Final Report for the Project Titled "Monitoring of Air Toxic Particulates Pollutants from Heavily Trafficked New Jersey Turnpike: An Urban Community-Wide Project"

USEPA Agreement No. XA 97268501-2

Results of Targeted $PM_{2.5}$, Total Suspended Particles (TSP) and Polycyclic Aromatic Hydrocarbons (PAHs)

New Jersey Meadowlands Commission

Meadowlands Environmental Research Institute

1 DeKorte Park Plaza, Lyndhurst, NJ 07071

September 30, 2010

Summary

This study was specifically designed to identify ambient air quality gradients of particulate matter ($PM_{2.5}$), total suspended particles (TSP) and associated 16 Polycyclic Aromatic Hydrocarbons ($\sum_{16}$ PAHs) at three different distances (50m, 100m and 150m) from the New Jersey Turnpike (NJTPK) which is one of the busiest highways in the USA. In addition to spatial variation, these ambient air pollutants were also investigated for their seasonal/diurnal variations with meteorological parameters, and traffic counts. Ambient air samples were collected by a High Volume air sampler and a Partisol-Federal Reference Method (FRM) $PM_{2.5}$ low volume air sampler for periods of 24 hours, every 6 days between September 2007 and September 2008. The collected $PM_{2.5}$ samples were analyzed for mass concentration and 10 trace metals. The concentration of $PM_{2.5}$ did not show a significant difference within 150 m distance from the highway and showed higher concentration in the winter than summer. TSP and sixteen PAH concentrations were highest at the nearest site (50 m) from the highway, and decreased with distance ($p<0.001$). This gradient was mainly attributed to the emissions from diesel engine exhausts since a significant correlation was found between the number of diesel vehicles and concentrations of $\sum_{16}$PAH ($p<0.01$). The average of gas phase $\sum_{16}$PAH concentration (21.03 ng/m^3) along the gradient accounts for ~85% of the total atmospheric $\sum_{16}$PAH concentration (24.49 ng/m^3), which is 5-6 times higher than particle phase (3.42 ng/m^3). The concentrations of $\sum_{16}$PAH and TSP were lower in winter season than summer. In addition, more volatile PAHs concentrations were significantly higher in the summer than in the winter ($p<0.01$), on the other hand, non volatile PAHs concentrations were significantly higher in the winter than summer ($p<0.01$). The concentration of weekday

TSP and PAHs concentrations are higher than that of the weekend. This is supported by the number of traffic count around the local area. But there is no weekly effect on $PM_{2.5.}$ The distance gradient pattern of toxic PAH concentration and the significant relationship with traffic counts indicates that traffic emissions on the highway is the foremost source of PAHs , thus, people living in the immediate vicinity of highways are imposed at elevated health risks.

TABLE OF CONTENTS

1. INTRODUCTION

Road traffic has become the greatest source for air pollution in many urban areas (Janssen et al., 2001; Morawska et al., 1993; Hitchins et al., 2001 and Zhu et al., 2002). Janssen et al. (2001) measured particle mass concentration and elemental composition of particles at two sites near a major road and at two sites at background locations. Zhu et al. (2002) measured ultrafine particles (UFP) and BC near highways in Los Angeles and found that UFP and BC concentrations were decreased exponentially within 150 m downwind from highways. Reoponen et al. (2003) also observed the most distinct concentration gradient of UFP, but not $PM_{2.5}$, within 1600 m of highways in Cincinnati. A number of epidemiological studies have shown that traffic-related particles such as $PM_{2.5}$, PM_{10} and black carbon (BC) within 300 m of roadways are associated with the prevalence of asthma or increased respiratory symptoms (Brunekreef et al., 2001 and Pfeffer, 1994).

While extensive studies have focused on the measurements of polycyclic aromatic hydrocarbons (ΣPAHs) from vehicular emissions and in tunnels and urban environments (Miguel et. al., 1998 and Marr et. al, 2004), only a few studies revealed that each PAHs concentration vary spatially depending on the proximity to a major roadway or traffic volume. For example, Lee et al. (1995) reported that concentration of PAH (gas + particle phase) measured at the traffic-source were approximately 5.3 and 8.3 times higher than those measured in urban and rural atmospheres, respectively. Similarly, Fisher et al. (2000) found that the particle-bound ΣPAHs level was two times higher in high-traffic areas compared to low-traffic areas. While these studies provide evidence of spatial

variations for ΣPAHs concentrations in urban environments, they focused on short-term variations in ΣPAHs concentrations with a limited sample size and lacked seasonal effect on spatial variations of PAH concentrations. Furthermore, the relationships between traffic counts and ΣPAHs concentration by different distance from the highway have not been fully investigated.

2. OBJECTIVES

This project was designed to provide the necessary local air quality monitoring data and contribute to EPA's strategic objective to reduce the risk from toxic air pollutants in the urban area. The proposed work analyzed and examined the spatial and seasonal patterns of $PM_{2.5}$, TSP and Σ_{16}PAHs concentration gradients near one of the most heavily traveled highways in the United States, the New Jersey Turnpike (NJTPK) and to investigate the influence of the traffic density/pattern and meteorological conditions on airborne-contaminant levels. Another objective was to support the existing initiatives by the North New Jersey Transportation Planning Authority tasks 06/206 and 06/207 and by state agencies to determine conformity and assess human exposure and risk through transportation modeling and epidemiological studies.

3. MATERIALS AND METHODS

3.1 Description of Sampling Site

The sampling strategy was designed to capture the local concentrations of Hazardous Air Pollutants (HAP) by sampling along a gradient at 50, 100 and 150m from the median strip of the NJTPK (Figure 1). These three sampling sites were located in a southeastern direction of the NJTPK, along an unobstructed flat plain perpendicular to NJTPK, designed to capture a motor vehicle emissions gradient from the NJTPK. The sampling platforms at these three sites was fenced-in and constructed at a height of ~3 m above the ground and at least 5m away from any obstructions. Since the prevailing wind direction in the district is from Northwest, this configuration allowed us to determine the concentration gradient downwind from the traffic emission. The region upwind of the highway is a marsh area with no other particulate source.

3.2 Sampling

The 1-year long term and specified periods of summer/winter intensive samplings were successfully completed. As shown in Table 1, a total of 972 samples have been collected and there were less than 2.5% of sample losses due to the malfunction of $PM_{2.5}$ and Hi-Volume sampler (TE-PNY1123, Tisch Environmental, Inc., OH). The long-term samplings were conducted to collect 24-hours integrated (8:00 am to 8:00 am on the next day) Σ_{16}PAHs, TSP and $PM_{2.5}$ measurements on every sixth day starting on September 21, 2007 and ending on September 21, 2008. Intensive sampling was collected two times a day (each 12 hour sampling period) with the same methods in summer (between July and September) and winter (between January and March) in 2008.

Particulate phase-Σ_{16}PAHs and TSP were collected on the Glass fiber filter (GFF; 20×25 cm, pore size 0.7 μm) and gas-phase Σ_{16}PAHs were collected on two series of

PUF (polyurethane foam) plug (98.5× 10 cm) by using Hi-Vol. samplers. Prior to sampling, GFF filters were heated at 550 °C for 24 hours to eliminate organic species and PUF were extracted with acetone and petroleum ether for 24 hours, respectively. Three Hi-Volume samplers operated simultaneously at the three sampling locations with a flow rate of 0.6~0.8 m³/min, yielding individual sample volume of 900~1200 m^3. Digital manometer was used to measure a differential pressure (inch in H_2O) as well as temperature and atmospheric pressure before and after sampling for the flow measurement. After sampling, the GFF and PUF samples were wrapped in aluminum foil and stored in baked clean glass jar, respectively and stored in a freezer at -20 °C until extraction and analysis.

$PM_{2.5}$ samples were captured onto Teflon filters (diameter = 47 mm, pore size = 2.0 μm; Whatman), by a Well Impactor Ninety Six (WINS) impactor with a 2.5 μm cut-point (Partisol-FRM Model 2000, Thermo Electron Corporation, MA). Three $PM_{2.5}$ samplers operated at a sampling flow rate of 16.7 L/min, resulting in a total sampled air volume of 24 m³ for each sample.

3.3 Chemical Analysis

Both gas and particulate phase of sixteen PAH were analyzed in this study. Detailed accounts of the analytical protocols employed for the measurement of PAHs have been reported elsewhere (Gigliott et. al., 2000 and 2005) however a brief summary is given here. Prior to soxhlet extraction, the GFF and PUF samples were treated with a known amount of 5 deuterated compounds (naphthalene-d8, acenaphthene-d8, phenanthrene-d10, chrysene-d10, and perylene-d12) as a surrogated standard for the

recovery correction. Then, they were soxhlet-extracted with dichloromethane (DCM) and petroleum ether for 24 hours to measure particulate phase and gas phase Σ_{16}PAHs, respectively. The sample extract were reduced in volume by rotary evaporator and cleaned via elution through an alumina using hexane and the 2:1 mixture of DCM and hexane. The samples were then concentrated to approximately 200 μL under a gentle stream of high purity nitrogen and spiked with an internal standard made up of 2 deuterated compounds (anthracene-d10, and benzo(a)anthracene-d10) and analyzed by GC/MSD (Agilent 6890N GC/5975MSD). A HP-5MS (30m x 250μm x 0.25 μm) capillary column (Agilent, Palo Alto, CA) was used with helium as carrier gas and temperature programming from 55°C (1min) to 320 °C at 125°Cmin^{-1}. 1 μL was injected in the pulsed splitless mode into an injector. Sixteen PAHs are quantified by GC-MSD using selective ion monitoring (SIM) and the method of internal standards.

The gravimetric analysis was performed for $PM_{2.5}$ and TSP measurement by weighing the filters before and after sampling with a micro-balance at Environmental & Occupational Health Sciences Institute, Piscataway, NJ. The filters were equilibrated at a temperature of 20 ºC and a relative humidity of 30-40% in the equilibrating room for 24 hours before weighing.

3.4 Meteorological Information

The meteorological data during the sampling periods were concurrently collected from the Teterboro airport which is the closest weather station to the sampling site (Appendix I). The hourly wind speed, wind direction, ambient temperature, precipitation, and humidity data were averaged for the 24-h operation time. Seasonal meteorological

conditions were summarized in the supporting information (Table 2). In addition, information of a daily weather conditions such as sunny, cloudy, or foggy event was also collected from the Teterboro airport and further compared with the record on the sampling day.

3.5 Traffic Counts

The information of daily traffic flows passing the sampling site (between 16W-18W exits at New Jersey Turnpike) was available from the New Jersey Turnpike Authority. The 24-hour averaged traffic count was calculated for each sampling period (Appendix II). Since traffic was routinely counted separately on both directions of the highway, north and south bound traffic was combined to calculate the total counts of the passing vehicles. Traffic counts were classified into two categories; diesel powered trucks, gasoline powered vehicles, and total vehicles (diesel + gasoline). During the sampling periods, an average traffic flow at the sampling site was ~80,000 d^{-1} for gasoline powered cars and ~15, 000d^{-1} for diesel powered trucks (Figure 2).

3.6 Quality Control/Quality Assurance (QA/QC)

3.6.1. Hi Volume Air sampler

A calibration of flow rate was performed for the Hi-Volume sampler at least every three months and after motor maintenance by using a digital manometer and a calibration device (TE 5040 PUF Calibration Kit, Tisch. Environ. Inc., Cleveland, OH). The calibration curve for the sample flow rate measuring device was then determined by

calculating the slope, y-intercept and correlation coefficients of the curve by linear least squares regression analysis (Appendix III).

3.6.2 Precision

Precision is expressed as the relative standard deviation (RSD) of duplicate analyses of spiked quality control sample, was indicated by the reproducibility of replicate analyses. The average of RSD for 16 PAHs is shown at Table 3.

3.6.3 Accuracy

The recovery experiments were carried out to test the accuracy of the GC-MS procedure by using standard reference materials (SRMs) (Table 4). Blank and matrix spikes also used periodically to evaluate method performance and matrix effects. A known amount of the surrogate spike was added to every sample and blank prior to extraction. The recoveries of analytes from SRMs, blank spikes and matrix spikes represented actual recovery and used to evaluate method performance.

3.6.4 PUF Breakthrough Test

Two series of PUF cartridges were used to collect gas phase of ΣPAHs. To examine PAH breakthrough on PUF adsorbent, each cartridge was extracted separately (1^{st} and 2^{nd} cartridge) and analyzed individually by GC/MS. The total amounts (ng) of PAHs collected on each cartridge were calculated and compared for the breakthrough (%). As shown in the Table 5, the volatile ΣPAHs (e.g., Naphthalene, Acenaphthene, Acenaphthylene, and Fluorene) have a higher breakthrough (~50%) than the less volatile

compounds such as Phenanthrene and Anthracene. It results from the high volatility of the compounds. Some portion of them passed through PUF adsorbent, not trapping in PUF. On the other hands, semi-volatile compounds such as Fluoranthene, and Pyrene are not found in the second PUF cartridge, indicating that all gaseous Fluoranthene and Pyrene are trapped in the first PUF cartridge. As most of the high molecular ΣPAHs (e.g., Benz[a]anthracene and the higher molecular PAHs than Benz[a]anthracene) exist in the particular phase, those compounds were not detected in the gas phase.

1.6.5 Completeness

Completeness is the ratio of the number of sample results to the total number of samples analyzed with a specific matrix and/or analysis. Following completion of the analytical testing, the percent completeness will be calculated by the following equation:

$$Completeness = \frac{V}{P} \times 100$$

Where V is the number of valid measurement; P is the number of planned measurements. Most of target compounds at three sampling sites showed higher than 95% except $PM_{2.5}$, which is caused by instrumental malfunction at site B (Table 1).

4. RESULTS AND DISCUSSION

4.1. Spatial and Seasonal Variation of $PM_{2.5}$, TSP and ΣPAHs

Spatial and seasonal effects on $PM_{2.5}$, TSP and ΣPAHs concentrations were investigated and presented in the Figure 3 and Appendix IV-1, 3, 5 and 6). A year

average concentration range of $PM_{2.5}$, TSP and PAHs at different distances (50m, 100m, and 150m) from the NJ Turnpike were shown on Table 6. The averages of $\sum_{16}$PAHs and TSP concentration decreased significantly with increasing distance from the highway for a year sampling period but there are no significant differences in $PM_{2.5}$ concentration with respect to increased distance from the highway for the three different distance sampling locations A-C ($p > 0.05$). 24-hour average $PM_{2.5}$ concentrations at each sites (as seen in Table 6) were below the US 24-h $PM_{2.5}$ ambient air quality standard (65μg/m^3) and also lower than EPA annual standard (15μg/m³). In contrast to $PM_{2.5}$, TSP and ΣPAHs concentration were highest in the immediate vicinity of the highway (50 m) ($p<0.05$). The average concentration of TSP is showing 51.68, 39.77 and 36.67 μg /m³, which ranged from 6 to 151.0 μg/m³. Each PAH concentrations (sum of gas and particle phases) in this study were higher compared to other suburban sites less impacted by heavy traffic (Gigliotti et al., 2000 and Li et al., 2009). A distinct concentration gradient of total PAH concentrations by distance was also seen for most of the ΣPAHs. Phenanthrene was found to be the highest concentration, 12.06 ng/m³ at 50m and fluoranthrene and fluorene were second and thi rd highest with concentrations of 4.00 and 3.77 ng/m³, respectively. The gas phase of ∑PAHs were dominated by fluorene, phenanthrene while particulate phase of ∑PAHs were dominated by the fluoranthene, pyrene, chrysene, indeno(1,2,3-c,d)pyrene, benzo(g,h,i) perylene (Figure 4). The average gas phase ∑PAHs concentrations in three sites were 21.0 ng/m^3 (range from 4.5 to 97.3 ng/m^3) and account for ~85% of the total atmospheric concentration (23.49 ng/m^3).

