171.44	0	0	17.39
2007-10-11	22	13.25	61.42	1.29	345.74	0	0	17.35
2007-10-11	23	12.94	62.71	1.79	271.19	0	0	17.28
2007-10-12	0	12.58	64.57	0.79	165.73	0	0	17.09
2007-10-12	1	12.28	67.79	0.85	255.32	0	0	17.04
2007-10-12	2	11.73	70.68	1.01	18.14	0	0	16.97
2007-10-12	3	11.94	68.94	1.68	190.16	0	0	16.93
2007-10-12	4	12.43	65.49	2.09	334	0	0	16.86
2007-10-12	5	12.29	67.71	2.54	337.85	0	0	16.81
2007-10-12	6	11.51	77.36	2.48	333.91	2.05	0	16.7
2007-10-12	7	11.73	77.83	2.46	335.12	29.74	0	16.56
2007-10-12	8	12.43	73.98	3	345.17	72.59	0	16.53
2007-10-12	9	13.21	69.79	3.3	355.65	156.17	0	16.48
2007-10-12	10	14.2	65.9	3.27	96.56	278.14	0	16.38
2007-10-12	11	15.05	62.93	2.96	103.61	298.15	0	16.37
2007-10-12	12	15.79	60.91	2.75	30.1	299.17	0	16.49
2007-10-12	13	16.82	56.95	2.54	9.95	342.39	0	16.56
2007-10-12	14	17.64	53.74	2.73	91.21	274.81	0	16.82
2007-10-12	15	18.01	50.46	3.17	182.89	216.65	0	16.95
2007-10-12	16	17.28	53.38	2.72	183.15	77.48	0	17.13
2007-10-12	17	15.03	66.47	1.47	20.84	6.51	0	17.37
2007-10-12	18	13.71	72.77	0.87	29.15	0	0	17.48
2007-10-12	19	13.25	73.89	0.62	182.52	0	0	17.53
2007-10-12	20	13.26	73.55	0.25	290.03	0	0	17.53
2007-10-12	21	12.82	75.96	0.43	278.76	0	0	17.53
2007-10-12	22	12.54	75.9	0.03	285.67	0	0	17.42
2007-10-12	23	11.82	78.99	0	279.58	0	0	17.36
2007-10-13	0	9.37	91.7	0	283.32	0	0	17.26
2007-10-13	1	7.8	97.6	0	72.48	0	0	17.07
2007-10-13	2	6.54	100	0	73.01	0	0	16.98
2007-10-13	3	6.14	100	0.08	88.47	0	0	16.87
2007-10-13	4	5.16	100	0.57	69.85	0	0	16.73
2007-10-13	5	4.34	100	0.38	62.67	0	0	16.51
2007-10-13	6	4.05	100	0.36	65.23	7.05	0	16.31
2007-10-13	7	5.93	99.47	0.43	50.45	115.7	0	16.13
2007-10-13	8	8.88	92.99	0.53	76.61	256.85	0	15.98
2007-10-13	9	12.11	80.68	0.41	119.35	385.73	0	15.87
2007-10-13	10	14.2	69.94	0.69	87.96	479.72	0	15.81
2007-10-13	11	16.12	61.8	0.9	97.91	527.63	0	15.84
2007-10-13	12	17.49	57.06	1.03	116.99	526.4	0	15.93
2007-10-13	13	18.58	52.96	1.2	27.5	476.49	0	16.17
2007-10-13	14	18.97	49.96	1.19	56.8	381.85	0	16.59

2007-10-13	15	19.25	46.82	1.35	198.98	255.57	0	16.98
2007-10-13	16	18.76	48.34	1.23	100.9	100.04	0	17.38
2007-10-13	17	16.33	61.77	0.22	31.44	2.43	0	17.62
2007-10-13	18	14.11	70.11	0	32.37	0	0	17.73
2007-10-13	19	11.86	76.94	0.22	57.06	0	0	17.73
2007-10-13	20	9.31	88.12	0.62	64.98	0	0	17.73
2007-10-13	21	8.33	92.56	0.52	63.32	0	0	17.67
2007-10-13	22	7.52	93.07	0.6	62.78	0	0	17.51
2007-10-13	23	6.78	94.45	0.54	74.1	0	0	17.34
2007-10-14	0	5.91	96.96	0.49	61.6	0	0	17.09
2007-10-14	1	5.35	98.01	0.34	50.82	0	0	16.94
2007-10-14	2	5.16	98.71	0.42	42.38	0	0	16.8
2007-10-14	3	4.24	99.67	0.61	69.06	0	0	16.55
2007-10-14	4	3.52	100	0.41	37.02	0	0	16.34
2007-10-14	5	3.68	100	0.07	26.83	0	0	16.14
2007-10-14	6	3.5	100	0.07	255.13	6.87	0	15.96
2007-10-14	7	4.91	98.71	0.19	195.31	107.9	0	15.81
2007-10-14	8	8.17	85.12	1.76	102.03	258.9	0	15.6
2007-10-14	9	10.1	77.54	1.04	51.05	385.73	0	15.45
2007-10-14	10	12.42	68.12	1.18	35.56	473.97	0	15.27
2007-10-14	11	14.51	62.94	1.4	269.16	520.79	0	15.27
2007-10-14	12	16.3	57.67	1.74	108.96	501.64	0	15.51
2007-10-14	13	17.58	53.33	2.08	102.52	460.26	0	15.74
2007-10-14	14	18.68	51.01	2.11	20.76	354.4	0	16.05
2007-10-14	15	19.09	50.1	2.26	19.43	251.95	0	16.42
2007-10-14	16	18.14	54.8	1.6	16.44	68.26	0	16.8
2007-10-14	17	16.52	60.68	0.13	327.52	2.75	0	16.97
2007-10-14	18	13.79	72.06	0.02	293.38	0	0	17.07
2007-10-14	19	11.05	82.7	0.32	181.6	0	0	17.15
2007-10-14	20	9.46	89.8	0.44	49.81	0	0	17.1
2007-10-14	21	9.36	88.45	0.14	46.63	0	0	17.05
2007-10-14	22	8.8	89.55	0.07	57.54	0	0	16.96
2007-10-14	23	7.89	91.19	0.14	56.34	0	0	16.86
2007-10-15	0	7.54	93.02	0.25	67.94	0	0	16.71
2007-10-15	1	5.55	97.99	0.33	65.04	0	0	16.51
2007-10-15	2	5.7	98.98	0.54	115.08	0	0	16.31
2007-10-15	3	4.78	99.81	0.55	70.05	0	0	16.13
2007-10-15	4	5.75	99.37	0.58	166.51	0	0	15.98
2007-10-15	5	4.7	99	0.01	122.4	0	0	15.85
2007-10-15	6	4.84	99.67	0.02	132.08	5.27	0	15.65
2007-10-15	7	5.79	97.98	0.32	79.38	93.84	0	15.5
2007-10-15	8	9.07	85.55	0.31	75.85	266.11	0	15.28
2007-10-15	9	10.56	79.32	1.26	120.39	224.91	0	15.17
2007-10-15	10	12.7	71.82	0.63	111.11	404.71	0	15.13
2007-10-15	11	14.7	63.77	0.71	153.82	452.38	0	15.13
2007-10-15	12	15.42	61.9	0.81	113.05	274.13	0	15.17
2007-10-15	13	16.35	58.36	0.73	116.64	297.25	0	15.4
2007-10-15	14	17.41	55.47	0.98	136	290.68	0	15.66
2007-10-15	15	16.75	59	1.69	169.75	148.42	0	15.92
2007-10-15	16	16.32	60.39	0.96	163.5	35.18	0	16.11

2007-10-15	17	15.81	63.23	0.64	158.96	0	0	16.3
2007-10-15	18	15.24	68.82	0.83	147.24	0	0	16.47
2007-10-15	19	14.48	72.84	0.23	151.37	0	0	16.53
2007-10-15	20	13.56	77.78	0.25	151.56	0	0	16.53
2007-10-15	21	14.58	69.41	1.6	166.21	0	0	16.53
2007-10-15	22	15.23	67.91	3.07	256.71	0	0	16.53
2007-10-15	23	13.3	85.85	3.64	272.67	0	1.524	16.49
2007-10-16	0	12.14	95.66	1.29	220.16	0	0	16.39
2007-10-16	1	12.5	89.1	2.44	227.07	0	0.254	16.34
2007-10-16	2	12.65	85.95	3.15	235.65	0	0	16.28
2007-10-16	3	12.16	84.74	2.11	211.11	0	0	16.18
2007-10-16	4	11.53	87.16	1.93	216.72	0	0	16.13
2007-10-16	5	10.7	83.09	1.76	224.87	0	0	16.08
2007-10-16	6	10.48	83.37	1.58	212.68	0.11	0	16.01
2007-10-16	7	10.97	78.31	1.21	190.78	41.64	0	15.9
2007-10-16	8	12.21	71.36	1.22	172.35	191.31	0	15.86
2007-10-16	9	13.39	65.57	1.83	147.15	299.3	0	15.72
2007-10-16	10	14.29	63.04	1.62	164.83	371.01	0	15.64
2007-10-16	11	15.55	58.05	1.7	217.21	469.53	0	15.65
2007-10-16	12	16.2	55.34	0.96	220.87	342.88	0	15.83
2007-10-16	13	16	55.35	1.68	291.03	117	0	15.96
2007-10-16	14	14.63	60.44	3.59	261.58	38.52	0	16.15
2007-10-16	15	12.82	71.94	2.37	278.78	35.17	0	16.35
2007-10-16	16	12.65	74.23	0.74	230.65	2.9	0	16.51
2007-10-16	17	12.45	73.63	1.05	178.57	0.58	0	16.53
2007-10-16	18	11.73	77.63	1.93	190.28	0	0	16.53
2007-10-16	19	10.71	85.17	2.05	197.27	0	0	16.48
2007-10-16	20	10.65	81.87	2.18	212.67	0	0	16.35
2007-10-16	21	9.63	81	2.34	226.66	0	0	16.23
2007-10-16	22	9.04	82.53	2.82	253.58	0	0	16.11
2007-10-16	23	8.45	85.65	2.28	252.28	0	0	15.98
2007-10-17	0	8.13	84.1	2.41	248.02	0	0	15.86
2007-10-17	1	7.04	84.99	0.52	168.78	0	0	15.66
2007-10-17	2	6.35	87.84	1	249.69	0	0	15.49
2007-10-17	3	6.15	88.11	1.45	210.97	0	0	15.26
2007-10-17	4	6.28	86.91	1.14	243.89	0	0	15.11
2007-10-17	5	5.94	89.34	0.42	241.89	0	0	14.97
2007-10-17	6	6.33	88.34	0.63	246.04	8.14	0	14.69
2007-10-17	7	7.97	80.82	1.75	198.43	29.96	0	14.49
2007-10-17	8	9.37	75.85	1.94	189.19	127.6	0	14.34
2007-10-17	9	11.11	67.14	2.83	226.9	241.66	0	14.21
2007-10-17	10	11.61	65.61	3.15	250.73	276.48	0	14.14
2007-10-17	11	13.06	61.2	4.03	257.78	511.46	0	14.14
2007-10-17	12	13.75	58.57	4.12	245.3	435.79	0	14.18
2007-10-17	13	14.98	49.77	4.01	240.23	349.6	0	14.34
2007-10-17	14	14.94	46.95	2.9	281.82	149.26	0	14.59
2007-10-17	15	15.16	45.53	4.54	255.62	164.25	0	14.92
2007-10-17	16	14.32	47.65	4.77	262.66	93.26	0	15.1
2007-10-17	17	12.75	53.71	3.23	262.22	1.34	0	15.18
2007-10-17	18	11.8	56.65	3.48	262.24	0	0	15.23

2007-10-17	19	10.86	58.37	2.08	274.54	0	0	15.23
2007-10-17	20	10.14	62.4	1.55	284.5	0	0	15.19
2007-10-17	21	9.54	67.24	0.86	245.47	0	0	15.12
2007-10-17	22	9.85	65.98	2.36	242.9	0	0	15.02
2007-10-17	23	8.76	75.71	1.22	192.37	0	0	14.92
2007-10-18	0	8.25	79.02	1.74	223.98	0	0	14.71
2007-10-18	1	7.82	80.96	1.18	208.52	0	0	14.55
2007-10-18	2	7.92	80.76	1.29	187.54	0	0	14.41
2007-10-18	3	8.19	80.23	0.93	150.24	0	0	14.3
2007-10-18	4	8	83.26	0.64	132.93	0	0	14.18
2007-10-18	5	7.87	80.02	0.84	133.42	0	0	14.11
2007-10-18	6	7.97	79.11	1.35	130.27	0	0	14
2007-10-18	7	8.24	81.58	0.59	140.99	9.46	0	13.9
2007-10-18	8	9.21	79.47	1	132.75	52.6	0	13.83
2007-10-18	9	10.31	76.95	1.68	133.83	89.93	0.254	13.76
2007-10-18	10	11.22	75.26	1.81	153.26	105.33	0	13.74
2007-10-18	11	12.08	74.39	1.55	140.47	87.4	0	13.71
2007-10-18	12	13.32	69.75	1.35	156.88	186.1	0	13.75
2007-10-18	13	16.81	59.4	0.98	187.46	326.62	0	13.78
2007-10-18	14	18.54	53.31	1.68	219.32	260.46	0	13.84
2007-10-18	15	18.68	51.4	3.72	260.12	252.86	0	13.97
2007-10-18	16	17.5	56.82	3.43	258.86	96.05	0	14.13
2007-10-18	17	15.64	64.68	1.19	219.3	1.6	0	14.26
2007-10-18	18	14.19	70.19	1.08	172.42	0	0	14.37
2007-10-18	19	14.24	69.78	1.66	170.39	0	0	14.42
2007-10-18	20	14.39	69.19	1.84	170.3	0	0	14.44
2007-10-18	21	15.28	63.89	1.86	193.79	0	0	14.44
2007-10-18	22	13.8	77.97	1.52	215.97	0	0.254	14.44
2007-10-18	23	12.73	87.43	1.24	165.3	0	0.508	14.42
2007-10-19	0	11.95	96.09	1.45	172.65	0	1.778	14.41
2007-10-19	1	11.56	99.98	0.93	149.8	0	1.778	14.39
2007-10-19	2	11.25	100	1.56	151.32	0	0.254	14.39
2007-10-19	3	11.09	100	0.77	168.96	0	0.254	14.37
2007-10-19	4	11.09	100	0.32	186.26	0	0	14.34
2007-10-19	5	11.01	100	0.41	242.53	0	0	14.33
2007-10-19	6	11.1	99.73	0.92	190.57	0	0	14.27
2007-10-19	7	11.61	99.33	0.65	213.23	29.28	0	14.27
2007-10-19	8	13.21	85	3.7	271.54	72.85	0	14.26
2007-10-19	9	14.56	67.91	6.19	262.67	215.18	0	14.17
2007-10-19	10	15.89	58.49	7.08	266.14	456.7	0	14.14
2007-10-19	11	16.42	48.25	7.61	266.94	513.16	0	14.17
2007-10-19	12	16.48	41.15	7.5	265.46	418.01	0	14.29
2007-10-19	13	16.64	40.32	5.17	266.42	375.55	0	14.41
2007-10-19	14	16.92	39.12	5.33	261.14	361.41	0	14.63
2007-10-19	15	16.28	40.52	3.85	271.26	135.5	0	14.87
2007-10-19	16	15.5	42.98	3.72	276.89	35.06	0	15.02
2007-10-19	17	13.62	53.65	3.76	290.32	0	0	15.12
2007-10-19	18	12.55	56.67	3.69	276.95	0	0	15.13
2007-10-19	19	11.53	61.28	4.02	256.11	0	0	15.12
2007-10-19	20	10.72	70.25	3.5	235.65	0	0	15.03