Seasonal differences of $PM_{2.5}$, TSP and ΣPAHs were also observed within 150 m of the highway (Figure 3). The highest $PM_{2.5}$ concentration was observed in the summer

and lowest in the spring and winter season which is caused by more aerosol formation in the summer and coagulation in winter. A minimal decrease of average $PM_{2.5}$ concentrations was observed between 50 and 100 m from the highway in the winter, however, $PM_{2.5}$ did not significantly vary by distance in the summer. TSP concentration was highest in the spring due to pollen effect and lowest in the winter (Figure 3) due to other effect like as pollen. The presence of this pollen particle was likely to be associated with high level of ∑PAHs and TSP concentrations measured in the spring. As supported by Okuyama et al (2007), fine particles and gaseous ΣPAHs can be highly adsorbed on the surface in spring season caused by enhanced surface area by dispersed pollen particles. In addition, the higher PAHs concentrations in the spring and summer compared to the winter were likely due to the increase of evaporation of semi-volatile compounds from particles as the temperature increase. The steeper concentration gradient of ∑PAHs between the nearest distances (50-100m) of the highway was in summer. However the concentrations differences in ∑PAHs among three distances were not significant in winter, indicating the potential of long-range transport of PAH in the winter. The result of two intensive sampling at both summer and winter PAH data were presented in Table 7. The concentration of the semi-volatile compounds (such as Acenaphthylene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, and Pyrene) was higher in the summer than in the winter while the non volatile compounds (such as Benz[a]anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo[a]pyrene, Indeno[1,2,3-cd]pyrene, Dibenzo[a,c]anthracene, and Benzo[g,h,i]perylene) and the very volatile compounds (such as Naphthalene, and Acenaphthene) showed the higher concentrations in the winter compared to the summer.

Beyer et al. (2003) described the shorter travel distance of PAH in the summer than winter due to the combined effect of temperature dependence of chemical reactivity with the OH radical in the air and deposition rates. This result further implies that the exposure gradient of PAH near highways would differ by season.

4.2 Weekday and Weekend Variation of $PM_{2.5}$, TSP and ΣPAHs

In this study, traffic emission was considered the major source of measured air pollutant level; they were expected to have a correlation with traffic counts.

Consistent with other traffic studies, $PM_{2.5}$ levels were not significantly influenced by total traffic count (Figure 5), supporting the previous findings on regional sources of $PM_{2.5}$ (Martuzevicius et al., 2004 and Levy et al., 2003). Moderate correlations of ΣPAHs and TSP with total traffic counts as well as diesel and gasoline vehicle counts, indicated the important influence of traffic counts on measured ΣPAHs and TSP levels near the highway (Figure 5 and 6). The higher ΣPAHs and TSP concentrations on weekdays than on weekends are presumably due to higher diesel traffic counts on weekdays (Figure 7), implying that diesel vehicles might have a greater influence on elevated concentration, compared to gasoline vehicles.

4.3 Daily Variation of $PM_{2.5}$, TSP and PAHs by Intensive Sampling

Diurnal effect on the $PM_{2.5}$, TSP and ΣPAHs were also investigated during both summer and winter by intensive sampling (Figure 8, Appendix IV-2, 4, 7 & 8). Although there are no statistical differences for the diurnal concentration of $PM_{2.5}$ and TSP, but their concentrations were slightly higher in the night than day time. However,

concentration of PAHs were significantly higher ($p<0.05$) in the night than day time at all of three sampling sites (Table 8).

ACKNOWLEDGEMENT

The authors are thankful to Kyung H. Jung, Joe Grzyb for the fieldwork and chemical analysis. We also thank the New Jersey Turnpike Authority for providing highway traffic data. The study was made possible with the cooperation of Williams Gas Pipeline Company that provided access and spaces for measurement stations. This project was supported by the Environmental Protection Agency (Grant No. *XA 97268501-2*), "Monitoring of Air Toxic Particulate Pollutants from Heavily Trafficked New Jersey Turnpike: An Urban Community-Wide Project".

REFERENCES

Beyer, A.; Wania, F.; Gouin, T.; Mackay, D.; Matthies, M., Temperature dependence of the characteristic travel distance. *Environ. Sci. Technol.* **2003,** *37*, (4), 766-771.

Brunekreef, B.; Holgate, S., Air pollution and Health. *The Lancet* **2002,** *360*, (9341), 1233-1242.

Fischer, P.; Hoek, G.; Van Reeuwijk, H.; Briggs, D.; Lebret, E.; Van Wijnen, J.; Kingham, S.; Elliott, P., Traffic-related differences in outdoor and indoor concentrations of particles and volatile organic compounds in Amsterdam. *Atmospheric Environment* **2000,** *34*, (22), 3713-3722.

Gigliotti, C.L.; Dachs, J.; Nelson, E.D.; Brunciak, P.A.; Eisenreich, S.J. Polycyclic Aromatic Hydrocarbons in the New Jersey Coastal Atmosphere. *Environ. Sci. Technol*. **2000**, 34, 3547-3554.

Gigliotti, C.L.; Totten, L.; Offenberg J.H.; Dachs, J.; Nelson, E.D.; Glenn, T.R. and Eisenreich, S.J. Atmospheric Concentrations and deposition of Polycyclic Aromatic Hydrocarbons to the Midatlantic east coast region. *Environ. Sci. Technol*. **2005**, 39, 5550-5559.

Harssema ,Hendrik et al, Assessment of exposure to traffic related air pollution of children attending schools near motorways, California. *Atmospheric Environment* **2001,** *35*, (22), 3875-3884.

J. Hitchins, L. Morawska, R. Wolff and D. Gilbert, Concentrations of submicrometre particles from vehicle emissions near a major road. *Atmos. Environ.*, 2000, 34, 51-59.

Janssen, Nicole A.H.; van Vliet, Patricia H.N.; Aarts, F..; Hitchins, J.; Morawska, L.; Wolff, R.; Gilbert, D, Concentrations of submicro particles from vehicle emissions near a major road. *Atmospheric Environment* **2001,** *35*,
(22), 3875-3884.

Lee, W.; Wang, Y.; Lin, T.; Chen, Y.; Lin, W.; Ku, C.; Cheng, J., PAH characteristic in the ambient air of traffic-source. *Science of the Total Environment, The* **1995,** *159*, (2-3), 185-200.

Levy, J.; Bennett, D.; Melly, S.; Spengler, J., Influence of traffic patterns on particulate matter and polycyclic aromatic hydrocarbon concentrations in Roxbury, Massachusetts. *Journal of Exposure Science and Environmental Epidemiology* **2003,** *13*, (5), 364-371.

Li, Z.; Porter, E.N.; Sjodin, A.; Needham, L.L.; Lee S.; Russel A.G. and Mulholland, J. Chracterization of PM2.5- bound Polycyclic Aromatic Hydrocarbons in Atlanta-Seasonal variations at urban, suburban, and rural ambient air monitoring sites. *Atmospheric Environment* 2009, 43, 4187-4193.

Morawska, L.; Thomas, S.; Gilbert, D.; Greenaway, C.; Rijnders, E., A study of the horizontal and vertical profile of submicrometer particles in relation to a busy road. *Atmospheric environment* **1999,** *33*, (8), 1261-1274.

Marr, L.; Grogan, L.; Wohrnschimmel, H.; Molina, L.; Molina, M.; Smith, T.; Garshick, E., Vehicle traffic as a source of particulate polycyclic aromatic hydrocarbon exposure in the Mexico City metropolitan area. *Environ. Sci. Technol.* **2004,** *38*, (9), 2584-2592.

Martuzevicius, D.; Grinshpun, S.; Reponen, T.; G?ny, R.; Shukla, R.; Lockey, J.; Hu, S.; McDonald, R.; Biswas, P.; Kliucininkas, L., Spatial and temporal variations of PM2. 5 concentration and composition throughout an urban area with high freeway density in the Greater Cincinnati study. *Atmospheric Environment (Oxford, England: 1994)* **2004,** *38*, (8), 1091.

Miguel, A.; Kirchstetter, T.; Harley, R.; Hering, S., On-road emissions of particulate polycyclic aromatic hydrocarbons and black carbon from gasoline and diesel vehicles. *Environ. Sci. Technol.* **1998,** *32*, (4), 450-455.

Okuyama, Y.; Matsumoto, K.; Okochi, H.; Igawa, M., Adsorption of air pollutants on the grain surface of Japanese cedar pollen. *Atmospheric Environment* **2007,** *41*, (2), 253-260.

Pfeffer, Hans_Urich, Ambient air concentrations of pollutants at traffic related sites in urban areas of North Rhine-Westphalia, Germany. *The Science of the Total Environment* 1994, 146/147, 263-273.

Reponen, T.; Grinshpun, S.; Trakumas, S.; Martuzevicius, D.; Wang, Z.; LeMasters, G.; Lockey, J.; Biswas, P., Concentration gradient patterns of aerosol particles near interstate highways in the Greater Cincinnati airshed. *Journal of Environmental Monitoring* **2003,** *5*, (4), 557-562.

Zhu, Y.; Hinds, W.; Kim, S.; Shen, S.; Sioutas, C., Study of ultrafine particles near a major highway with heavy-duty diesel traffic. *Atmospheric Environment* **2002,** *36*, (27), 4323-4335.

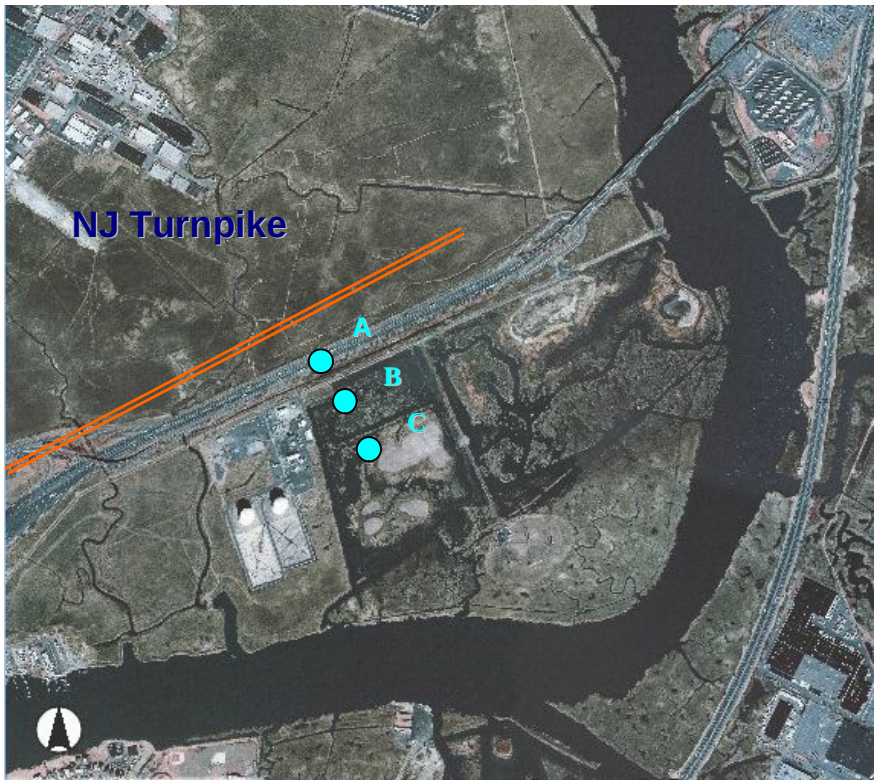


Fig. 1. Three air pollution monitoring stations (A_50m, B_100m and C_150m) in the vicinity of New Jersey Turnpike between exit No. 16W and 18W.

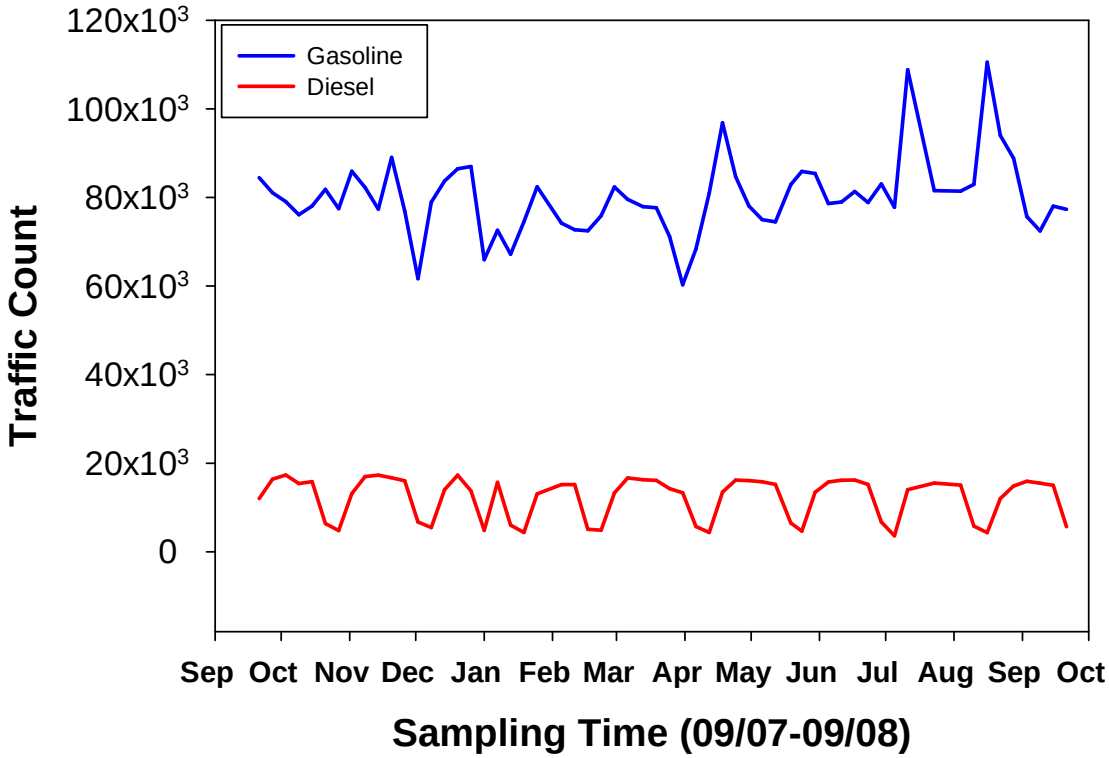


Fig. 2. Traffic counts including both gasoline and diesel vehicles between 16W and 18W at New Jersey Turnpike during a year sampling period.

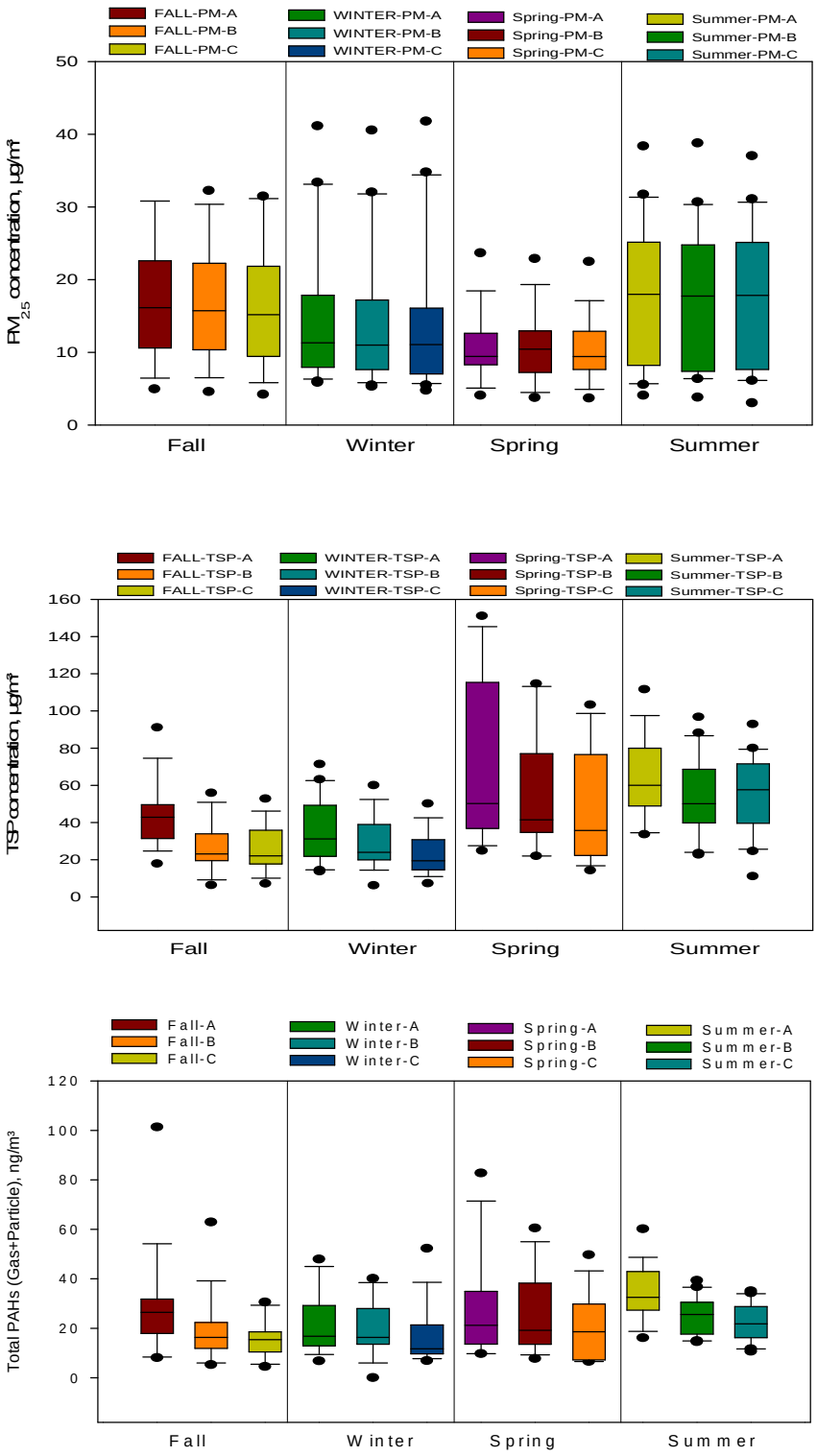


Fig. 3. Box and Whisker plots of $PM_{2.5}$, TSP and $\sum_{16}$PAHs for a year sampling period (09/07-09/08).

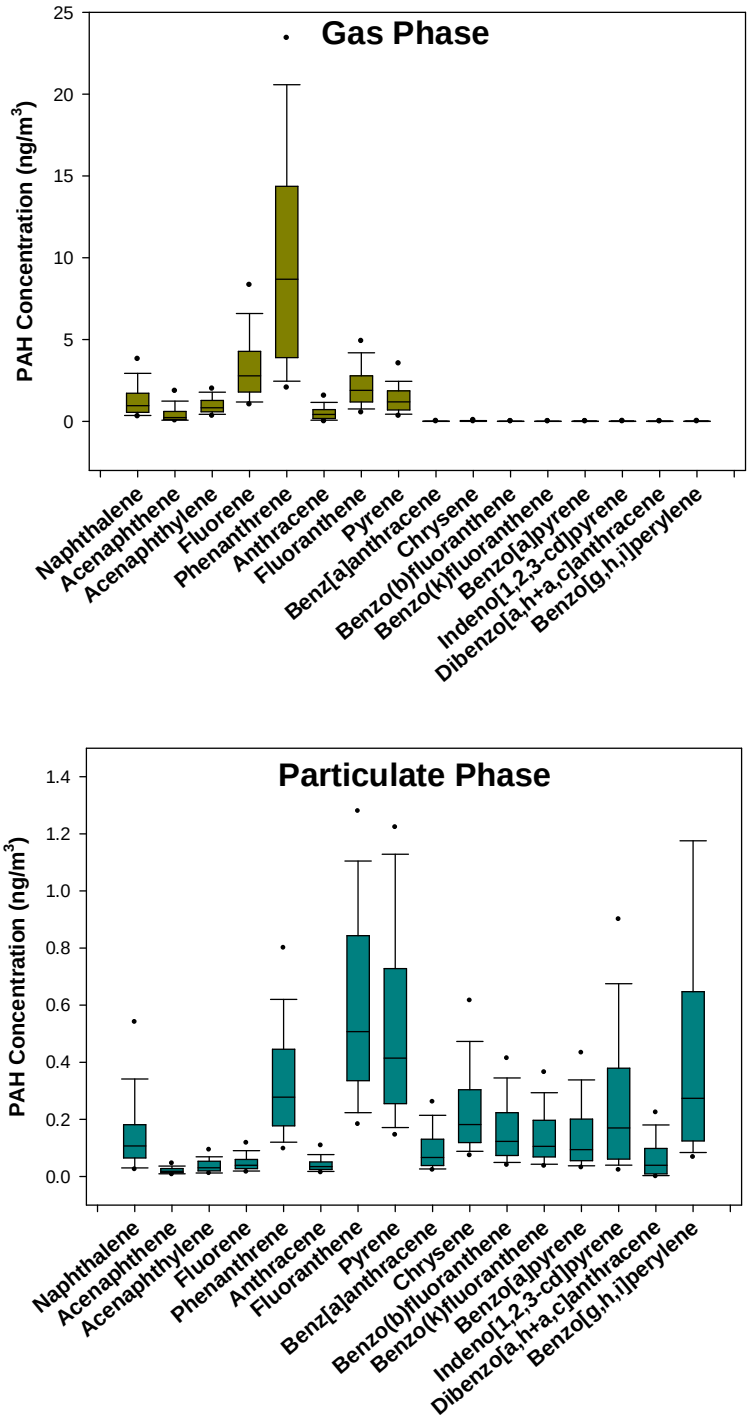
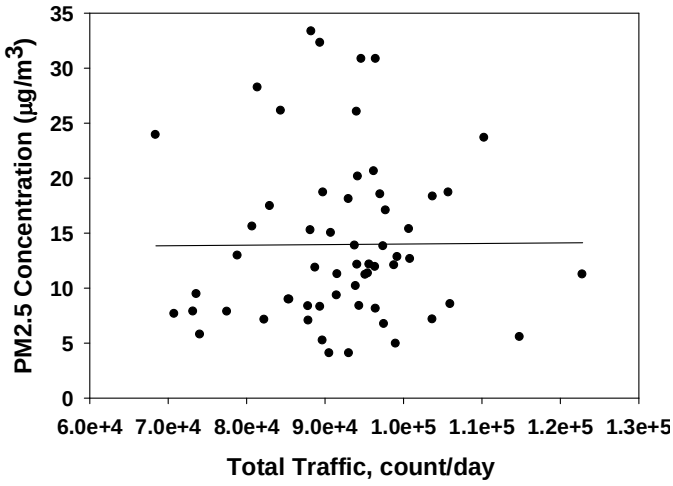
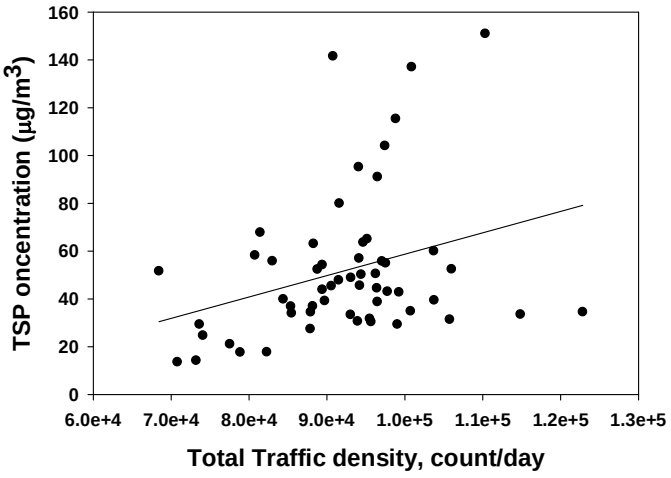


Fig. 4 The average of partitioning of 16 different PAHs during a year sampling period at site A.





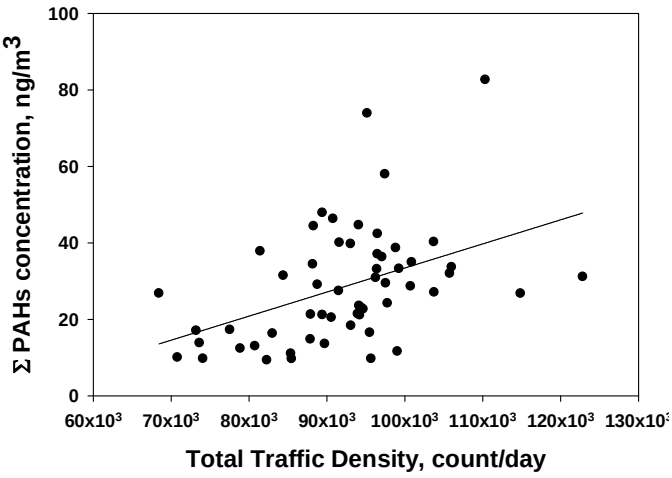
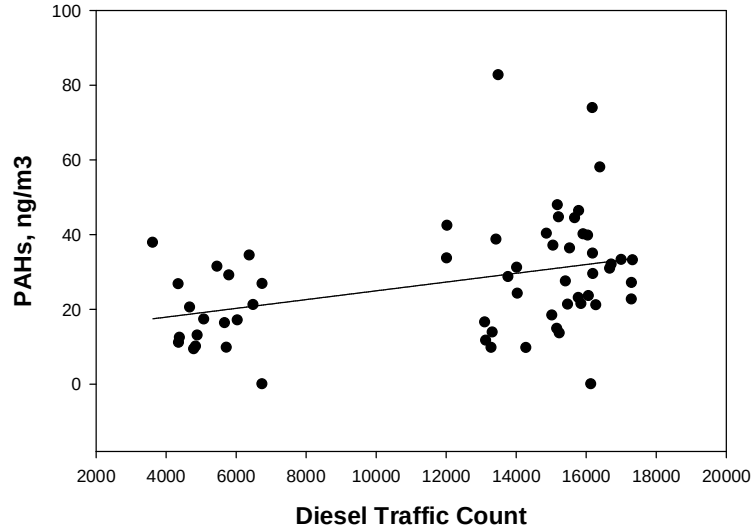


Fig. 5. Total traffic counts effect on concentration of $PM_{2.5}$, TSP and $\sum_{16}$PAHs.



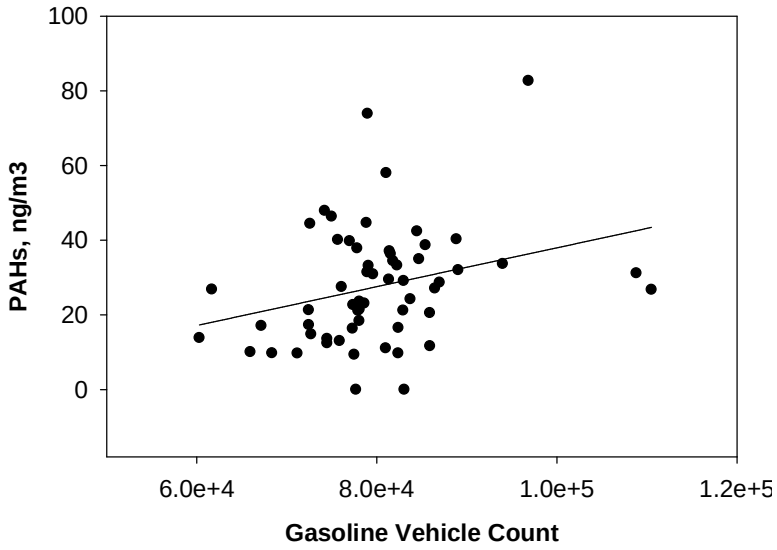


Fig. 6. Diesel and gasoline traffic counts effects on concentration of $\sum_{16}$PAHs.

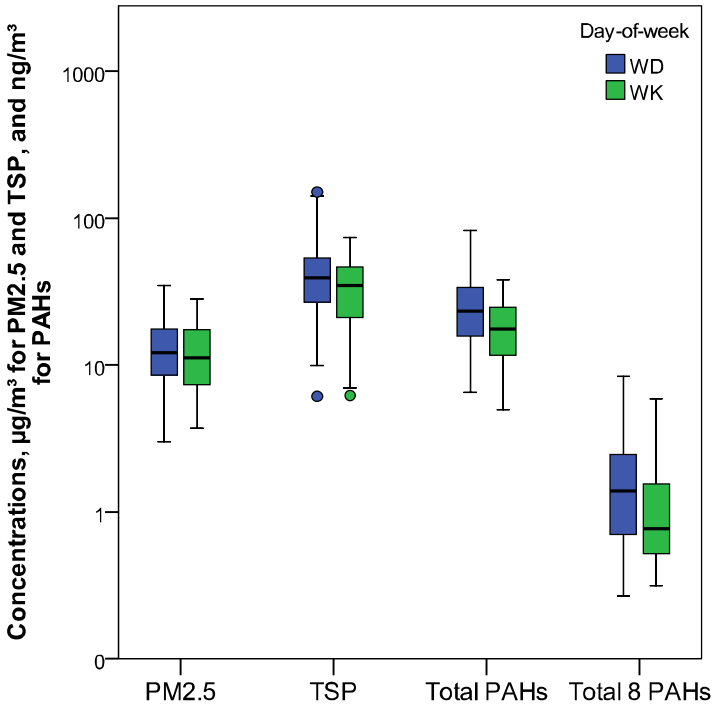


Fig. 7. Week-Weekend effect for $PM_{2.5}$, TSP and Σ_{16}PAHs.

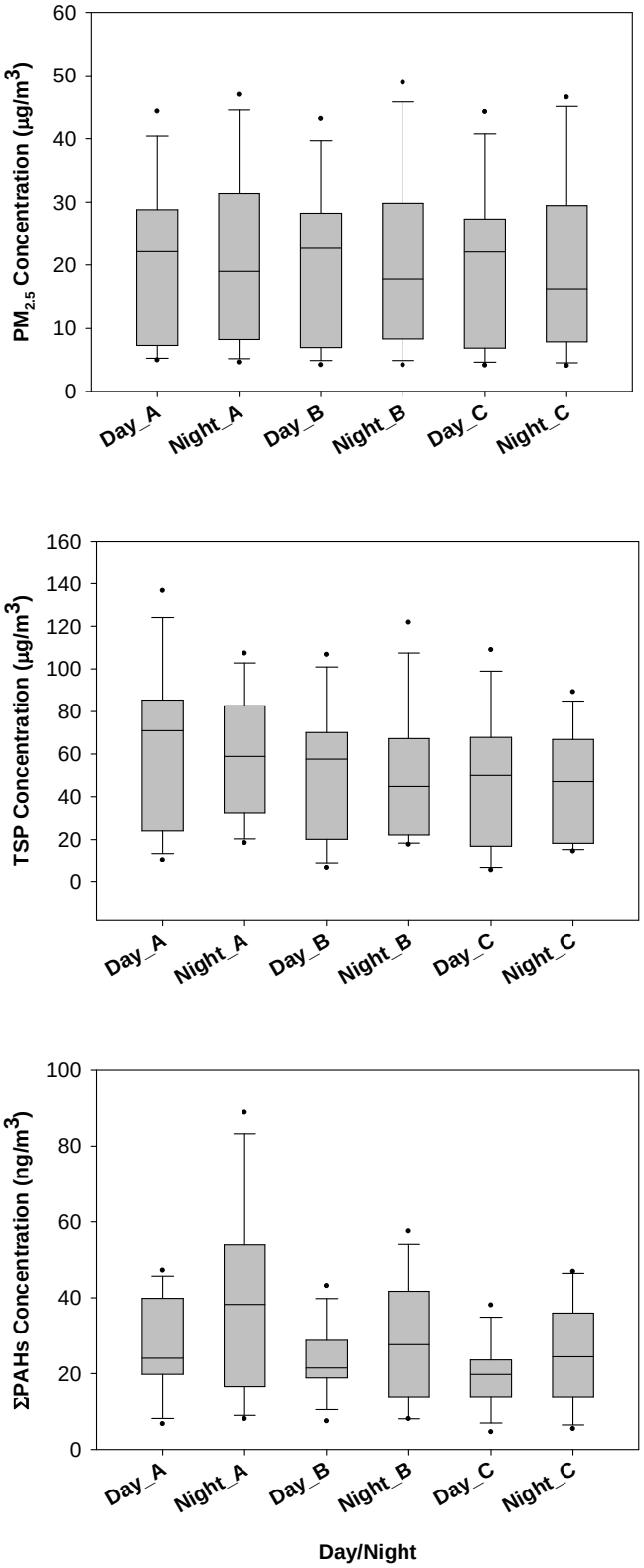


Fig. 8. Diurnal effect on $PM_{2.5}$, TSP and $\sum_{16}$PAHs at three sampling sites.