2007-10-19	21	10.22	71.45	2.98	250.71	0	0	14.96
2007-10-19	22	9.91	69.49	3.47	253.08	0	0	14.8
2007-10-19	23	9.4	68.6	3.42	260.91	0	0	14.61
2007-10-20	0	8.93	69.37	4.08	258.64	0	0	14.45
2007-10-20	1	8.22	73.54	1.71	233.9	0	0	14.32
2007-10-20	2	7.75	79.39	1.46	202.64	0	0	14.16
2007-10-20	3	7.37	81.73	0.97	217.81	0	0	14.03
2007-10-20	4	7.94	78.05	2.14	222.35	0	0	13.84
2007-10-20	5	8.66	72.28	3.76	240.09	0	0	13.65
2007-10-20	6	8.85	69.67	4.26	252.93	0.11	0	13.51
2007-10-20	7	8.72	71.26	5.21	255.63	25.62	0	13.4
2007-10-20	8	9.23	70.39	4.77	253.64	112.12	0	13.31
2007-10-20	9	10.45	64.28	5.02	252.96	270.87	0	13.13
2007-10-20	10	11.89	57.33	6.81	256.84	433.39	0	13.08
2007-10-20	11	12.69	52.47	5.73	254.03	512.9	0	13.08
2007-10-20	12	12.27	55.32	5.3	254.66	213.42	0	13.22
2007-10-20	13	11.86	58.55	5.04	261.4	113.11	0	13.41
2007-10-20	14	12.63	56.74	4.69	257.38	160.01	0	13.55
2007-10-20	15	12.51	56.8	4.55	259.6	91.28	0	13.73
2007-10-20	16	12.23	59.89	4.22	260.52	73.98	0	13.84
2007-10-20	17	11.39	62.8	4.59	271.65	0	0	13.89
2007-10-20	18	10.92	65.05	4.26	269.92	0	0	13.9
2007-10-20	19	10.19	68.57	3.72	274.39	0	0	13.87
2007-10-20	20	9.8	70.96	3.08	261.82	0	0	13.81
2007-10-20	21	9.35	74.47	3.08	265.3	0	0	13.7
2007-10-20	22	8.71	76.35	2.2	256.05	0	0	13.56
2007-10-20	23	7.41	81.51	1.14	234.57	0	0	13.46
2007-10-21	0	7.15	86.1	1.04	236.44	0	0	13.36
2007-10-21	1	7.53	85.26	1.71	248.35	0	0	13.2
2007-10-21	2	7.51	85.13	1.34	247.63	0	0	13.06
2007-10-21	3	6.94	87.4	0.91	244.79	0	0	12.9
2007-10-21	4	6.93	88.32	0.5	241.11	0	0	12.76
2007-10-21	5	7.51	86.81	0.66	213.63	0	0	12.65
2007-10-21	6	7.3	89.72	0.79	236.5	0.05	0	12.53
2007-10-21	7	8	87.23	0.75	198.76	22.89	0	12.45
2007-10-21	8	9.36	78.47	2.12	237.55	85.01	0	12.29
2007-10-21	9	10.36	72.03	2.35	260.14	138.82	0	12.25
2007-10-21	10	11.56	68.56	1.78	256.02	210.37	0	12.21
2007-10-21	11	12.84	62.45	2.85	255.43	260.89	0	12.24
2007-10-21	12	14.07	56.38	3.11	253.16	296.31	0	12.3
2007-10-21	13	15.07	48.28	2.9	235.51	316.66	0	12.49
2007-10-21	14	15.1	47.86	1.97	233.86	172.02	0	12.66
2007-10-21	15	15.22	47.47	1.33	207.9	102.91	0	12.86
2007-10-21	16	14.86	49.12	1.36	192.82	26.9	0	13.11
2007-10-21	17	13.9	53.79	0.15	253.62	0	0	13.34
2007-10-21	18	12.39	65.53	0.15	93.39	0	0	13.42
2007-10-21	19	11.46	71.52	0.17	85	0	0	13.48
2007-10-21	20	11.91	69.37	0.89	149.81	0	0	13.54
2007-10-21	21	11.57	76.46	1.22	174.51	0	0	13.53
2007-10-21	22	11.01	78.01	0.78	173.18	0	0	13.49

2007-10-21	23	9.99	81.07	0.41	139.81	0	0	13.43
2007-10-22	0	10.63	77.63	0.66	163.35	0	0	13.42
2007-10-22	1	10.6	77.77	0.86	124.3	0	0	13.38
2007-10-22	2	11.32	72.45	0.8	167.98	0	0	13.34
2007-10-22	3	11.85	67.89	1.89	202.66	0	0	13.31
2007-10-22	4	12.1	66.82	2.28	205.54	0	0	13.2
2007-10-22	5	11.76	68.4	1.95	205.61	0	0	13.13
2007-10-22	6	11.5	67.17	2.14	211.48	0.65	0	13.11
2007-10-22	7	12.19	62.95	2.14	219.47	73.68	0	13.07
2007-10-22	8	14.07	56.86	1.58	203.45	207.79	0	13.07
2007-10-22	9	16.34	48.23	2.35	264.27	343.17	0	12.95
2007-10-22	10	17.82	45.7	2.27	256.19	382.78	0	13.05
2007-10-22	11	19.44	40.22	2.33	240.92	510.75	0	13.19
2007-10-22	12	21.03	37.27	2.75	240.96	476.98	0	13.46
2007-10-22	13	22.11	35.16	2.09	247.12	392.69	0	13.83
2007-10-22	14	23.05	32.91	2.17	252.25	328.07	0	14.23
2007-10-22	15	23.01	33.21	0.6	104.4	181.55	0	14.66
2007-10-22	16	22.44	36.84	0.61	33.05	66.08	0	15.08
2007-10-22	17	19.6	44.61	0.47	185.76	0.06	0	15.32
2007-10-22	18	16.51	57.08	0.54	133.1	0	0	15.55
2007-10-22	19	13.4	72.22	0.22	125.3	0	0	15.61
2007-10-22	20	11.98	78.57	0.41	59.18	0	0	15.59
2007-10-22	21	10.83	83.01	0.62	85.99	0	0	15.53
2007-10-22	22	9.5	88.23	0.48	68.21	0	0	15.37
2007-10-22	23	8.98	89.53	0.47	89.03	0	0	15.23
2007-10-23	0	7.67	94.3	0.78	79.54	0	0	15.11
2007-10-23	1	6.89	97.34	0.73	81.03	0	0	15
2007-10-23	2	6.73	96.78	0.67	81.89	0	0	14.82
2007-10-23	3	5.83	99.66	0.66	71.91	0	0	14.6
2007-10-23	4	5.76	99.65	0.26	119.17	0	0	14.44
2007-10-23	5	5.67	99.55	0.37	187.04	0	0	14.31
2007-10-23	6	5.23	99.69	0.61	43.94	0.19	0	14.16
2007-10-23	7	6.02	99.51	0.65	13.54	77.73	0	14.05
2007-10-23	8	8.85	91.31	1.08	322.12	218.03	0	13.88
2007-10-23	9	11.79	79.69	1.2	177.26	342.37	0	13.77
2007-10-23	10	15.14	67.13	2.77	17.77	430.17	0	13.69
2007-10-23	11	16.55	61.84	2.5	11.18	474.46	0	13.77
2007-10-23	12	18	56.07	2.33	99.34	471.1	0	13.9
2007-10-23	13	19.53	51.02	2.28	181.12	419.91	0	14.17
2007-10-23	14	20.48	48.24	1.75	90.07	327.18	0	14.48
2007-10-23	15	20.98	47.44	1.83	348.59	200.61	0	14.93
2007-10-23	16	20.07	53.67	0.98	97.45	59.3	0	15.19
2007-10-23	17	17.44	60.3	0.24	349.93	0.01	0	15.52
2007-10-23	18	14.47	73.91	0.01	342.75	0	0	15.63
2007-10-23	19	12.43	81.7	0	30.22	0	0	15.67
2007-10-23	20	11.01	89.34	0.09	76.17	0	0	15.65
2007-10-23	21	9.05	95.14	0.62	66.4	0	0	15.61
2007-10-23	22	8.67	97.66	0.47	129.3	0	0	15.5
2007-10-23	23	8.67	96.17	0.55	80.05	0	0	15.3
2007-10-24	0	7.47	99.35	0.81	55	0	0	15.18