Table 1. The number of collected samples from long term and intensive samplings for a year study

Compounds	Long term sampling				Intensive sampling		V.M[a].	P.M[b].	Completeness (%)
	Fall, 2007	Winter 2008	Spring 2008	Summer 2008	Summer 2008	Winter 2008			
TSP	45	35	45	59	36	36	245	249	98.4
$PM_{2.5}$	48	40	43	60	36	36	235	249	94.4
PAHs-gas	48	40	45	60	36	36	246	249	98.8
PAHs-particle	48	40	45	60	36	36	246	249	98.8

[a] V.M. Number of valid measurement
[b] P.M. Number of planned measurement

Table 2. The averaged seasonal meteorological information for a year sampling period

Season	Temp. (°C)	R.H. (%)	Preci. (cm)	W.S. (km/h)	M.H. (m)	Fog frequency	Frequency of wind direction[a]		
							U	D	P
Fall (9/21-12/20/07)	11.2 ± 8.7	68.6 ± 10.7	0.52 ± 1.02	4.56 ± 3.63	384.3 ± 162.4	5 (31%)	5 (31%)	5 (31%)	6 (38%)
Winter (12/26/07-3/19/08)	1.71 ± 4.6	64.7 ± 15.6	0.45 ± 0.75	10.9 ± 9.40	488.3 ± 285.8	4 (29%)	3 (21%)	4 (29%)	7 (50%)
Spring (3/25-6/17/08)	14.0 ± 6.1	53.3 ± 15.5	0.14 ± 0.30	8.2 ± 7.18	698.1 ± 271.8	0 (0%)	4 (27%)	7 (47%)	4 27%)
Summer (6/23-9/21/08)	22.6 ± 1.8	65.6 ± 11.8	0.47 ± 0.98	5.92 ± 5.99	611.4 ± 192.3	2 (14%)	7 (50%)	3 (21%)	4 (29%)

Data presented as mean ± standard deviation.

U: upwind (SS, SE, and EE); D: downwind (NN, NW, and WW), and P: parallel (NE and SW)

Table 3. The peak area of 16 PAHs with spiked QC samples and their RSD (%)

Sample ID	07160808	07160908	08161308	08291208	10121008	11132308	12080908	04231208	Average Peak area	RSD, %
Naphthalene	2365081.2	2332089	2335209.8	2315773.5	2389165.2	2610649.6	2655937.9	2512859.6	2439595.716	6%
Acenaphthene	2058325.6	2072948.9	1939909.9	1910409.1	1906888.1	2027922	2153452.2	2009851.5	2009963.43	4%
Acenaphthylene	1299789.7	1316968.2	1229903.4	1212312.1	1270645.2	1390997.9	1400816.2	1328793.9	1306278.328	5%
Fluorene	1467672.5	1474162.9	1348786	1342329.3	1384183.6	1495091.2	1520979.1	1427556.4	1432595.106	5%
Phenanthrene	2264560.8	2276898.8	2121192.6	2047222.1	2193252.4	2412740.4	2450591.8	2357704.9	2265520.481	6%
Anthracene	2177392.6	2174077.4	1975009.7	1900937.4	1981279.8	2165877.8	2202127.2	2050135	2078354.606	6%
Fluoranthene	2555871.8	2597211.5	2356233.1	2245490.9	2371834.9	2592590	2672719.3		2484564.5	6%
Pyrene	2584503.7	2667831.3	2423501.9	2301630.1	2465382.2	2667258.4	2772813.1		2554702.947	6%
Benz[a]anthracene	2220931.2	2342677.9	1973865.2	1798945	1879532.3	2039434	1961058.1	1815774.1	2004027.219	10%
Chrysene	2142971.5	2235158.9	2008353.6	1870369.8	2030651.2	2296148.4	2133363.2	2064059.1	2097634.46	6%
Benzo(b)fluoranthene	2153902.9	2384749.7	1989589.9	1753908.4	1822822.1	1979050	1871419.1	1791717.7	1968394.979	11%
Benzo(k)fluoranthene	2287341.6	2471142.6	2147643.2	1889194.8	2095662.1	2428780	2098964.4	2127682.7	2193301.431	9%
Benzo[a]pyrene	1941367.1	2249850.7	1754334.1	1567444.3	1631439	1818055.5	1651893.3	1591120.3	1775688.049	13%
Indeno[1,2,3-cd]pyrene	2175026.7	2554536.8	2003295.1	1706564.9	1788803.9	1961615.8	1693845.2	1622385.8	1938259.28	16%
Dibenzo[a,c]anthracene	1715493	2076576	1588109.6	1336910.2	1362894.6	1527600.7	1267880.5	1315674	1523892.323	18%
Benzo[g,h,i]perylene	1952883.2	2238292.6	1813211.9	1566348.6	1679515.8	1872750	1622645.6	1617592.5	1795405.043	13%

Table 4. Recovery of standard reference materials (SRMs).

PAHs	Measured Concentration by GC_MS, µg	Certified Concentrations	Lower limit	Upper limit
Naphthalene	76	109	59.9	124
Acenaphthene	15.7	25.8	14.2	29.3
Acenaphthylene	21.5	29.8	16.4	33.8
Fluorene	67.2	99.5	54.7	113
Phenanthrene	39.1	54.6	31.2	61.7
Anthracene	37.8	53.4	27.1	59.3
Fluoranthene	57.7	87	49.5	102
Pyrene	24.1	33	18.8	38.6
Benz[a]anthracene	47.1	45	28.4	54.1
Chrysene	85.4	79.7	50.3	95.8
Benzo(b)fluoranthene	29.5	30.7	21.8	36.5
Benzo(k)fluoranthene	31.4	31.8	19.9	36.2
Benzo[a]pyrene	53.3	55.4	34	66.5
Indeno[1,2,3-cd]pyrene	32.6	41.4	23.3	48.4
Dibenzo[a,c]anthracene	34.3	38.2	23.4	47.4
Benzo[g,h,i]perylene	19.1	22.3	14.1	26.8

Table 5. Breakthrough test of PUF for 16 PAHs.

	Breakthrough (%)	
PAHs	**Average of # 12 samples**	**Standard deviation**
Naphthalene	49%	2%
Acenaphthene	54%	6%
Acenaphthylene	53%	6%
Fluorene	47%	8%
Phenanthrene	27%	8%
Anthracene	25%	15%
Fluoranthene	0%	0%
Pyrene	0%	0%
Benz[a]anthracene	NA	NA
Chrysene	NA	NA
Benzo(b)fluoranthene	NA	NA
Benzo(k)fluoranthene	NA	NA
Benzo[a]pyrene	NA	NA
Indeno[1,2,3-cd]pyrene	NA	NA
Dibenzo[a,h+a,c]anthracene	NA	NA
Benzo[g,h,i]perylene	NA	NA

Table 6. The average concentration of $PM_{2.5}$($\mu g/m^3$), TSP($\mu g/m^3$) and 16 PAHs (ng/m3) at three sampling sites for a year sampling period (9/21/07-9/21/08).

Target Pollutant List	Site A	Site B	Site C
PM2.5	13.97	12.94	13.52
TSP	51.68	39.77	36.67
Naphthalene	1.85	1.47	1.74
Acenaphthene	0.68	0.54	0.46
Acenaphthylene	1.24	1.11	0.92
Fluorene	3.77	3.35	2.91
Phenanthrene	12.06	10.08	8.68
Anthracene	0.64	0.55	0.42
Fluoranthene	4	2.71	2.54
Pyrene	2.31	1.83	1.57
Benz[a]anthracene	0.1	0.08	0.08
Chrysene	0.26	0.21	0.2
Benzo(b)fluoranthene	0.15	0.12	0.11
Benzo(k)fluoranthene	0.13	0.11	0.1
Benzo[a]pyrene	0.13	0.11	0.1
Indeno[1,2,3-cd]pyrene	0.25	0.23	0.2
Dibenzo[a,c]anthracene	0.1	0.06	0.05
Benzo[g,h,i]perylene	0.39	0.38	0.32

Table 7. The average concentration of 16 PAHs at winter and summer season.

Compounds	Winter(January 2008)			Summer (July 2008)		
	Site A	Site B	Site C	Site A	Site B	Site C
Naphthalene	3.01	2.99	2.32	1.31	0.96	0.91
Acenaphthene	0.75	0.79	0.55	0.16	0.12	0.12
Acenaphthylene	1.01	1.18	0.85	1.77	1.44	1.45
Fluorene	1.77	2.05	1.42	4.19	3.73	3.56
Phenanthrene	3.91	4.08	2.87	21.49	17.62	17.76
Anthracene	0.23	0.22	0.16	0.65	0.54	0.53
Fluoranthene	1.96	1.7	1.37	11.61	4.9	4.79
Pyrene	1.66	1.43	1.14	2.86	2.18	2.04
Benz[a]anthracene	0.14	0.11	0.11	0.06	0.05	0.04
Chrysene	0.29	0.25	0.25	0.23	0.19	0.16
Benzo(b)fluoranthene	0.18	0.17	0.15	0.09	0.06	0.06
Benzo(k)fluoranthene	0.18	0.3	0.15	0.07	0.06	0.05
Benzo[a]pyrene	0.19	0.16	0.15	0.06	0.05	0.04
Indeno[1,2,3-cd]pyrene	0.38	0.35	0.35	0.13	0.1	0.09
Dibenzo[a,c]anthracene	0.1	0.09	0.08	0.03	0.02	0.02
Benzo[g,h,i]perylene	0.53	0.48	0.5	0.22	0.17	0.15

Table 8. Day and night average concentration of $PM_{2.5}$, TSP and 16 PAHs.

	Site A		Site B		Site C	
	Day	**Night**	**Day**	**Night**	**Day**	**Night**
$PM_{2.5}$	20.20	20.87	20.14	20.54	19.93	19.57
TSP	61.47	58.10	51.90	48.70	46.20	44.66
Naphthalene	1.46	3.08	1.42	2.92	1.41	2.93
Acenaphthene	0.14	1.19	0.14	1.08	0.14	0.96
Acenaphthylene	1.53	1.32	1.52	1.25	1.52	1.17
Fluorene	4.05	2.38	3.99	2.24	3.97	2.10
Phenanthrene	19.41	4.76	19.19	4.48	19.11	4.22
Anthracene	0.63	0.34	0.62	0.31	0.61	0.28
Fluoranthene	5.26	2.13	5.20	2.00	5.18	1.86
Pyrene	2.35	1.92	2.34	1.78	2.32	1.65
Benz[a]anthracene	0.05	0.16	0.05	0.15	0.05	0.14
Chrysene	0.21	0.34	0.20	0.32	0.20	0.31
Benzo(b)fluoranthene	0.08	0.19	0.07	0.19	0.07	0.18
Benzo(k)fluoranthene	0.06	0.20	0.06	0.19	0.06	0.19
Benzo[a]pyrene	0.06	0.22	0.06	0.21	0.05	0.20
Indeno[1,2,3-cd]pyrene	0.11	0.47	0.10	0.45	0.10	0.43
Dibenzo[a,c]anthracene	0.03	0.12	0.03	0.11	0.03	0.11
Benzo[g,h,i]perylene	0.19	0.72	0.18	0.69	0.18	0.66

Appendix I. Meteorological information during a year sampling period (9/21/07-9/21/08)

Date	Temperature, °C	Humidity, %	Precipitation, cm	Wind Speed, km/hr	Wind Groups	Wind direction
9/21/2007	22	64	0.00	0	parallel	SW
9/27/2007	25	71	0.00	8	parallel	SW
10/3/2007	23	73	0.00	3	upwind	SS
10/9/2007	20	73	1.75	10	upwind	SE
10/15/2007	13	62	0.00	3	downwind	NW
10/21/2007	17	51	0.00	6	parallel	SW
10/27/2007	17	78	3.33	6	parallel	SW
11/2/2007	8	51	0.00	3	parallel	NE
11/8/2007	3	53	0.00	3	downwind	NW
11/14/2007	10	83	0.00	0	upwind	SS
11/20/2007	7	80	0.25	5	upwind	SS
11/26/2007	10	85	2.31	2	upwind	EE
12/2/2007	-3	68	0.63	11	parallel	NE
12/8/2007	3	66	0.00	10	downwind	WW
12/14/2007	2	74	0.00	0	downwind	WW
12/20/2007	2	66	0.00	3	downwind	NW
12/26/2007	0	76	1.32	3	parallel	NE
1/1/2008	2	72	0.66	8	parallel	SW
1/7/2008	10	71	0.00	0	parallel	SW
1/13/2008	2	70	0.71	6	parallel	NE
1/19/2008	0	43	0.00	8	downwind	WW
1/25/2008	-3	43	0.00	13	downwind	NW
2/5/2008	6	87	0.05	6	parallel	SW
2/11/2008	-8	37	0.00	31	downwind	NW
2/17/2008	3	75	0.58	30	upwind	SS
2/23/2008	0	78	0.03	0	downwind	NN
2/29/2008	-3	59	0.30	11	upwind	SS
3/6/2008	5	60	0.00	10	parallel	SW
3/13/2008	3	54	0.00	13	parallel	SW
3/19/2008	7	81	2.64	13	upwind	SE
3/25/2008	3	42	0.00	13	parallel	SW
3/31/2008	7	83	0.41	6	upwind	SE
4/6/2008	7	67	0.00	18	upwind	EE
4/12/2008	16	78	0.79	5	parallel	SW
4/18/2008	18	34	0.00	0	upwind	SE
4/24/2008	14	35	0.00	8	downwind	NN
4/30/2008	8	40	0.00	6	downwind	NW
5/6/2008	16	45	0.00	0	downwind	NN
5/12/2008	10	58	0.84	26	parallel	NE
5/18/2008	11	50	0.00	13	downwind	NW
5/24/2008	16	45	0.00	10	downwind	NW
5/30/2008	19	40	0.00	0	upwind	SS
6/5/2008	20	70	0.00	8	parallel	NE
6/11/2008	25	51	0.00	8	downwind	NW
6/17/2008	20	61	0.00	2	downwind	NW
6/23/2008	24	75	0.00	0	parallel	SW
6/29/2008	26	72	2.64	6	upwind	SS
7/5/2008	22	85	0.20	6	upwind	SS
7/11/2008	23	50	0.00	0	parallel	SW
7/23/2008	24	84	2.74	10	upwind	EE
8/4/2008	23	58	0.00	8	downwind	NW
8/10/2008	22	66	0.00	2	parallel	SW
8/16/2008	22	59	0.00	3	downwind	NW

8/22/2008	22	60	0.00	0	upwind	SE
8/28/2008	21	52	0.00	0	upwind	SE
9/3/2008	25	60	0.00	6	upwind	SS
9/9/2008	21	80	1.04	8	parallel	SW
9/15/2008	23	53	0.00	21	downwind	NW
9/21/2008	19	64	0.00	13	upwind	SS

Appendix II. Traffic counts for gasoline and diesel vehicles in both direction of New Jersey Turnpike between Exit No. 16W and 18W.

Date	WK/WD	NorthBound Gasoline	NorthBound Diesel	SouthBound Gasoline	SouthBound Diesel	Total Gasoline	Total Diesel	Total
09/21/07	WK	40031	4443	44426	7589	84457	12032	96489
09/27/07	WD	39163	7900	41887	8497	81050	16397	97447
10/03/07	WD	39018	8215	40055	9117	79073	17332	96405
10/09/07	WD	37191	7250	38896	8164	76087	15414	91501
10/15/07	WD	38379	7606	39699	8252	78078	15858	93936
10/21/07	WK	42269	3822	39527	2562	81796	6384	88180
10/27/07	WK	40040	2184	37449	2611	77489	4795	82284
11/02/07	WD	43308	5887	42597	7250	85905	13137	99042
11/08/07	WD	40111	8029	42134	8976	82245	17005	99250
11/14/07	WD	39108	8563	38249	8735	77357	17298	94655
11/20/07	WD	47072	8366	41960	8355	89032	16721	105753
11/26/07	WD	38775	7848	38206	8201	76981	16049	93030
12/02/07	WK	29773	4056	31911	2694	61684	6750	68434
12/08/07	WK	40733	2541	38203	2920	78936	5461	84397
12/14/07	WD	42394	6279	41330	7760	83724	14039	97763
12/20/07	WD	44189	8624	42264	8676	86453	17300	103753
12/26/07	WD	43703	7001	43259	6774	86962	13775	100737
01/01/08	WD	34593	2992	31363	1858	65956	4850	70806
01/07/08	WD	36049	7725	36542	7954	72591	15679	88270
01/13/08	WK	34634	3560	32541	2480	67175	6040	73215
01/19/08	WK	38265	1972	36213	2416	74478	4388	78866
01/25/08	WD	42648	6013	39740	7096	82388	13109	95497
02/05/08	WD	36950	7348	37268	7836	74218	15184	89402
02/11/08	WD	36489	7460	36215	7707	72704	15167	87871
02/17/08	WK	36593	3054	35857	2030	72450	5084	77534
02/23/08	WK	41274	2369	34587	2528	75861	4897	80758
02/29/08	WD	41757	6015	40613	7276	82370	13291	95661
03/06/08	WD	40554	8211	39019	8469	79573	16680	96253
03/13/08	WD	40207	8246	37712	8038	77919	16284	94203
03/19/08	WD	39693	7952	37986	8186	77679	16138	93817
03/25/08	WD	34997	6823	36181	7463	71178	14286	85464
03/31/08	WD	32957	6922	27346	6403	60303	13325	73628
04/06/08	WK	37394	3519	30960	2210	68354	5729	74083
04/12/08	WK	43920	2232	37071	2131	80991	4363	85354
04/18/08	WD	47922	6049	48908	7444	96830	13493	110323
04/24/08	WD	43539	7929	41149	8259	84688	16188	100876
04/30/08	WD	38680	7704	39376	8365	78056	16069	94125
05/06/08	WD	37561	7538	37420	8254	74981	15792	90773
05/12/08	WD	38032	7443	36450	7795	74482	15238	89720
05/19/08	WD	43675	3939	39242	2552	82917	6491	89408
05/24/08	WD	44348	2037	41539	2643	85887	4680	90567
05/30/08	WD	43070	6006	42324	7426	85394	13432	98826
06/05/08	WD	38379	7252	40226	8529	78605	15781	94386
06/11/08	WD	40212	7899	38762	8283	78974	16182	95156
06/17/08	WD	41463	7763	39879	8434	81342	16197	97539
06/23/08	WD	39824	7243	39025	7973	78849	15216	94065
06/29/08	WD	43318	3987	39727	2758	83045	6745	89790
07/05/08	WD	41593	1714	36215	1906	77808	3620	81428

07/11/08	WD	44930	5374	63894	8647	108824	14021	122845
07/23/08	WD	42005	7491	39530	8043	81535	15534	97069
08/04/08	WD	41748	7321	39665	7738	81413	15059	96472
08/10/08	WD	43228	3403	39748	2395	82976	5798	88774
08/16/08	WD	62989	2130	47509	2222	110498	4352	114850
08/22/08	WD	47004	5205	46977	6814	93981	12019	106000
08/28/08	WD	44839	7206	44010	7665	88849	14871	103720
09/03/08	WD	38355	7848	37315	8070	75670	15918	91588
09/09/08	WD	36812	7512	35627	7964	72439	15476	87915
09/15/08	WD	38649	7079	39393	7948	78042	15027	93069
09/21/08	WD	36262	3295	41048	2383	77310	5678	82988

Appendix III. Hi Volume Air sampler calibration data sheet and its plot.

TE-PNY1123 MFC Sampler Calibration

SITE B

Location->	Williams at site	Date->	**9/13/2007**
Sampler->	TSP	Tech->	

CONDITIONS

Sampler Elevation (feet)	0		
Sea Level Pressure (in Hg)	29.92	Corrected Pressure (mm Hg)	767
Temperature (deg C)	21.1	Temperature (deg K)	294
Seasonal SL Press. (in Hg)	29.92	Corrected Seasonal (mm Hg)	760
Seasonal Temp. (deg F)	70	Seasonal Temp. (deg K)	294

CALIBRATION ORIFICE

Make->	Tisch-Env	Qstd Slope->	1.57374
Model->	TE-5028	Qstd Intercept->	-0.02089
Serial#->	9833620	Date Certified->	12/13/2006

CALIBRATION Orifice **LINEAR REGRESSION**

Plate or Test #	H2O (in)	Qstd (m³/min)	FLOW (mano)	FLOW (corrected)		
1	7.40	1.761	11.2	3.38	Slope =	1.7576
2	8.40	1.876	12.7	3.60	Intercept =	0.2926
3	9.10	1.952	13.5	3.72	Corr. coeff.=	0.9990
4	9.50	1.994	14.1	3.80		
5	10.10	2.055	14.9	3.90		

Calculations

H2O (in) = manometer on orifice

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]

FLOW (mano) = manometer on blower motor port

FLOW (mano) = [Sqrt(in H2O)(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

FLOW (corrected) = corrected flow reading

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pa = actual pressure during calibration (mm Hg)

Tstd = 298 deg K

Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m((Sqrt(in H2O)(Pav/Pstd)(Tstd/Tav))-b)

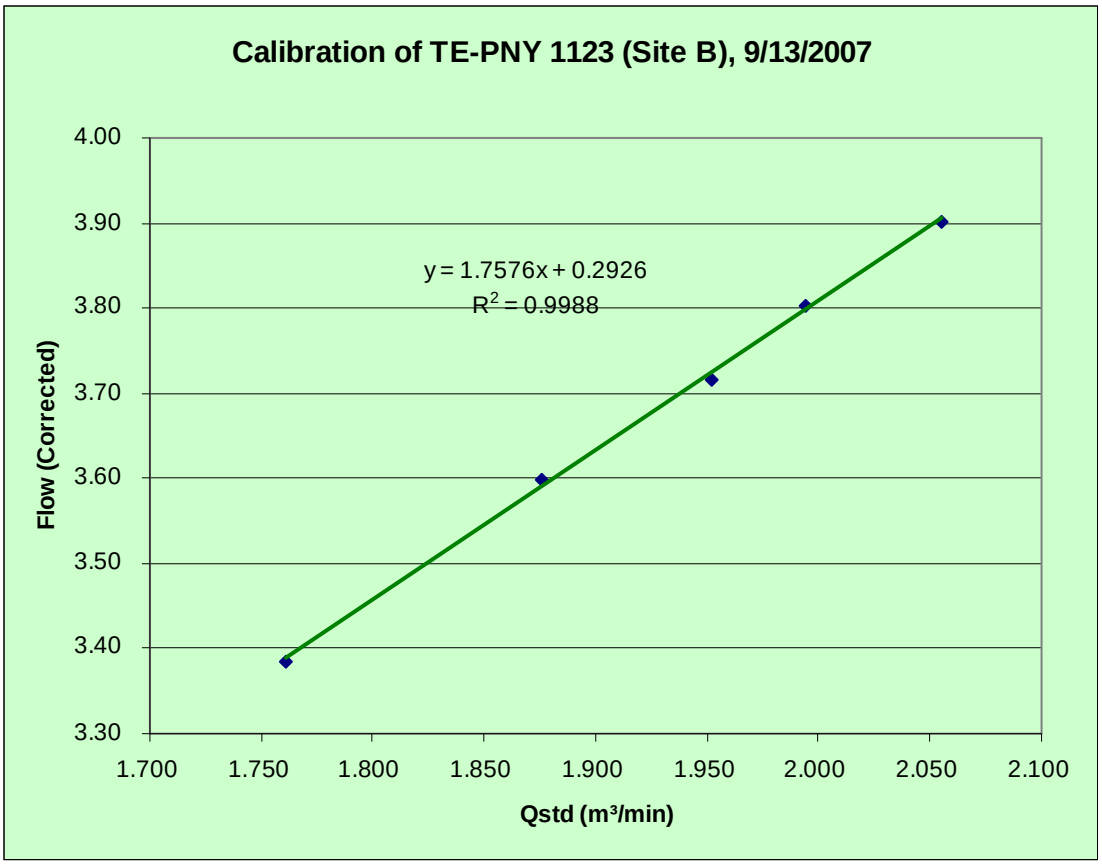
(in H2O) = manometer on blower motor port

m = sampler slope

b = sampler intercept

Tav = daily average temperature

Pav = daily average pressure


Calibration of TE-PNY 1123 (Site B), 9/13/2007
y = 1.7576x + 0.2926
R2 = 0.9988
Flow (Corrected)
Qstd (m³/min)
4.00
3.90
3.80
3.70
3.60
3.50
3.40
3.30
1.700
1.750
1.800
1.850
1.900
1.950
2.000
2.050
2.100

Appendix IV: The concentration of TSP, PM2.5 and 16 PAHs during a long term and intensive sampling at three sites.

IV-1. TSP concentration ($\mu g/m^3$) at three sampling sites for a year sampling.

Date	Site	WD/WK	Season	Sample ID	Time (min)	Flow rate (m^3/min)	Net-weight (g)	TSP conc. $\mu g/m^3$
9/21/2007	A	WK	Fall	092107-A-TSP	1399	0.45	0.057	**91.0**
9/21/2007	B	WK	Fall	092107-B-TSP	1355	0.75	0.057	**55.8**
9/21/2007	C	WK	Fall	092107-C-TSP	1329	0.71	0.050	**52.7**
9/27/2007	A	WD	Fall	092707-A-TSP	1371	0.12	0.018	**104.1**
9/27/2007	B	WD	Fall	092707-B-TSP	1401	0.15	0.014	**66.7**
9/27/2007	C	WD	Fall	092707-C-TSP	1418	0.35	0.015	**30.8**
10/3/2007	A	WD	Fall	100307-A-TSP	1406	0.39	0.024	**44.5**
10/3/2007	B	WD	Fall	100307-B-TSP	1412	0.66	0.029	**30.8**
10/3/2007	C	WD	Fall	100307-C-TSP	1425	0.65	0.027	**29.4**
10/9/2007	A	WD	Fall	100907-A-TSP	1465	0.45	0.032	**47.8**
10/9/2007	B	WD	Fall	100907-B-TSP	1470	0.70	0.025	**24.5**
10/9/2007	C	WD	Fall	100907-C-TSP	1470	0.68	0.029	**28.8**
10/15/2007	A	WD	Fall	101507-A-TSP	1421	0.53	0.023	**30.7**
10/15/2007	B	WD	Fall	101507-B-TSP	1424	0.83	0.018	**15.1**
10/15/2007	C	WD	Fall	101507-C-TSP	1429	0.78	0.016	**14.7**
10/21/2007	A	WK	Fall	102107-A-TSP	1171	0.44	0.019	**37.0**
10/21/2007	B	WK	Fall	102107-B-TSP	1427	0.69	0.023	**22.9**
10/21/2007	C	WK	Fall	102107-C-TSP	1377	0.65	0.020	**22.1**
10/27/2007	A	WK	Fall	102707-A-TSP	1225	0.50	0.011	**17.8**
10/27/2007	B	WK	Fall	102707-B-TSP	1409	0.72	0.006	**6.2**
10/27/2007	C	WK	Fall	102707-C-TSP	1363	0.95	0.009	**7.0**
11/2/2007	A	WD	Fall	110207-A-TSP	1417	0.47	0.020	**29.4**
11/2/2007	B	WD	Fall	110207-B-TSP	1420	0.82	0.013	**11.2**
11/2/2007	C	WD	Fall	110207-C-TSP	1426	0.81	0.014	**12.1**
11/8/2007	A	WD	Fall	110807-A-TSP	1429	0.49	0.030	**42.8**
11/8/2007	B	WD	Fall	110807-B-TSP	1432	0.75	0.025	**23.1**
11/8/2007	C	WD	Fall	110807-C-TSP	1434	0.67	0.029	**30.5**
11/14/2007	A	WD	Fall	111407-A-TSP	1438	0.47	0.043	**63.6**
11/14/2007	B	WD	Fall	111407-B-TSP	1442	0.44	0.030	**47.6**
11/14/2007	C	WD	Fall	111407-C-TSP	1450	0.69	0.042	**41.8**
11/20/2007	A	WD	Fall	112007-A-TSP	1416	0.60	0.027	**31.4**
11/20/2007	B	WD	Fall	112007-B-TSP	1419	0.67	0.020	**21.4**
11/20/2007	C	WD	Fall	112007-C-TSP	1422	0.69	0.021	**21.6**
11/26/2007	A	WD	Fall	112607-A-TSP	1411	0.41	0.019	**33.4**
11/26/2007	B	WD	Fall	112607-B-TSP	1415	0.54	0.015	**19.5**
11/26/2007	C	WD	Fall	112607-C-TSP	1420	0.53	0.013	**17.7**
12/2/2007	A	WK	Fall	120207-A-TSP	1256	0.60	0.039	**51.6**
12/2/2007	B	WK	Fall	120207-B-TSP	1440	0.84	0.043	**35.3**
12/2/2007	C	WK	Fall	120207-C-TSP	1408	0.82	0.042	**36.1**
12/8/2007	A	WK	Fall	120807-A-TSP	1442	0.44	0.025	**39.9**
12/8/2007	B	WK	Fall	120807-B-TSP	1510	0.70	0.036	**33.9**
12/8/2007	C	WK	Fall	120807-C-TSP	1421	0.82	0.042	**35.9**
12/14/2007	A	WD	Fall	121407-A-TSP	1445	0.60	0.037	**43.1**
12/14/2007	B	WD	Fall	121407-B-TSP	1483	0.80	0.025	**21.1**
12/14/2007	C	WD	Fall	121407-C-TSP	1453	0.86	0.026	**20.5**
12/20/2007	A	WD	Fall	122007-A-TSP	1426	0.58	0.033	**39.5**
12/20/2007	B	WD	Fall	122007-B-TSP	1431	0.80	0.027	**23.7**
12/20/2007	C	WD	Fall	122007-C-TSP	1437	0.83	0.025	**21.2**
12/26/2007	A	WD	Winter	122607-A-TSP	1417	0.52	0.026	**34.9**
12/26/2007	B	WD	Winter	122607-B-TSP	1423	0.88	0.022	**17.6**
12/26/2007	C	WD	Winter	122607-C-TSP	1426	0.89	0.021	**16.9**
1/1/2008	A	WD	Winter	010108-A-TSP	1440	0.64	0.013	**13.6**
1/1/2008	B	WD	Winter	010108-B-TSP	1457	0.88	0.008	**6.1**
1/1/2008	C	WD	Winter	010108-C-TSP	NA	0.93	NA	**NA**
1/7/2008	A	WD	Winter	010708-A-TSP	1385	0.56	0.049	**63.1**
1/7/2008	B	WD	Winter	010708-B-TSP	1394	0.77	0.052	**48.5**
1/7/2008	C	WD	Winter	010708-C-TSP	1434	0.93	0.050	**37.6**
1/13/2008	A	WK	Winter	011308-A-TSP	1398	0.55	0.011	**14.2**
1/13/2008	B	WK	Winter	011308-B-TSP	1477	0.50	0.011	**15.0**
1/13/2008	C	WK	Winter	011308-C-TSP	1421	0.75	0.008	**7.2**
1/19/2008	A	WK	Winter	011908-A-TSP	1215	0.69	0.015	**17.7**
1/19/2008	B	WK	Winter	011908-B-TSP	1403	0.50	0.015	**20.8**
1/19/2008	C	WK	Winter	011908-C-TSP	1444	0.85	0.016	**12.8**
1/25/2008	A	WD	Winter	012508-A-TSP	1442	0.68	0.031	**31.7**
1/25/2008	B	WD	Winter	012508-B-TSP	1437	0.63	0.028	**31.0**
1/25/2008	C	WD	Winter	012508-C-TSP	1448	0.86	0.026	**20.7**
2/5/2008	A	WD	Winter	020508-A-TSP	1438	0.51	0.040	**54.2**
2/5/2008	B	WD	Winter	020508-B-TSP	1423	0.50	0.031	**44.2**