2007-10-24	1	7.12	99.27	0.16	236.54	0	0	15.06
2007-10-24	2	6.62	99.15	0.29	107.03	0	0	14.93
2007-10-24	3	5.87	100	0.57	60.04	0	0	14.7
2007-10-24	4	5.3	100	0.55	61.82	0	0	14.53
2007-10-24	5	5.33	100	0.02	0.47	0	0	14.38
2007-10-24	6	5.24	100	0.48	34.1	0.99	0	14.24
2007-10-24	7	7.11	99.33	0.46	93.61	109.36	0	14.12
2007-10-24	8	10.3	93.97	0.84	131.46	172.28	0	13.98
2007-10-24	9	12.65	85.84	0.57	218.64	275.09	0	13.86
2007-10-24	10	16.63	69.82	0.31	91.33	415.28	0	13.83
2007-10-24	11	21.17	50.49	1.84	182.23	461.28	0	13.85
2007-10-24	12	23.54	39.67	2.49	239.53	458.79	0	14.04
2007-10-24	13	23.82	37.22	4.25	250.51	413.69	0	14.27
2007-10-24	14	24.28	38.84	4.12	251.24	319.78	0	14.69
2007-10-24	15	23.94	39.37	3.48	285.7	131.29	0	15.11
2007-10-24	16	21.46	41.96	4.12	305.68	23.1	0	15.48
2007-10-24	17	17.34	50.6	3.55	338.53	0	0	15.76
2007-10-24	18	15.66	49.99	3.46	338.58	0	0	15.92
2007-10-24	19	14.72	49.23	3.39	332.99	0	0	16.02
2007-10-24	20	13.66	48.36	3.35	331.28	0	0	16.02
2007-10-24	21	12.72	49.6	2.28	316.48	0	0	16.01
2007-10-24	22	12.45	47.9	1.83	298.25	0	0	15.91
2007-10-24	23	12.38	45.99	2.17	289.44	0	0	15.88
2007-10-25	0	11.72	45.56	2.58	315.7	0	0	15.83
2007-10-25	1	9.06	57.63	1.13	221.38	0	0	15.65
2007-10-25	2	8.26	63.02	1.33	271.71	0	0	15.59
2007-10-25	3	7.15	67.44	0.39	280.62	0	0	15.46
2007-10-25	4	6.32	69.88	0.15	267.67	0	0	15.26
2007-10-25	5	5.86	70.99	0.37	232.78	0	0	15.12
2007-10-25	6	3.42	81.55	0.19	189.17	0	0	14.98
2007-10-25	7	3.06	85.05	0.37	86.51	45.32	0	14.7
2007-10-25	8	6.54	71.17	0.29	120.68	217.24	0	14.48
2007-10-25	9	9.85	54.12	0.94	297.14	345.08	0	14.31
2007-10-25	10	11.4	46.24	1.42	347.58	438.15	0	14.16
2007-10-25	11	12.4	43.36	1.5	19.63	483.8	0	14.14
2007-10-25	12	13.56	40.5	1.77	128.22	465.5	0	14.2
2007-10-25	13	14.2	35.89	2.45	34.77	402.13	0	14.36
2007-10-25	14	14.74	32.18	2.58	27.11	337.05	0	14.65
2007-10-25	15	14.69	30.32	2.78	13.68	202.57	0	14.98
2007-10-25	16	13.32	35.83	1.75	270.97	54.7	0	15.16
2007-10-25	17	10.97	41.47	1.77	266.88	0	0	15.28
2007-10-25	18	8.39	50.4	1.74	122.45	0	0	15.42
2007-10-25	19	4.86	66.81	1.43	40.29	0	0	15.37
2007-10-25	20	5.17	66.24	1.15	249.39	0	0	15.27
2007-10-25	21	4.54	66.92	0.61	289.65	0	0	15.17
2007-10-25	22	3.17	70.75	0.94	318.59	0	0	15.04
2007-10-25	23	2.31	71.87	0.81	302.14	0	0	14.85
2007-10-26	0	1.62	74.68	0.74	314.18	0	0	14.56
2007-10-26	1	2.17	71.47	1.32	352.18	0	0	14.35
2007-10-26	2	1.42	73.82	0.85	179.93	0	0	14.14

2007-10-26	3	0.31	77.64	0.61	118.84	0	0	13.89
2007-10-26	4	-0.51	81.29	1.16	44.06	0	0	13.63
2007-10-26	5	-1.27	84.64	1.23	40.26	0	0	13.41
2007-10-26	6	-1.67	86.8	1.16	29.81	0	0	13.17
2007-10-26	7	-1.33	89.3	0.49	84.33	75.39	0	12.94
2007-10-26	8	3.32	72.45	2.32	5.61	220.86	0	12.73
2007-10-26	9	5.53	60.06	2.21	181.32	347.02	0	12.55
2007-10-26	10	7.58	51.94	1.63	97.3	435.25	0	12.45
2007-10-26	11	9.57	45.88	1.34	179.67	478.54	0	12.33
2007-10-26	12	11.31	40.53	1.77	190.82	473.69	0	12.46
2007-10-26	13	12.78	37.35	2.24	30.37	420.05	0	12.58
2007-10-26	14	13.8	33.27	1.48	30.65	321.54	0	12.8
2007-10-26	15	14.27	28.72	2.49	44.7	196.28	0	13.13
2007-10-26	16	12.69	38.87	1.05	169.75	49.71	0	13.42
2007-10-26	17	10	48.66	0.43	231.3	0	0	13.58
2007-10-26	18	6.65	61.1	0.51	189.99	0	0	13.75
2007-10-26	19	4.38	68.39	0.68	67.61	0	0	13.76
2007-10-26	20	2.3	75.74	0.38	90.18	0	0	13.69
2007-10-26	21	2.12	72.87	0.73	127.46	0	0	13.56
2007-10-26	22	0.78	79.57	0.34	18.92	0	0	13.41
2007-10-26	23	-0.86	85.99	0.63	48.66	0	0	13.24
2007-10-27	0	-1.03	86.24	0.18	25.99	0	0	13.03
2007-10-27	1	-1.81	87.46	0.49	72.38	0	0	12.82
2007-10-27	2	-3.34	93.29	0.67	127.26	0	0	12.61
2007-10-27	3	-3.13	92.36	0.5	54.08	0	0	12.43
2007-10-27	4	-3.79	94.8	0.65	40.56	0	0	12.18
2007-10-27	5	-3.95	94.74	1.11	34.41	0	0	11.96
2007-10-27	6	-4.45	95.03	0.16	197.82	0.05	0	11.76
2007-10-27	7	-3.84	93.31	0.68	63.84	72	0	11.56
2007-10-27	8	-1.61	91.07	1.27	21	216.59	0	11.3
2007-10-27	9	1.22	82.28	0.75	98.67	338.47	0	11.13
2007-10-27	10	4.79	67.27	0.8	178.7	418.01	0	11
2007-10-27	11	7.19	56.86	1.51	99.75	451.36	0	10.92
2007-10-27	12	8.87	52.83	1.66	261.71	446.18	0	11.01
2007-10-27	13	10.12	48.47	2.3	14.01	376.54	0	11.16
2007-10-27	14	10.86	48.23	2.02	103.61	282.19	0	11.43
2007-10-27	15	10.95	47.6	1.59	26.29	166.27	0	11.73
2007-10-27	16	10.05	48.78	0.35	267.45	27.65	0	11.95
2007-10-27	17	8.28	56.17	0.11	165.53	0	0	12.18
2007-10-27	18	5.58	67.58	0.33	117.83	0	0	12.28
2007-10-27	19	3.27	78.95	0.73	80.45	0	0	12.31
2007-10-27	20	3.16	80.96	0.36	88.47	0	0	12.29
2007-10-27	21	2.53	82.45	0.38	100.87	0	0	12.23
2007-10-27	22	0.04	94.14	0.71	69.72	0	0	12.11
2007-10-27	23	-0.46	98.77	0.79	78.31	0	0	11.96
2007-10-28	0	-1.15	99.11	0.67	77.78	0	0	11.86
2007-10-28	1	-2.03	99.91	0.57	62.31	0	0	11.71
2007-10-28	2	-1.82	99.57	0.53	83.11	0	0	11.55
2007-10-28	3	-2.03	99.32	0.45	65.83	0	0	11.33
2007-10-28	4	-2.57	99.63	0.31	75.16	0	0	11.18

2007-10-28	5	-3.35	99.99	0.57	67.71	0	0	11.02
2007-10-28	6	-3.53	100	0.62	60.54	0.03	0	10.89
2007-10-28	7	-2.48	99.45	0.25	46.6	59.27	0	10.73
2007-10-28	8	0.33	93.76	0.45	25.65	194.36	0	10.53
2007-10-28	9	3.89	81.52	0.19	120.5	313.91	0	10.37
2007-10-28	10	5.71	73.54	0.46	114.07	403.2	0	10.29
2007-10-28	11	7.95	62.95	0.58	49.92	449.01	0	10.27
2007-10-28	12	9.92	54.94	0.63	134.13	436.54	0	10.35
2007-10-28	13	11.44	47.89	0.62	177.43	388.01	0	10.6
2007-10-28	14	12.39	45.35	0.49	81.09	292	0	10.87
2007-10-28	15	12.87	44.05	0.45	78.88	165.91	0	11.14
2007-10-28	16	12.05	49.32	0.46	269.31	35.91	0	11.47
2007-10-28	17	9.4	59.38	0.22	257.79	0	0	11.73
2007-10-28	18	6.53	70.25	0.05	274.65	0	0	11.87
2007-10-28	19	3.68	82.2	0.47	72.29	0	0	11.93
2007-10-28	20	2.5	89.85	0.74	78.64	0	0	11.93
2007-10-28	21	1.25	92.96	0.72	77.35	0	0	11.85
2007-10-28	22	0.15	95.38	0.61	61.86	0	0	11.74
2007-10-28	23	0.06	94.08	0.5	46.57	0	0	11.65
2007-10-29	0	-0.25	94.81	0.55	56.39	0	0	11.45
2007-10-29	1	-0.75	96.27	0.53	60.6	0	0	11.3
2007-10-29	2	-1.71	99.36	0.47	64.09	0	0	11.16
2007-10-29	3	-1.73	99.5	0.49	60.84	0	0	11.01
2007-10-29	4	-1.89	99.46	0.24	48.04	0	0	10.89
2007-10-29	5	-2.21	100	0.58	54.65	0	0	10.74
2007-10-29	6	-1.31	99.77	0.46	48.93	0	0	10.56
2007-10-29	7	-0.05	98.24	0.67	99.01	9.81	0	10.39
2007-10-29	8	1.55	93.15	0.11	241.01	49.56	0	10.29
2007-10-29	9	3.56	87.02	0.26	181.38	246.35	0	10.19
2007-10-29	10	6.57	74.12	0.37	177.49	293.69	0	10.16
2007-10-29	11	8.5	64.89	0.39	206.74	351.71	0	10.14
2007-10-29	12	10.17	58.14	0.37	176.84	284.7	0	10.19
2007-10-29	13	10.68	55.35	0.82	101.93	126.33	0	10.3
2007-10-29	14	10.3	61.77	0.61	278.03	50.88	0	10.5
2007-10-29	15	10.73	60.37	0.03	296.13	79.73	0	10.76
2007-10-29	16	10.09	62.46	0.27	300.98	11.29	0	10.93
2007-10-29	17	8.84	69.42	0	57.05	0	0	11.06
2007-10-29	18	8.67	72.28	0	112.56	0	0	11.14
2007-10-29	19	7.8	77.43	0	169.24	0	0	11.18
2007-10-29	20	7.65	80.56	0.32	158.02	0	0	11.19
2007-10-29	21	6.02	88.33	0.26	67.46	0	0	11.19
2007-10-29	22	5.89	89.69	0.17	31.96	0	0	11.18
2007-10-29	23	5.1	92.9	0.58	71.16	0	0	11.15
2007-10-30	0	4.42	95.97	0.57	88.04	0	0	11.13
2007-10-30	1	3.8	96.24	0.18	44.46	0	0	11.08
2007-10-30	2	3.21	97.24	0.14	83.98	0	0	11.02
2007-10-30	3	2.06	99.58	0.34	52.25	0	0	10.93
2007-10-30	4	0.88	99.98	0.44	138.12	0	0	10.9
2007-10-30	5	-0.72	100	0.33	145.54	0	0	10.79
2007-10-30	6	-0.68	100	0.33	73.74	0	0	10.67

2007-10-30	7	-0.85	100	0.61	57.3	63.91	0	10.49
2007-10-30	8	2.57	93.77	0.49	76.9	195.69	0	10.35
2007-10-30	9	6.33	73.58	0.42	172.42	313.84	0	10.23
2007-10-30	10	8.79	61.14	0.85	175.09	398.02	0	10.18
2007-10-30	11	11.17	51.37	1.08	249.25	446.8	0	10.17
2007-10-30	12	12.8	44.03	1.33	305.93	420.01	0	10.23
2007-10-30	13	13.75	39.34	0.89	96.77	392.37	0	10.37
2007-10-30	14	14.23	37.26	0.78	154.5	298.31	0	10.7
2007-10-30	15	14.47	36.58	0.64	250.09	173.78	0	10.99
2007-10-30	16	14.29	35.85	0.03	253.41	36.31	0	11.25
2007-10-30	17	10	47.51	0.11	242.71	0	0	11.56
2007-10-30	18	6.66	61.68	0.2	66.62	0	0	11.71
2007-10-30	19	3.33	75.6	0.2	68.3	0	0	11.73
2007-10-30	20	1.36	83.93	0.63	82.48	0	0	11.73
2007-10-30	21	-0.32	91.56	0.7	72.07	0	0	11.67
2007-10-30	22	-1.13	94.38	0.59	81.58	0	0	11.48
2007-10-30	23	-1.34	94.17	0.82	82.69	0	0	11.31
2007-10-31	0	-2.15	95.82	0.89	81.68	0	0	11.15
2007-10-31	1	-2.76	97.15	0.84	83.61	0	0	10.97
2007-10-31	2	-3.37	98.76	0.79	77.3	0	0	10.84
2007-10-31	3	-3.94	98.3	0.81	73.83	0	0	10.64
2007-10-31	4	-4.07	99.96	0.6	69.31	0	0	10.41
2007-10-31	5	-4.03	99.66	0.88	59.71	0	0	10.25
2007-10-31	6	-4.58	99.96	0.54	41.94	0.02	0	10.12
2007-10-31	7	-3.94	99.34	0.53	35.89	55.47	0	9.89
2007-10-31	8	-1.13	94.61	0.32	51.47	180.94	0	9.71
2007-10-31	9	1.97	88.68	0.27	53.56	298.55	0	9.58
2007-10-31	10	4.55	80.52	0.42	133.35	380.44	0	9.44
2007-10-31	11	6.8	70.92	0.53	82.13	436.47	0	9.41
2007-10-31	12	8.93	61.34	0.71	113.41	432.67	0	9.46
2007-10-31	13	10.46	53.28	0.83	100.29	388.6	0	9.61
2007-10-31	14	11.55	49.98	0.98	108.4	279.76	0	9.85
2007-10-31	15	11.99	49.12	0.7	119.76	124.4	0	10.15
2007-10-31	16	10.88	56.49	0.66	178.39	21.92	0	10.41
2007-10-31	17	8.99	63.62	0.3	243.34	0	0	10.68
2007-10-31	18	7.04	71.9	0.11	54.24	0	0	10.85
2007-10-31	19	5.55	79.6	0.46	144.66	0	0	10.9
2007-10-31	20	5.33	81.49	0.47	191.62	0	0	10.92
2007-10-31	21	5.72	82.56	0.44	81.32	0	0	10.9
2007-10-31	22	6.62	84.69	1.01	183.94	0	0	10.88
2007-10-31	23	6.13	86.11	0.4	145.98	0	0	10.8
2007-11-01	0	5.24	89.55	0.36	103.23	0	0	10.76
2007-11-01	1	4.26	93.06	0.61	88.31	0	0	10.7
2007-11-01	2	3.12	93.67	0.72	63.27	0	0	10.62
2007-11-01	3	2.39	96.39	0.58	98.23	0	0	10.55
2007-11-01	4	0.67	99.74	0.77	64.55	0	0	10.44
2007-11-01	5	0.68	98.45	0.41	124.1	0	0	10.36
2007-11-01	6	-0.49	99.83	0.28	62.79	0	0	10.26
2007-11-01	7	0.76	98.41	0.52	195.87	48.3	0	10.19
2007-11-01	8	5.91	85.76	0.41	129.66	181.3	0	10.04