2/5/2008	C	WD	Winter	020508-C-TSP	1426	0.71	0.039	**39.0**
2/11/2008	A	WD	Winter	021108-A-TSP	1420	0.75	0.029	**27.4**
2/11/2008	B	WD	Winter	021108-B-TSP	1429	0.74	0.025	**23.8**
2/11/2008	C	WD	Winter	021108-C-TSP	1438	0.86	0.019	**15.1**
2/17/2008	A	WK	Winter	021708-A-TSP	1183	0.52	0.013	**21.1**
2/17/2008	B	WD	Winter	021708-B-TSP	1372	0.48	0.016	**24.0**
2/17/2008	C	WK	Winter	021708-C-TSP	1372	0.78	0.016	**14.6**
2/23/2008	A	WK	Winter	022308-A-TSP	1094	0.66	0.042	**58.3**
2/23/2008	B	WD	Winter	022308-B-TSP	NA	0.81	NA	**NA**
2/23/2008	C	WK	Winter	022308-C-TSP	1400	0.88	0.031	**25.1**
2/29/2008	A	WD	Winter	022908-A-TSP	1479	0.66	0.030	**30.4**
2/29/2008	B	WD	Winter	022908-B-TSP	1459	0.55	0.023	**28.9**
2/29/2008	C	WD	Winter	022908-C-TSP	1457	0.78	0.022	**19.4**
3/6/2008	A	WD	Winter	030608-A-TSP	1417	0.82	0.059	**50.6**
3/6/2008	B	WD	Winter	030608-B-TSP	1379	0.62	0.045	**52.4**
3/6/2008	C	WD	Winter	030608-C-TSP	1394	0.85	0.051	**42.5**
3/13/2008	A	WD	Winter	031308-A-TSP	1450	0.64	0.042	**45.6**
3/13/2008	B	WD	Winter	031308-B-TSP	1439	0.65	0.037	**39.0**
3/13/2008	C	WD	Winter	031308-C-TSP	1432	0.89	0.039	**30.8**
3/19/2008	A	WD	Winter	031908-A-TSP	NA	NA	NA	**NA**
3/19/2008	B	WD	Winter	031908-B-TSP	NA	NA	NA	**NA**
3/19/2008	C	WD	Winter	031908-C-TSP	NA	NA	NA	**NA**
3/25/2008	A	WD	Spring	032508-A-TSP	1423	0.80	0.039	**34.0**
3/25/2008	B	WD	Spring	032508-B-TSP	1413	0.76	0.037	**34.7**
3/25/2008	C	WD	Spring	032508-C-TSP	1414	0.84	0.031	**26.1**
3/31/2008	A	WD	Spring	033108-A-TSP	1429	0.63	0.027	**29.4**
3/31/2008	B	WD	Spring	033108-B-TSP	1418	0.47	0.023	**35.1**
3/31/2008	C	WD	Spring	033108-C-TSP	1416	0.70	0.022	**22.3**
4/6/2008	A	WK	Spring	040608-A-TSP	1181	0.63	0.018	**24.7**
4/6/2008	B	WK	Spring	040608-B-TSP	1405	0.49	0.015	**21.9**
4/6/2008	C	WK	Spring	040608-C-TSP	1355	0.71	0.014	**14.1**
4/12/2008	A	WK	Spring	041208-A-TSP	1178	0.57	0.025	**36.9**
4/12/2008	B	WK	Spring	041208-B-TSP	1405	0.56	0.027	**34.4**
4/12/2008	C	WK	Spring	041208-C-TSP	1583	0.68	0.020	**18.5**
4/18/2008	A	WD	Spring	041808-A-TSP	1411	0.45	0.096	**151.0**
4/18/2008	B	WD	Spring	041808-B-TSP	1419	0.58	0.092	**112.3**
4/18/2008	C	WD	Spring	041808-C-TSP	1439	0.55	0.074	**93.3**
4/24/2008	A	WD	Spring	042408-A-TSP	1438	0.54	0.106	**137.0**
4/24/2008	B	WD	Spring	042408-B-TSP	1440	0.58	0.081	**97.5**
4/24/2008	C	WD	Spring	042408-C-TSP	1445	0.58	0.081	**95.7**
4/30/2008	A	WD	Spring	043008-A-TSP	1431	0.54	0.044	**57.0**
4/30/2008	B	WD	Spring	043008-B-TSP	1429	0.78	0.050	**44.9**
4/30/2008	C	WD	Spring	043008-C-TSP	1434	0.83	0.045	**37.5**
5/6/2008	A	WD	Spring	050608-A-TSP	1422	0.47	0.095	**141.6**
5/6/2008	B	WD	Spring	050608-B-TSP	1420	0.62	0.101	**114.5**
5/6/2008	C	WD	Spring	050608-C-TSP	1414	0.68	0.099	**103.2**
5/12/2008	A	WD	Spring	051208-A-TSP	1441	0.45	0.025	**39.2**
5/12/2008	B	WD	Spring	051208-B-TSP	1444	0.68	0.022	**22.0**
5/12/2008	C	WD	Spring	051208-C-TSP	1446	0.78	0.023	**20.8**
5/18/2008	A	WD	Spring	051908-A-TSP	1147	0.51	0.026	**43.9**
5/18/2008	B	WD	Spring	051908-B-TSP	1360	0.44	0.023	**38.5**
5/18/2008	C	WD	Spring	051908-C-TSP	1304	0.74	0.027	**28.0**
5/24/2008	A	WD	Spring	052408-A-TSP	1213	0.58	0.032	**45.4**
5/24/2008	B	WD	Spring	052408-B-TSP	1365	0.56	0.034	**44.6**
5/24/2008	C	WD	Spring	052408-C-TSP	1360	0.59	0.029	**35.7**
5/30/2008	A	WD	Spring	053008-A-TSP	1403	0.49	0.080	**115.4**
5/30/2008	B	WD	Spring	053008-B-TSP	1398	0.60	0.065	**77.1**
5/30/2008	C	WD	Spring	053008-C-TSP	1394	0.54	0.058	**76.6**
6/5/2008	A	WD	Spring	060508-A-TSP	1441	0.46	0.033	**50.2**
6/5/2008	B	WD	Spring	060508-B-TSP	1433	0.49	0.029	**40.3**
6/5/2008	C	WD	Spring	060508-C-TSP	1433	0.51	0.027	**36.8**
6/11/2008	A	WD	Spring	061108-A-TSP	1436	0.47	0.043	**65.1**
6/11/2008	B	WD	Spring	061108-B-TSP	1428	0.61	0.044	**49.9**
6/11/2008	C	WD	Spring	061108-C-TSP	1427	0.61	0.036	**41.5**
6/17/2008	A	WD	Spring	061708-A-TSP	1420	0.38	0.030	**54.9**
6/17/2008	B	WD	Spring	061708-B-TSP	1419	0.51	0.030	**41.5**
6/17/2008	C	WD	Spring	061708-C-TSP	1427	0.51	0.024	**33.1**
6/23/2008	A	WD	Summer	062308-A-TSP	1424	0.19	0.026	**95.2**
6/23/2008	B	WD	Summer	062308-B-TSP	1416	0.59	0.060	**71.3**
6/23/2008	C	WD	Summer	062308-C-TSP	1423	0.44	0.047	**74.8**
6/29/2008	A	WD	Summer	062908-A-TSP	NA	-0.59	0.002	**NA**
6/29/2008	B	WD	Summer	062908-B-TSP	1469	0.55	0.053	**65.2**
6/29/2008	C	WD	Summer	062908-C-TSP	1467	0.48	0.049	**69.8**
7/5/2008	A	WD	Summer	070508-A-TSP	1525	0.53	0.055	**67.8**
7/5/2008	B	WD	Summer	070508-B-TSP	1378	0.68	0.070	**73.9**
7/5/2008	C	WD	Summer	070508-C-TSP	1366	0.72	0.064	**65.4**
7/11/2008	A	WD	Summer	071108-A-TSP	1424	0.58	0.029	**34.5**
7/11/2008	B	WD	Summer	071108-B-TSP	1446	0.76	0.047	**43.0**
7/11/2008	C	WD	Summer	071108-C-TSP	1489	0.56	0.045	**54.0**

7/23/2008	A	WD	Summer	072308-A-TSP	1432	0.59	0.047	**55.7**
7/23/2008	B	WD	Summer	072308-B-TSP	1442	0.70	0.045	**45.1**
7/23/2008	C	WD	Summer	072308-C-TSP	1444	0.78	0.051	**45.3**
8/4/2008	A	WD	Summer	080408-A-TSP	1427	0.56	0.031	**38.8**
8/4/2008	B	WD	Summer	080408-B-TSP	1428	0.78	0.034	**30.3**
8/4/2008	C	WD	Summer	080408-C-TSP	1432	0.76	0.039	**35.7**
8/10/2008	A	WD	Summer	081008-A-TSP	1550	0.56	0.046	**52.4**
8/10/2008	B	WD	Summer	081008-B-TSP	1381	0.74	0.047	**46.5**
8/10/2008	C	WD	Summer	081008-C-TSP	1384	0.75	0.057	**55.2**
8/16/2008	A	WD	Summer	081608-A-TSP	1490	0.63	0.032	**33.5**
8/16/2008	B	WD	Summer	081608-B-TSP	1426	0.76	0.031	**29.2**
8/16/2008	C	WD	Summer	081608-C-TSP	1372	0.72	0.037	**37.0**
8/22/2008	A	WD	Summer	082208-A-TSP	1453	0.58	0.044	**52.5**
8/22/2008	B	WD	Summer	082208-B-TSP	1486	0.87	0.057	**44.2**
8/22/2008	C	WD	Summer	082208-C-TSP	1508	0.73	0.056	**51.5**
8/28/2008	A	WD	Summer	082808-A-TSP	1458	0.64	0.056	**60.0**
8/28/2008	B	WD	Summer	082808-B-TSP	1385	0.87	0.060	**50.1**
8/28/2008	C	WD	Summer	082808-C-TSP	1405	0.79	0.081	**72.6**
9/3/2008	A	WD	Summer	090308-A-TSP	1447	0.55	0.063	**80.0**
9/3/2008	B	WD	Summer	090308-B-TSP	1441	0.84	0.078	**64.3**
9/3/2008	C	WD	Summer	090308-C-TSP	1439	0.73	0.071	**67.4**
9/9/2008	A	WD	Summer	090908-A-TSP	1442	0.58	0.029	**34.5**
9/9/2008	B	WD	Summer	090908-B-TSP	1441	0.79	0.026	**23.4**
9/9/2008	C	WD	Summer	090908-C-TSP	1443	0.74	0.026	**24.5**
9/15/2008	A	WD	Summer	091508-A-TSP	1442	0.63	0.045	**48.9**
9/15/2008	B	WD	Summer	091508-B-TSP	1442	0.73	0.024	**22.6**
9/15/2008	C	WD	Summer	091508-C-TSP	1452	0.77	0.012	**11.0**
9/21/2008	A	WD	Summer	092108-A-TSP	1442	0.62	0.050	**55.8**
9/21/2008	B	WD	Summer	092108-B-TSP	1442	0.82	0.046	**38.7**
9/21/2008	C	WD	Summer	092108-C-TSP	1452	0.88	0.048	**37.7**

IV-2. TSP concentration ($\mu g/m^3$) at three sampling sites for an intensive sampling.

Date	Site	Day/ Night	WD/WK	Season	Sample ID	Time (min)	Flow rate (m^3/min)	Net-weight (g)	TSP conc. $\mu g/m^3$
1/29/2008	A	D	WK	Winter	D-012908-A-TSP	684.6	0.61	0.033	**80.1**
1/29/2008	B	D	WK	Winter	D-012908-B-TSP	691.2	0.50	0.030	**87.4**
1/29/2008	C	D	WK	Winter	D-012908-C-TSP	685.2	0.86	0.029	**50.0**
1/29/2008	A	N	WK	Winter	N-012908-A-TSP	742.2	0.65	0.031	**63.6**
1/29/2008	B	N	WK	Winter	N-012908-B-TSP	736.8	0.76	0.024	**42.9**
1/29/2008	C	N	WK	Winter	N-012908-C-TSP	733.2	0.77	0.028	**50.1**
1/30/2008	A	D	WK	Winter	D-013008-A-TSP	682.8	0.62	0.009	**20.5**
1/30/2008	B	D	WK	Winter	D-013008-B-TSP	689.4	0.36	0.002	**6.4**
1/30/2008	C	D	WK	Winter	D-013008-C-TSP	692.4	0.53	0.002	**5.3**
1/30/2008	A	N	WK	Winter	N-013008-A-TSP	728.4	0.84	0.019	**31.1**
1/30/2008	B	N	WK	Winter	N-013008-B-TSP	729	0.93	0.012	**17.7**
1/30/2008	C	N	WK	Winter	N-013008-C-TSP	715.2	0.78	0.010	**17.2**
1/31/2008	A	D	WK	Winter	D-013108-A-TSP	680.4	0.62	0.015	**36.1**
1/31/2008	B	D	WK	Winter	D-013108-B-TSP	686.4	0.65	0.013	**29.8**
1/31/2008	C	D	WK	Winter	D-013108-C-TSP	678.6	0.93	0.013	**21.1**
1/31/2008	A	N	WK	Winter	N-013108-A-TSP	706.2	0.62	0.016	**36.6**
1/31/2008	B	N	WK	Winter	N-013108-B-TSP	730.2	0.97	0.014	**20.0**
1/31/2008	C	N	WK	Winter	N-013108-C-TSP	736.8	1.11	0.016	**19.2**
3/7/2008	A	D	WK	Winter	D-030708-A-TSP	632.4	0.63	0.013	**32.4**
3/7/2008	B	D	WK	Winter	D-030708-B-TSP	622.2	0.48	0.014	**45.3**
3/7/2008	C	D	WK	Winter	D-030708-C-TSP	624.6	0.74	0.012	**25.0**
3/7/2008	A	N	WK	Winter	N-030708-A-TSP	729.6	0.82	0.011	**18.4**
3/7/2008	B	N	WK	Winter	N-030708-B-TSP	739.2	0.52	0.009	**23.2**
3/7/2008	C	N	WK	Winter	N-030708-C-TSP	735.6	0.78	0.008	**14.5**
3/8/2008	A	D	WD	Winter	D-030808-A-TSP	711.6	0.66	0.005	**10.4**
3/8/2008	B	D	WD	Winter	D-030808-B-TSP	712.8	0.51	0.005	**13.8**
3/8/2008	C	D	WD	Winter	D-030808-C-TSP	705	0.65	0.004	**9.4**
3/8/2008	A	N	WD	Winter	N-030808-A-TSP	692.4	0.69	0.012	**25.0**
3/8/2008	B	N	WD	Winter	N-030808-B-TSP	681	0.54	0.012	**32.7**
3/8/2008	C	N	WD	Winter	N-030808-C-TSP	670.2	0.78	0.009	**18.0**
3/9/2008	A	D	WD	Winter	D-030908-A-TSP	658.8	0.95	0.013	**21.4**
3/9/2008	B	D	WD	Winter	D-030908-B-TSP	657	0.70	0.008	**17.0**
3/9/2008	C	D	WD	Winter	D-030908-C-TSP	675.6	0.93	0.010	**15.5**
3/9/2008	A	N	WD	Winter	N-030908-A-TSP	780.6	0.71	0.023	**41.2**
3/9/2008	B	N	WD	Winter	N-030908-B-TSP	772.8	0.90	0.015	**21.8**
3/9/2008	C	N	WD	Winter	N-030908-C-TSP	795.6	0.78	0.012	**19.3**
7/17/2008	A	D	WD	Summer	D-071708-A-TSP	695.4	0.55	0.029	**76.2**
7/17/2008	B	D	WD	Summer	D-071708-B-TSP	690	0.68	0.030	**64.2**
7/17/2008	C	D	WD	Summer	D-071708-C-TSP	684	0.68	0.029	**61.2**
7/17/2008	A	N	WD	Summer	N-071708-A-TSP	725.4	0.53	0.028	**71.3**
7/17/2008	B	N	WD	Summer	N-071708-B-TSP	741.6	0.69	0.027	**52.7**
7/17/2008	C	N	WD	Summer	N-017008-C-TSP	759	0.71	0.032	**59.0**
7/18/2008	A	D	WD	Summer	D-071808-A-TSP	686.4	0.61	0.036	**87.1**
7/18/2008	B	D	WD	Summer	D-071808-B-TSP	667.2	0.70	0.033	**71.7**
7/18/2008	C	D	WD	Summer	D-071808-C-TSP	655.2	0.68	0.031	**69.5**
7/18/2008	A	N	WD	Summer	N-071808-A-TSP	725.4	0.61	0.047	**107.3**
7/18/2008	B	N	WD	Summer	N-071808-B-TSP	747	0.62	0.056	**121.8**
7/18/2008	C	N	WD	Summer	N-071808-C-TSP	764.4	0.65	0.044	**89.2**
7/19/2008	A	D	WK	Summer	D-071908-A-TSP	705	0.49	0.025	**73.8**
7/19/2008	B	D	WK	Summer	D-071908-B-TSP	686.4	0.57	0.021	**54.1**
7/19/2008	C	D	WK	Summer	D-071908-C-TSP	669	0.67	0.022	**50.0**
7/19/2008	A	N	WK	Summer	N-071908-A-TSP	730.2	0.56	0.022	**54.1**
7/19/2008	B	N	WK	Summer	N-071908-B-TSP	733.2	0.61	0.021	**46.8**
7/19/2008	C	N	WK	Summer	N-071908-C-TSP	736.2	0.67	0.022	**44.1**
7/22/2008	A	D	WD	Summer	D-072208-A-TSP	729.6	0.57	0.028	**68.1**
7/22/2008	B	D	WD	Summer	D-072208-B-TSP	712.2	0.71	0.031	**61.1**
7/22/2008	C	D	WD	Summer	D-072208-C-TSP	703.8	0.79	0.035	**62.8**
7/22/2008	A	N	WD	Summer	N-072208-A-TSP	723	0.58	0.029	**69.7**
7/22/2008	B	N	WD	Summer	N-072208-B-TSP	716.4	0.67	0.030	**61.5**
7/22/2008	C	N	WD	Summer	N-072208-C-TSP	720.6	0.67	0.030	**61.7**
7/29/2008	A	D	WD	Summer	D-072908-A-TSP	693.6	0.56	0.037	**94.8**
7/29/2008	B	D	WD	Summer	D-072908-B-TSP	719.4	0.74	0.035	**65.3**
7/29/2008	C	D	WD	Summer	D-072908-C-TSP	732.6	0.75	0.042	**75.6**
7/29/2008	A	N	WD	Summer	N-072908-A-TSP	733.8	0.63	0.040	**86.5**
7/29/2008	B	N	WD	Summer	N-072908-B-TSP	731.4	0.76	0.041	**74.1**
7/29/2008	C	N	WD	Summer	N-072908-C-TSP	725.4	0.72	0.036	**68.6**
9/4/2008	A	D	WD	Summer	D-090408-A-TSP	694.2	0.52	0.049	**136.6**
9/4/2008	B	D	WD	Summer	D-090408-B-TSP	694.8	0.79	0.059	**106.7**
9/4/2008	C	D	WD	Summer	D-090408-C-TSP	695.4	0.79	0.060	**109.0**
9/4/2008	A	N	WD	Summer	N-090408-A-TSP	726	0.65	0.044	**92.4**
9/4/2008	B	N	WD	Summer	N-090408-B-TSP	724.2	0.75	0.037	**69.2**
9/4/2008	C	N	WD	Summer	N-090408-C-TSP	727.8	0.68	0.037	**75.0**