2007-11-01	9	10.78	58.98	0.99	133.17	308.64	0	9.93
2007-11-01	10	12.94	45.96	2.59	190.5	376.65	0	9.81
2007-11-01	11	14.24	39.75	3.24	187.74	327.42	0	9.81
2007-11-01	12	13.75	44.07	2.07	39.27	253.92	0	9.94
2007-11-01	13	13.77	41.44	1.36	56.36	271.62	0	10.11
2007-11-01	14	14.44	34.01	1.3	71.38	282.43	0	10.31
2007-11-01	15	14.42	33.42	0.37	138.97	115.99	0	10.57
2007-11-01	16	14.11	33.51	0	157.88	28.68	0	10.81
2007-11-01	17	9.58	47.31	0.14	121.32	0	0	10.96
2007-11-01	18	6.14	60.82	0.26	53.48	0	0	11.08
2007-11-01	19	3.25	71.96	0.53	64.69	0	0	11.13
2007-11-01	20	1.75	79.14	1.01	72.89	0	0	11.1
2007-11-01	21	0.38	83.05	0.5	79.54	0	0	11.03
2007-11-01	22	-0.32	84.32	0.63	73.1	0	0	10.92
2007-11-01	23	-1.08	87.72	0.58	79.87	0	0	10.83
2007-11-02	0	-1.86	88.48	0.56	56.07	0	0	10.67
2007-11-02	1	-2.69	92.08	0.76	54.1	0	0	10.46
2007-11-02	2	-3.57	93.68	0.75	54.49	0	0	10.3
2007-11-02	3	-3.6	92.41	0.67	49.25	0	0	10.18
2007-11-02	4	-4.55	94.8	0.09	52.46	0	0	9.97
2007-11-02	5	-4.77	93.72	0.67	61.78	0	0	9.79
2007-11-02	6	-4.75	93.17	0.63	69.27	0	0	9.62
2007-11-02	7	-4.48	94.6	0.43	45.67	50.36	0	9.43
2007-11-02	8	-1.92	88.62	0.72	57.62	182.77	0	9.27
2007-11-02	9	1.25	84.93	0.78	77.97	300.29	0	9.09
2007-11-02	10	4.41	71.2	0.53	114.38	386.35	0	8.93
2007-11-02	11	7.17	58.19	0.94	150.02	420.24	0	8.88
2007-11-02	12	9.45	48.41	0.77	168.52	423.77	0	8.92
2007-11-02	13	10.9	43.43	0.74	88.78	377.35	0	9.12
2007-11-02	14	11.58	41.21	0.44	138.88	226.7	0	9.34
2007-11-02	15	11.22	45.9	1.3	169.91	123.5	0	9.6
2007-11-02	16	10.31	48.87	0.88	169.38	32.26	0	9.87
2007-11-02	17	8.66	52.38	0.31	182.52	0	0	10.12
2007-11-02	18	7.19	58.36	0.27	217.07	0	0	10.26
2007-11-02	19	5.04	65.18	0.27	183.22	0	0	10.33
2007-11-02	20	2.28	79.52	0.06	123.6	0	0	10.34
2007-11-02	21	1.67	84.94	0.33	187.84	0	0	10.29
2007-11-02	22	0.69	88.36	0.74	68.98	0	0	10.21
2007-11-02	23	0.24	90.08	0.21	71.27	0	0	10.16
2007-11-03	0	-0.19	92.16	0.64	77.64	0	0	9.97
2007-11-03	1	0.22	93.69	0.77	95.96	0	0	9.86
2007-11-03	2	3.85	85.7	1.02	129.87	0	0	9.73
2007-11-03	3	4.52	77.45	0.87	120.49	0	0	9.62
2007-11-03	4	0.87	95.36	0.59	70	0	0	9.48
2007-11-03	5	1.03	95.43	0.56	112.48	0	0	9.4
2007-11-03	6	6.26	75.44	1.56	196.99	0	0	9.32
2007-11-03	7	7.39	69.33	1.69	205.21	45.02	0	9.2
2007-11-03	8	9.19	61.4	1.19	188.77	116.48	0	9.13

APPENDIX D: WORKING METHOD

Food and Environmental Quality Laboratory
Washington State University FEQL Project Number: 1207

WORKING ANALYTICAL METHOD
DETERMINATION OF RESIDUES OF MITC IN CHARCOAL AIR SAMPLE CARTRIDGES BY GC-NPD

Introduction

This method is suitable for use with both 1 g and 2 g charcoal cartridges. The charcoal is sonicated in extraction solvent and then filtered through a syringe filter for analysis by gas chromatography with nitrogen-phosphorus detection (NPD, also known as thermionic specific detector TSD).

The following extraction method has been previously validated for use in MITC air sampling studies. Refer to the following projects:

FEQL-NG-0605, MITC residential community air assessment; south Franklin County, WA, and FEQL-1106 Optimizing fumigant efficacy while minimizing off-target volatile emissions.

For this project, a different GC capillary column and chromatography program will be used. The revised method will be validated in triplicate at three levels of MITC concentration.

Method

1. Remove a set of charcoal air samples from the -80°C freezer. Immediately after taking the samples from the freezer, remove at least one cap from the end of the sample cartridge to prevent pressure build-up in the cartridge. Place the sample cartridge in a labeled Corex® tube to contain any spills and allow samples to warm to room temperature.

2. For each analytical set, prepare at least one fortified recovery sample by adding a known amount of MITC solution (in methanol) to an appropriate size cartridge. Fortification levels will range from the methods limit of quantitation (LOQ, 0.25 µg MITC) to concentrations that exceed the highest residues encountered.

3. For each analytical set, include a control, blank cartridge of the appropriate size.

4. Carefully empty the contents of each cartridge (glass wool, plug, and charcoal) into labeled 25 mL screw-cap Corex® tubes.

5. Add 5 mL extraction solvent (80/20 mixture of ethyl acetate/carbon disulfide) to each tube by volumetric pipette, and then seal and place tube on ice (the solvent-charcoal interaction is exothermic). Prepare the extraction solvent in one liter batches by individually adding 800 mL of ethyl acetate to 200 mL carbon disulfide using graduated cylinders. Store the extraction solvent in a one-liter, screw-cap glass bottle in the dark when not in use to avoid decomposition of carbon disulfide.

6. Sonicate the samples for ca. two minute in a water-filled sonic bath (e.g.VWR AquaSonic®). After sonication, chill the samples in ice before filtering.

7. Use a disposable glass Pasteur pipette to transfer an aliquot (~1-2 mL) to a plastic syringe

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fitted with a 0.45 µm Teflon membrane filter (Whatman®). Collect filtered sample in an appropriately labeled autosampler vial for analysis by gas chromatography (GC).

8. The determination of MITC will be performed by gas chromatography with nitrogen-phosphorus thermionic detection (NPD). Conditions for determination are as follows:

   Instrument: A Varian Star 3400CX gas chromatograph (or equivalent) with nitrogen phosphorus detection (NPD) and 8200CX Autosampler will be used for residue detection and quantification. Integration of chromatographic data will be performed using Varian Star Chromatography Workstation software.

Column:	EC-WAX, 15m x 0.53mm, 1.2 µm film thickness
Carrier gas:	Ultrapure helium, column flow rate 2-4 mL/min.
Temperatures:	Detector: 260°C
	Injector port: 55 to 225°C (rate: 250°C per min), hold for 5 min.
	Oven program
	Initial: 55°C, hold for 0.09min.
	Ramp 10°C/min to 90°C, hold for 5 min.
Injection volume:	2 µl

   Retention time: MITC retention time is based on the observed retention times of external calibration standards in each set and dependent upon instrument used.
   Detector Gases: Typical NPD detector gas flows will be set at approximately 3-4 mL/min hydrogen, ca. 170 mL/min air, and 25-30 mL/min makeup gas. The NPD bead current will be adjusted as necessary from 3.0 to 3.6 A.

9. MITC residue concentrations will be calculated using external MITC linearity standards dissolved in the 80/20 ethyl acetate/carbon disulfide solvent mixture. A standard curve will be generated for each analytical set and all samples will be bracketed with MITC calibration standards.

Submitted by:

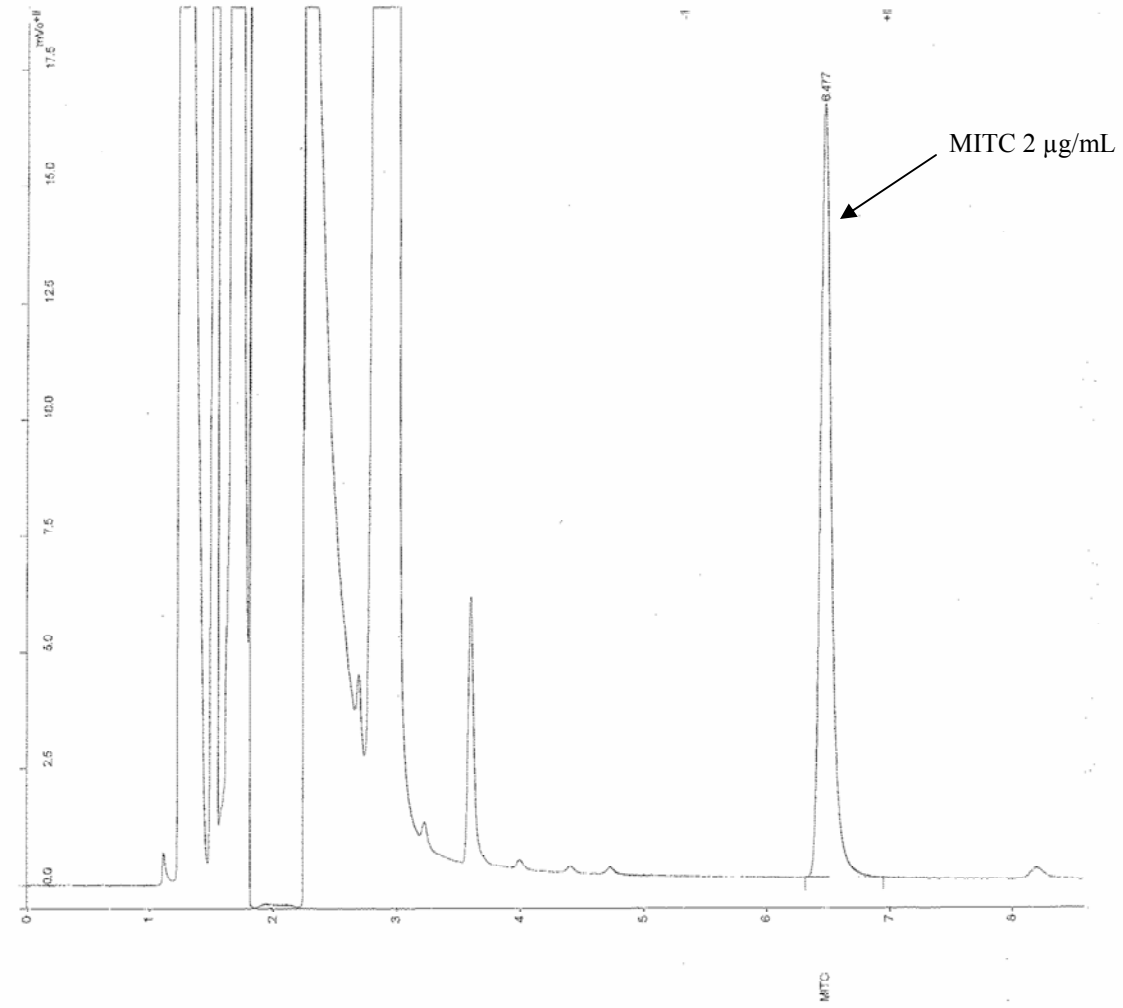
Jane LePage, Analyst — Date: 9/20/07

Approval:

Vincent R. Hebert
Project Coordinator — Date: 9-20-07

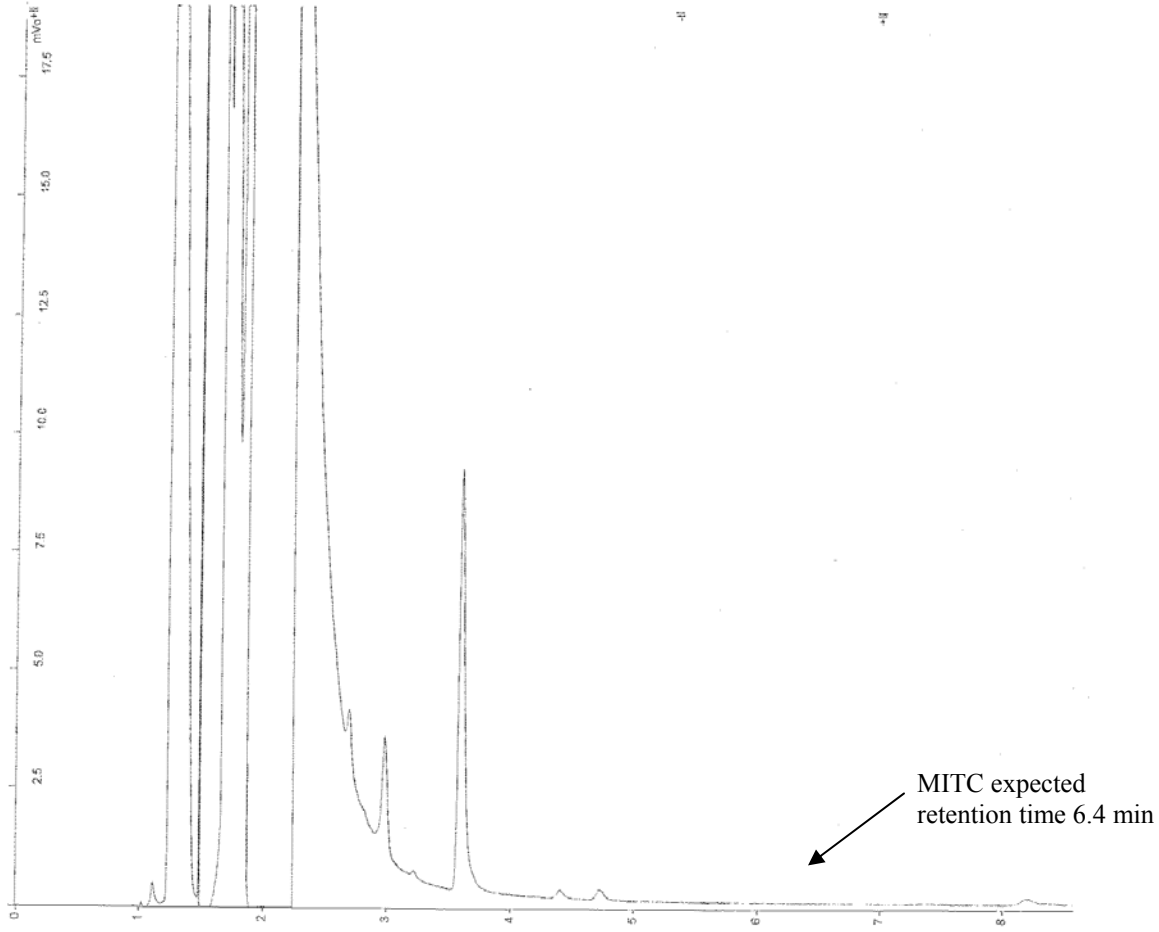
APPENDIX E: REPRESENTATIVE CHROMATOGRAMS

Figure 8
MITC Standard, 2 µg/mL
solution reference number 131667



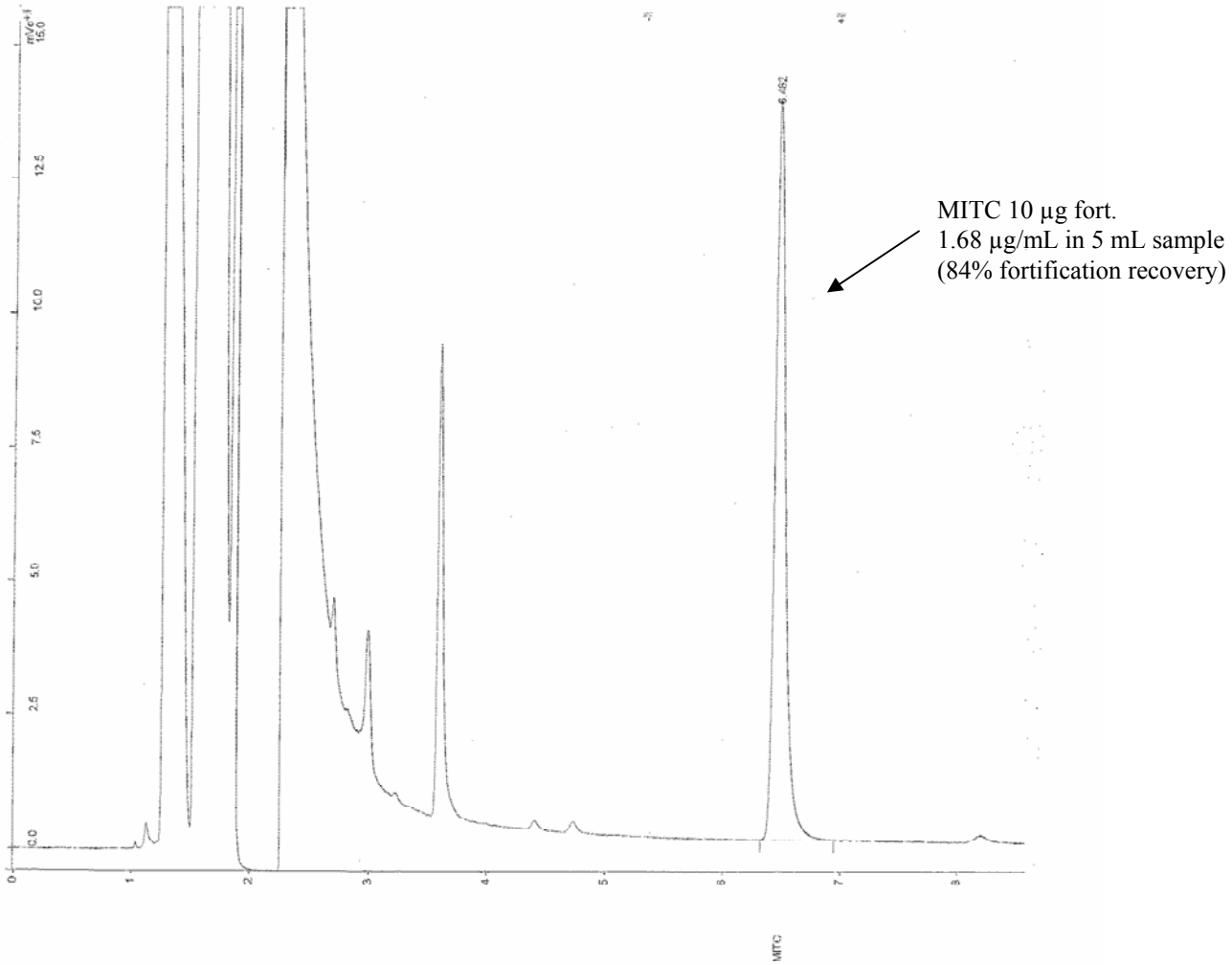
Peak No.	Peak Name	Result (ng)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	MITC	100.0000	6.477	0.003	104459	BB	5.6	
	Totals:	100.0000		0.003	104459			