VI-3. $PM_{2.5}$ concentration ($\mu g/m^3$) at three sampling sites for a year sampling.

Date	Site	WD/WK	Season	Sample ID	Time (min)	Flow rate (L/min)	Net-weight (µg)	PM conc. µg/m³
9/21/2007	A	WK	Fall	092107-A-PM2.5	1440	16.7	0.741	**30.81**
9/21/2007	B	WK	Fall	NA	NA	NA	NA	**NA**
9/21/2007	C	WK	Fall	092107-C-PM2.5	1440	16.7	0.746	**31.02**
9/27/2007	A	WD	Fall	092707-A-PM2.5	1440	16.7	0.332	**13.78**
9/27/2007	B	WD	Fall	092707-B-PM2.5	1440	16.7	0.268	**11.14**
9/27/2007	C	WD	Fall	092707-C-PM2.5	1440	16.7	0.317	**13.18**
10/3/2007	A	WD	Fall	100307-A-PM2.5	1443	16.7	0.287	**11.91**
10/3/2007	B	WD	Fall	100307-B-PM2.5	1445	16.7	0.297	**12.31**
10/3/2007	C	WD	Fall	100307-C-PM2.5	1440	16.7	0.307	**12.77**
10/9/2007	A	WD	Fall	100907-A-PM2.5	1440	16.7	0.224	**9.31**
10/9/2007	B	WD	Fall	100907-B-PM2.5	1440	16.7	0.195	**8.11**
10/9/2007	C	WD	Fall	100907-C-PM2.5	1440	16.7	0.200	**8.32**
10/15/2007	A	WD	Fall	101507-A-PM2.5	1432	16.7	0.243	**10.16**
10/15/2007	B	WD	Fall	101507-B-PM2.5	1440	16.7	NA	**NA**
10/15/2007	C	WD	Fall	101507-C-PM2.5	1440	16.7	0.197	**8.21**
10/21/2007	A	WK	Fall	102107-A-PM2.5	1440	16.7	0.367	**15.24**
10/21/2007	B	WK	Fall	102107-B-PM2.5	1440	16.7	NA	**NA**
10/21/2007	C	WK	Fall	102107-C-PM2.5	1440	16.7	0.361	**15.01**
10/27/2007	A	WK	Fall	102707-A-PM2.5	1428	16.7	0.170	**7.11**
10/27/2007	B	WK	Fall	102707-B-PM2.5	1428	16.7	0.175	**7.34**
10/27/2007	C	WK	Fall	102707-C-PM2.5	1435	16.7	0.157	**6.53**
11/2/2007	A	WD	Fall	110207-A-PM2.5	1440	16.7	0.119	**4.93**
11/2/2007	B	WD	Fall	110207-B-PM2.5	1440	16.7	0.109	**4.55**
11/2/2007	C	WD	Fall	110207-C-PM2.5	1440	16.7	0.100	**4.18**
11/8/2007	A	WD	Fall	110807-A-PM2.5	720	16.7	0.154	**12.81**
11/8/2007	B	WD	Fall	110807-B-PM2.5	1440	16.7	0.315	**13.08**
11/8/2007	C	WD	Fall	110807-C-PM2.5	1440	16.7	0.309	**12.83**
11/14/2007	A	WD	Fall	111407-A-PM2.5	1440	16.7	0.741	**30.81**
11/14/2007	B	WD	Fall	111407-B-PM2.5	1440	16.7	0.774	**32.21**
11/14/2007	C	WD	Fall	111407-C-PM2.5	1440	16.7	0.756	**31.44**
11/20/2007	A	WD	Fall	112007-A-PM2.5	1430	16.7	0.446	**18.68**
11/20/2007	B	WD	Fall	112007-B-PM2.5	1440	16.7	0.417	**17.34**
11/20/2007	C	WD	Fall	112007-C-PM2.5	1440	16.7	0.422	**17.55**
11/26/2007	A	WD	Fall	112607-A-PM2.5	1423	16.7	0.429	**18.07**
11/26/2007	B	WD	Fall	112607-B-PM2.5	1440	16.7	0.430	**17.88**
11/26/2007	C	WD	Fall	112607-C-PM2.5	1440	16.7	0.423	**17.61**
12/2/2007	A	WK	Fall	120207-A-PM2.5	1440	16.7	0.575	**23.90**
12/2/2007	B	WK	Fall	120207-B-PM2.5	1440	16.7	0.570	**23.72**
12/2/2007	C	WK	Fall	120207-C-PM2.5	1440	16.7	0.679	**28.25**
12/8/2007	A	WK	Fall	120807-A-PM2.5	1440	16.7	0.628	**26.11**
12/8/2007	B	WK	Fall	120807-B-PM2.5	1440	16.7	0.583	**24.26**
12/8/2007	C	WK	Fall	120807-C-PM2.5	1440	16.7	0.581	**24.17**
12/14/2007	A	WD	Fall	121407-A-PM2.5	1440	16.7	0.410	**17.04**
12/14/2007	B	WD	Fall	121407-B-PM2.5	1440	16.7	0.404	**16.81**
12/14/2007	C	WD	Fall	121407-C-PM2.5	1440	16.7	0.369	**15.36**
12/20/2007	A	WD	Fall	122007-A-PM2.5	1440	16.7	0.440	**18.31**
12/20/2007	B	WD	Fall	122007-B-PM2.5	1440	16.7	0.578	**24.05**
12/20/2007	C	WD	Fall	122007-C-PM2.5	1440	16.7	0.424	**17.64**
12/26/2007	A	WD	Winter	122607-A-PM2.5	1440	16.7	0.369	**15.34**
12/26/2007	B	WD	Winter	122607-B-PM2.5	1440	16.7	0.347	**14.43**
12/26/2007	C	WD	Winter	122607-C-PM2.5	1440	16.7	0.321	**13.33**
1/1/2008	A	WD	Winter	010108-A-PM2.5	1440	16.7	0.184	**7.63**
1/1/2008	B	WD	Winter	010108-B-PM2.5	1440	16.7	NA	**NA**
1/1/2008	C	WD	Winter	010108-C-PM2.5	1440	16.7	0.166	**6.88**
1/7/2008	A	WD	Winter	010708-A-PM2.5	1440	16.7	0.801	**33.33**
1/7/2008	B	WD	Winter	010708-B-PM2.5	1440	16.7	NA	**NA**
1/7/2008	C	WD	Winter	010708-C-PM2.5	1440	16.7	0.794	**33.04**
1/13/2008	A	WK	Winter	011308-A-PM2.5	1440	16.7	0.189	**7.86**
1/13/2008	B	WK	Winter	011308-B-PM2.5	1440	16.7	NA	**NA**
1/13/2008	C	WK	Winter	011308-C-PM2.5	1440	16.7	0.166	**6.92**
1/19/2008	A	WK	Winter	011908-A-PM2.5	1440	16.7	0.311	**12.93**
1/19/2008	B	WK	Winter	011908-B-PM2.5	1440	16.7	0.288	**12.00**
1/19/2008	C	WK	Winter	011908-C-PM2.5	1440	16.7	0.296	**12.29**
1/25/2008	A	WD	Winter	012508-A-PM2.5	1440	16.7	0.272	**11.31**
1/25/2008	B	WD	Winter	012508-B-PM2.5	1440	16.7	0.254	**10.56**
1/25/2008	C	WD	Winter	012508-C-PM2.5	1440	16.7	0.256	**10.65**
2/5/2008	A	WD	Winter	020508-A-PM2.5	1440	16.7	0.776	**32.29**
2/5/2008	B	WD	Winter	020508-B-PM2.6	NA	NA	NA	**NA**
2/5/2008	C	WD	Winter	020508-C-PM2.5	1440	16.7	0.835	**34.74**
2/11/2008	A	WD	Winter	021108-A-PM2.5	1440	16.7	0.200	**8.34**
2/11/2008	B	WD	Winter	021108-B-PM2.5	NA	16.7	NA	**NA**
2/11/2008	C	WD	Winter	021108-C-PM2.5	1440	16.7	0.160	**6.67**

2/17/2008	A	WK	Winter	021708-A-PM2.5	1440	16.7	0.189	**7.84**
2/17/2008	B	WD	Winter	021708-B-PM2.5	NA	NA	NA	**NA**
2/17/2008	C	WK	Winter	021708-C-PM2.5	1440	16.7	0.190	**7.90**
2/23/2008	A	WK	Winter	022308-A-PM2.5	1440	16.7	0.375	**15.57**
2/23/2008	B	WD	Winter	022308-B-PM2.5	NA	NA	NA	**NA**
2/23/2008	C	WK	Winter	022308-C-PM2.5	1440	16.7	0.370	**15.37**
2/29/2008	A	WD	Winter	022908-A-PM2.5	1440	16.7	0.292	**12.12**
2/29/2008	B	WD	Winter	022908-B-PM2.5	1440	16.7	0.289	**12.02**
2/29/2008	C	WD	Winter	022908-C-PM2.5	1440	16.7	0.286	**11.87**
3/6/2008	A	WD	Winter	030608-A-PM2.5	1440	16.7	0.495	**20.60**
3/6/2008	B	WD	Winter	030608-B-PM2.5	1440	16.7	0.468	**19.44**
3/6/2008	C	WD	Winter	030608-C-PM2.5	1440	16.7	0.404	**16.80**
3/13/2008	A	WD	Winter	031308-A-PM2.5	1440	16.7	0.484	**20.13**
3/13/2008	B	WD	Winter	031308-B-PM2.5	1440	16.7	0.480	**19.96**
3/13/2008	C	WD	Winter	031308-C-PM2.5	1440	16.7	0.485	**20.17**
3/19/2008	A	WD	Winter	031908-A-PM2.5	1440	16.7	0.333	**13.85**
3/19/2008	B	WD	Winter	031908-B-PM2.5	1440	16.7	0.324	**13.45**
3/19/2008	C	WD	Winter	031908-C-PM2.5	1440	16.7	0.316	**13.14**
3/25/2008	A	WD	Spring	032508-A-PM2.5	1440	16.7	0.215	**8.94**
3/25/2008	B	WD	Spring	032508-B-PM2.5	1440	16.7	0.205	**8.52**
3/25/2008	C	WD	Spring	032508-C-PM2.5	1440	16.7	0.210	**8.73**
3/31/2008	A	WD	Spring	033108-A-PM2.5	1440	16.7	0.227	**9.44**
3/31/2008	B	WD	Spring	033108-B-PM2.5	1440	16.7	0.224	**9.29**
3/31/2008	C	WD	Spring	033108-C-PM2.5	1440	16.7	0.226	**9.42**
4/6/2008	A	WK	Spring	040608-A-PM2.5	1440	16.7	0.139	**5.76**
4/6/2008	B	WK	Spring	040608-B-PM2.5	1440	16.7	0.134	**5.57**
4/6/2008	C	WK	Spring	040608-C-PM2.5	1440	16.7	0.138	**5.74**
4/12/2008	A	WK	Spring	041208-A-PM2.5	1440	16.7	0.215	**8.94**
4/12/2008	B	WK	Spring	041208-B-PM2.5	NA	NA	NA	**NA**
4/12/2008	C	WK	Spring	041208-C-PM2.5	1440	16.7	0.213	**8.86**
4/18/2008	A	WD	Spring	041808-A-PM2.5	1440	16.7	0.569	**23.64**
4/18/2008	B	WD	Spring	041808-B-PM2.5	1440	16.7	0.550	**22.85**
4/18/2008	C	WD	Spring	041808-C-PM2.5	1440	16.7	0.540	**22.46**
4/24/2008	A	WD	Spring	042408-A-PM2.5	1440	16.7	0.303	**12.62**
4/24/2008	B	WD	Spring	042408-B-PM2.5	1440	16.7	0.281	**11.66**
4/24/2008	C	WD	Spring	042408-C-PM2.5	1440	16.7	0.246	**10.23**
4/30/2008	A	WD	Spring	043008-A-PM2.5	1440	16.7	0.291	**12.10**
4/30/2008	B	WD	Spring	043008-B-PM2.5	1440	16.7	0.270	**11.23**
4/30/2008	C	WD	Spring	043008-C-PM2.5	1440	16.7	0.260	**10.81**
5/6/2008	A	WD	Spring	050608-A-PM2.5	1440	16.7	0.361	**14.99**
5/6/2008	B	WD	Spring	050608-B-PM2.5	1440	16.7	0.338	**14.03**
5/6/2008	C	WD	Spring	050608-C-PM2.5	1440	16.7	0.326	**13.54**
5/12/2008	A	WD	Spring	051208-A-PM2.5	1440	16.7	0.125	**5.22**
5/12/2008	B	WD	Spring	051208-B-PM2.5	1440	16.7	0.091	**3.80**
5/12/2008	C	WD	Spring	051208-C-PM2.5	1440	16.7	0.091	**3.76**
5/18/2008	A	WD	Spring	051908-A-PM2.5	1440	16.7	0.199	**8.28**
5/18/2008	B	WD	Spring	051908-B-PM2.5	1440	16.7	0.188	**7.84**
5/18/2008	C	WD	Spring	051908-C-PM2.5	1440	16.7	0.186	**7.71**
5/24/2008	A	WD	Spring	052408-A-PM2.5	1440	16.7	0.097	**4.05**
5/24/2008	B	WD	Spring	052408-B-PM2.5	1440	16.7	0.090	**3.74**
5/24/2008	C	WD	Spring	052408-C-PM2.5	1440	16.7	0.088	**3.66**
5/30/2008	A	WD	Spring	053008-A-PM2.5	1440	16.7	0.290	**12.06**
5/30/2008	B	WD	Spring	053008-B-PM2.5	1440	16.7	0.285	**11.83**
5/30/2008	C	WD	Spring	053008-C-PM2.5	1440	16.7	0.310	**12.89**
6/5/2008	A	WD	Spring	060508-A-PM2.5	1440	16.7	0.201	**8.36**
6/5/2008	B	WD	Spring	060508-B-PM2.5	1440	16.7	0.000	**0.00**
6/5/2008	C	WD	Spring	060508-C-PM2.5	1440	16.7	0.184	**7.63**
6/11/2008	A	WD	Spring	061108-A-PM2.5	1440	16.7	0.269	**11.19**
6/11/2008	B	WD	Spring	061108-B-PM2.5	1440	16.7	0.251	**10.44**
6/11/2008	C	WD	Spring	061108-C-PM2.5	1440	16.7	0.239	**9.94**
6/17/2008	A	WD	Spring	061708-A-PM2.5	1440	16.7	0.162	**6.72**
6/17/2008	B	WD	Spring	061708-B-PM2.5	1440	16.7	0.159	**6.59**
6/17/2008	C	WD	Spring	061708-C-PM2.5	1219	16.7	0.133	**6.56**
6/23/2008	A	WD	Summer	062308-A-PM2.5	1440	16.7	0.625	**26.01**
6/23/2008	B	WD	Summer	062308-B-PM2.5	1440	16.7	0.621	**25.84**
6/23/2008	C	WD	Summer	062308-C-PM2.5	1440	16.7	0.635	**26.38**
6/29/2008	A	WD	Summer	062908-A-PM2.5	1440	16.7	0.449	**18.67**
6/29/2008	B	WD	Summer	062908-B-PM2.5	1440	16.7	0.454	**18.90**
6/29/2008	C	WD	Summer	062908-C-PM2.5	NA	NA	NA	**NA**
7/5/2008	A	WD	Summer	070508-A-PM2.5	1440	16.7	0.679	**28.21**
7/5/2008	B	WD	Summer	070508-B-PM2.5	1440	16.7	0.662	**27.51**
7/5/2008	C	WD	Summer	070508-C-PM2.5	1440	16.7	0.625	**26.01**
7/11/2008	A	WD	Summer	071108-A-PM2.5	1440	16.7	0.270	**11.23**
7/11/2008	B	WD	Summer	071108-B-PM2.5	1440	16.7	0.245	**10.21**
7/11/2008	C	WD	Summer	071108-C-PM2.5	1440	16.7	0.254	**10.54**
7/23/2008	A	WD	Summer	072308-A-PM2.5	1440	16.7	0.445	**18.50**
7/23/2008	B	WD	Summer	072308-B-PM2.5	1350	16.7	0.416	**18.45**
7/23/2008	C	WD	Summer	072308-C-PM2.5	1440	16.7	0.436	**18.15**
8/4/2008	A	WD	Summer	080408-A-PM2.5	1440	16.7	0.195	**8.11**