Figure 9
Control, 2 g cartridge
Sample ID: 1207A-2g-C26



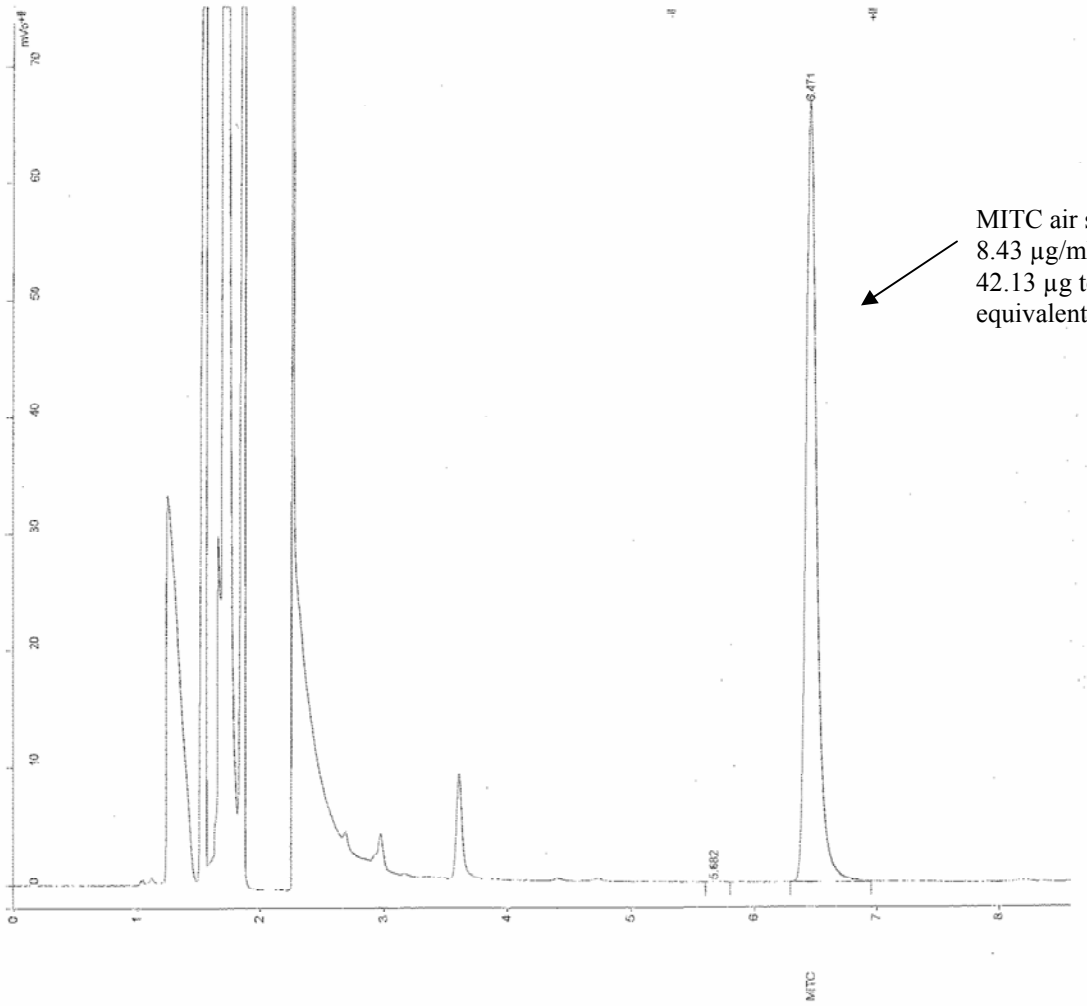
Peak No.	Peak Name	Result (ng)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
	Totals:	0.0000		0.000	0			

Figure 10
Fortified Sample, 2 g cartridge
Sample ID: 1207A-2g-FS24



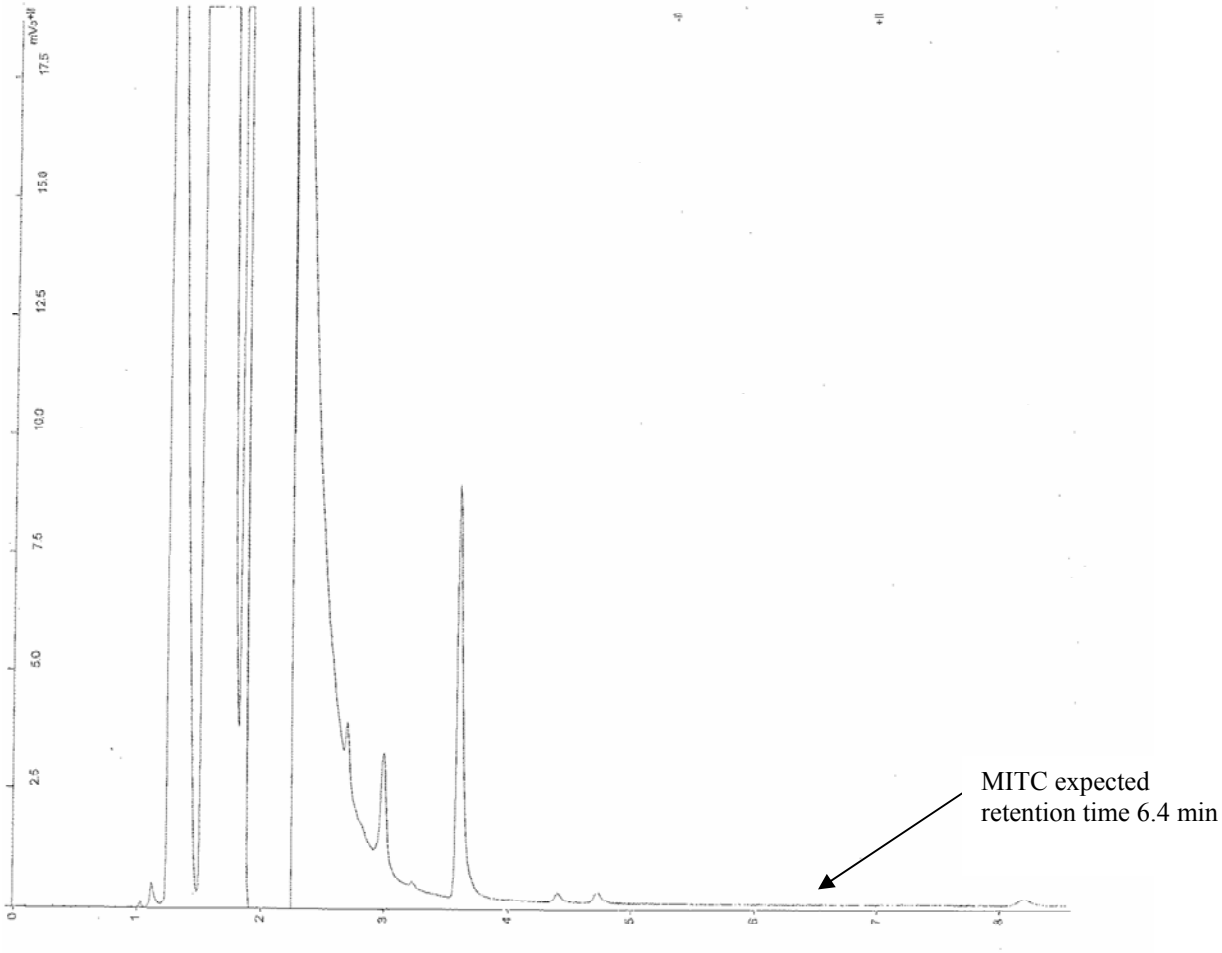
Peak No.	Peak Name	Result (ng)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	MITC	100.0000	6.482	0.008	85954	BB	5.5	
	Totals:	100.0000		0.008	85954			

Figure 11
Residential Air Sample, 2 g cartridge
Sample ID: S2-PM-R-S



Peak No.	Peak Name	Result (ng)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1		0.0413	5.682	0.000	173	BB	5.0	
2	MITC	99.9587	6.471	-0.003	418702	BB	5.6	
	Totals:	100.0000		-0.003	418875			

Figure 12
Trip Blank, 2 g cartridge
Sample ID: TB-PM-S



Peak No.	Peak Name	Result (ng)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
	Totals:	0.0000		0.000	0			