8/4/2008	B	WD	Summer	080408-B-PM2.5	1440	16.7	0.162	**6.72**
8/4/2008	C	WD	Summer	080408-C-PM2.5	1440	16.7	0.159	**6.59**
8/10/2008	A	WD	Summer	081008-A-PM2.5	1440	16.7	0.285	**11.83**
8/10/2008	B	WD	Summer	081008-B-PM2.5	1440	16.7	0.268	**11.17**
8/10/2008	C	WD	Summer	081008-C-PM2.5	1440	16.7	0.267	**11.10**
8/16/2008	A	WD	Summer	081608-A-PM2.5	1440	16.7	0.133	**5.53**
8/16/2008	B	WD	Summer	081608-B-PM2.5	1440	16.7	0.161	**6.67**
8/16/2008	C	WD	Summer	081608-C-PM2.5	1440	16.7	0.146	**6.09**
8/22/2008	A	WD	Summer	082208-A-PM2.5	1440	16.7	0.205	**8.52**
8/22/2008	B	WD	Summer	082208-B-PM2.5	1440	16.7	0.194	**8.05**
8/22/2008	C	WD	Summer	082208-C-PM2.5	1440	16.7	0.209	**8.67**
8/28/2008	A	WD	Summer	082808-A-PM2.5	1440	16.7	0.172	**7.13**
8/28/2008	B	WD	Summer	082808-B-PM2.5	1440	16.7	0.172	**7.15**
8/28/2008	C	WD	Summer	082808-C-PM2.5	1440	16.7	0.176	**7.30**
9/3/2008	A	WD	Summer	090308-A-PM2.5	1440	16.7	0.270	**11.25**
9/3/2008	B	WD	Summer	090308-B-PM2.5	1440	16.7	0.272	**11.31**
9/3/2008	C	WD	Summer	090308-C-PM2.5	1440	16.7	NA	**NA**
9/9/2008	A	WD	Summer	090908-A-PM2.5	1440	16.7	0.169	**7.03**
9/9/2008	B	WD	Summer	090908-B-PM2.5	1440	16.7	0.153	**6.34**
9/9/2008	C	WD	Summer	090908-C-PM2.5	1440	16.7	NA	**NA**
9/15/2008	A	WD	Summer	091508-A-PM2.5	1440	16.7	0.097	**4.05**
9/15/2008	B	WD	Summer	091508-B-PM2.5	1440	16.7	0.091	**3.78**
9/15/2008	C	WD	Summer	091508-C-PM2.5	388.8	16.7	0.019	**3.00**
9/21/2008	A	WD	Summer	092108-A-PM2.5	1440	16.7	0.420	**17.44**
9/21/2008	B	WD	Summer	092108-B-PM2.5	1440	16.7	0.409	**17.01**
9/21/2008	C	WD	Summer	092108-C-PM2.5	1440	15.7	0.397	**17.56**

IV-4. $PM_{2.5}$ concentration ($\mu g/m^3$) at three sampling sites for an intensive sampling.

Date	Site	Day/ Night	WD/WK	Season	Sample ID	Time (min)	Flow rate (L/min)	Net-weight (µg)	PM conc. µg/m³
1/29/2008	A	D	WK	Winter	D-012908-A-PM2.5	684.6	16.7	0.506	**44.3**
1/29/2008	B	D	WK	Winter	D-012908-B-PM2.5	691.2	16.7	0.498	**43.1**
1/29/2008	C	D	WK	Winter	D-012908-C-PM2.5	685.2	16.7	0.506	**44.2**
1/29/2008	A	N	WK	Winter	N-012908-A-PM2.5	742.2	16.7	0.482	**38.9**
1/29/2008	B	N	WK	Winter	N-012908-B-PM2.5	736.8	16.7	0.477	**38.7**
1/29/2008	C	N	WK	Winter	N-012908-C-PM2.5	733.2	16.7	0.482	**39.3**
1/30/2008	A	D	WK	Winter	D-013008-A-PM2.5	682.8	16.7	0.079	**7.0**
1/30/2008	B	D	WK	Winter	D-013008-B-PM2.5	689.4	16.7	NA	**6.5**
1/30/2008	C	D	WK	Winter	D-013008-C-PM2.5	692.4	16.7	0.074	**6.4**
1/30/2008	A	N	WK	Winter	N-013008-A-PM2.5	728.4	16.7	0.114	**9.3**
1/30/2008	B	N	WK	Winter	N-013008-B-PM2.5	729	16.7	NA	**8.9**
1/30/2008	C	N	WK	Winter	N-013008-C-PM2.5	715.2	16.7	0.097	**8.2**
1/31/2008	A	D	WK	Winter	D-013108-A-PM2.5	680.4	16.7	0.094	**8.2**
1/31/2008	B	D	WK	Winter	D-013108-B-PM2.5	686.4	16.7	NA	**7.8**
1/31/2008	C	D	WK	Winter	D-013108-C-PM2.5	678.6	16.7	0.094	**8.3**
1/31/2008	A	N	WK	Winter	N-013108-A-PM2.5	706.2	16.7	0.175	**14.8**
1/31/2008	B	N	WK	Winter	N-013108-B-PM2.5	730.2	16.7	NA	**14.3**
1/31/2008	C	N	WK	Winter	N-013108-C-PM2.5	736.8	16.7	0.172	**14.0**
3/7/2008	A	D	WK	Winter	D-030708-A-PM2.5	632.4	16.7	0.157	**14.9**
3/7/2008	B	D	WK	Winter	D-030708-B-PM2.5	622.2	16.7	0.164	**15.8**
3/7/2008	C	D	WK	Winter	D-030708-C-PM2.5	624.6	16.7	0.143	**13.7**
3/7/2008	A	N	WK	Winter	N-030708-A-PM2.5	729.6	16.7	0.096	**7.9**
3/7/2008	B	N	WK	Winter	N-030708-B-PM2.5	739.2	16.7	0.101	**8.1**
3/7/2008	C	N	WK	Winter	N-030708-C-PM2.5	735.6	16.7	0.096	**7.9**
3/8/2008	A	D	WD	Winter	D-030808-A-PM2.5	711.6	16.7	0.071	**6.0**
3/8/2008	B	D	WD	Winter	D-030808-B-PM2.5	712.8	16.7	0.079	**6.7**
3/8/2008	C	D	WD	Winter	D-030808-C-PM2.5	705	16.7	0.069	**5.8**
3/8/2008	A	N	WD	Winter	N-030808-A-PM2.5	0	16.7	0.000	**4.6**
3/8/2008	B	N	WD	Winter	N-030808-B-PM2.5	681	16.7	0.047	**4.2**
3/8/2008	C	N	WD	Winter	N-030808-C-PM2.5	670.2	16.7	0.046	**4.1**
3/9/2008	A	D	WD	Winter	D-030908-A-PM2.5	658.8	16.7	0.054	**5.0**
3/9/2008	B	D	WD	Winter	D-030908-B-PM2.5	657	16.7	0.046	**4.2**
3/9/2008	C	D	WD	Winter	D-030908-C-PM2.5	675.6	16.7	0.047	**4.1**
3/9/2008	A	N	WD	Winter	N-030908-A-PM2.5	780.6	16.7	0.085	**6.6**
3/9/2008	B	N	WD	Winter	N-030908-B-PM2.5	772.8	16.7	0.085	**6.6**
3/9/2008	C	N	WD	Winter	N-030908-C-PM2.5	795.6	16.7	0.085	**6.4**
7/17/2008	A	D	WD	Summer	D-071708-A-PM2.5	720	16.7	0.255	**21.2**
7/17/2008	B	D	WD	Summer	D-071708-B-PM2.5	720	16.7	0.287	**23.9**
7/17/2008	C	D	WD	Summer	D-071708-C-PM2.5	720	16.7	0.265	**22.0**
7/17/2008	A	N	WD	Summer	N-071708-A-PM2.5	720	16.7	0.254	**21.1**
7/17/2008	B	N	WD	Summer	N-071708-B-PM2.5	720	16.7	0.232	**19.3**
7/17/2008	C	N	WD	Summer	N-017008-C-PM2.5	720	16.7	0.248	**20.6**
7/18/2008	A	D	WD	Summer	D-071808-A-PM2.5	720	16.7	0.357	**29.7**
7/18/2008	B	D	WD	Summer	D-071808-B-PM2.5	720	16.7	0.344	**28.7**
7/18/2008	C	D	WD	Summer	D-071808-C-PM2.5	720	16.7	0.330	**27.4**
7/18/2008	A	N	WD	Summer	N-071808-A-PM2.5	720	16.7	0.564	**46.9**
7/18/2008	B	N	WD	Summer	N-071808-B-PM2.5	720	16.7	0.587	**48.9**
7/18/2008	C	N	WD	Summer	N-071808-C-PM2.5	720	16.7	0.559	**46.5**
7/19/2008	A	D	WK	Summer	D-071908-A-PM2.5	720	16.7	0.312	**25.9**
7/19/2008	B	D	WK	Summer	D-071908-B-PM2.5	720	16.7	0.324	**26.9**
7/19/2008	C	D	WK	Summer	D-071908-C-PM2.5	720	16.7	0.323	**26.9**
7/19/2008	A	N	WK	Summer	N-071908-A-PM2.5	720	16.7	0.203	**16.8**
7/19/2008	B	N	WK	Summer	N-071908-B-PM2.5	720	16.7	0.195	**16.2**
7/19/2008	C	N	WK	Summer	N-071908-C-PM2.5	720	16.7	0.195	**16.2**
7/22/2008	A	D	WD	Summer	D-072208-A-PM2.5	720	16.7	0.276	**23.0**
7/22/2008	B	D	WD	Summer	D-072208-B-PM2.5	720	16.7	0.257	**21.4**
7/22/2008	C	D	WD	Summer	D-072208-C-PM2.5	720	16.7	0.266	**22.1**
7/22/2008	A	N	WD	Summer	N-072208-A-PM2.5	720	16.7	0.266	**22.1**
7/22/2008	B	N	WD	Summer	N-072208-B-PM2.5	720	16.7	0.261	**21.7**
7/22/2008	C	N	WD	Summer	N-072208-C-PM2.5	720	16.7	0.274	**22.8**
7/29/2008	A	D	WD	Summer	D-072908-A-PM2.5	720	16.7	0.377	**31.4**
7/29/2008	B	D	WD	Summer	D-072908-B-PM2.5	720	16.7	0.380	**31.6**
7/29/2008	C	D	WD	Summer	D-072908-C-PM2.5	720	16.7	0.393	**32.7**
7/29/2008	A	N	WD	Summer	N-072908-A-PM2.5	684	16.7	0.366	**32.0**
7/29/2008	B	N	WD	Summer	N-072908-B-PM2.5	720	16.7	0.357	**29.7**
7/29/2008	C	N	WD	Summer	N-072908-C-PM2.5	720	16.7	0.354	**29.4**
9/4/2008	A	D	WD	Summer	D-090408-A-PM2.5	679.8	16.7	0.293	**25.8**
9/4/2008	B	D	WD	Summer	D-090408-B-PM2.5	681	16.7	0.286	**25.1**
9/4/2008	C	D	WD	Summer	D-090408-C-PM2.5	681	16.7	0.291	**25.6**
9/4/2008	A	N	WD	Summer	N-090408-A-PM2.5	720	16.7	0.353	**29.4**
9/4/2008	B	N	WD	Summer	N-090408-B-PM2.5	723	16.7	0.361	**29.9**
9/4/2008	C	N	WD	Summer	N-090408-C-PM2.5	720	16.7	NA	**NA**

IV-5. PAHs concentration (ng/m^3) in the QFF, blank and surrogate corrected concentration at three sampling sites for a year sampling.

File No.	NAP	ACEN	ACE	FLN	PHE	AN	FL	PY	BaA	CHR	BbFA	BkFA	BaP	IP	BghiP	DBahA	Total PAH
092107-A	0.159	0.035	0.051	0.083	0.514	0.054	0.458	0.337	0.069	0.194	0.132	0.114	0.118	0.132		0.213	2.661
092107-B	0.087	0.021	0.024	0.049	0.289	0.030	0.273	0.202	0.044	0.116	0.083	0.052	0.058	0.073		0.115	1.518
092107-C	0.128	0.019	0.024	0.041	0.272	0.028	0.262	0.194	0.031	0.098	0.009	0.059	0.050	0.061		0.107	1.384
092707-A	0.912		0.117	0.151	0.941	0.105	0.904	0.727	0.129	0.273	0.156	0.148	0.187	0.162		0.328	5.240
092707-B	0.456		0.093	0.094	0.512	0.063	0.519	0.383	0.063	0.158	0.179	0.082	0.112	0.114		0.224	3.052
092707-C	0.222		0.053	0.043	0.252	0.028	0.249	0.171	0.028	0.068	0.089	0.042	0.055	0.049		0.091	1.439
100307-A	0.197			0.037	0.237	0.030	0.333	0.213	0.050	0.124	0.079	0.046	0.044	0.056		0.111	1.558
100307-B	0.100			0.022	0.152	0.018	0.183	0.136	0.037	0.079	0.010	0.031	0.031	0.041		0.075	0.914
100307-C	0.066			0.016	0.130	0.015	0.185	0.129	0.028	0.069	0.059	0.029	0.035	0.032		0.069	0.861
100907-A	0.283			0.051	0.356	0.040	0.475	0.417	0.092	0.171	0.174	0.085	0.100	0.095		0.162	2.500
100907-B	0.073			0.016	0.137	0.018	0.200	0.155	0.035	0.079	0.048	0.039	0.044	0.044	0.000	0.075	0.963
100907-C	0.079			0.019	0.160	0.018	0.218	0.171	0.049	0.094	0.066	0.043	0.058	0.057	0.000	0.009	1.042
101507-A	0.169	0.031	0.023	0.067	0.492	0.083	0.951	1.082	0.135	0.282	0.254	0.178	0.184	0.336	0.101	0.530	4.899
101507-B	0.085	0.016	0.012	0.021	0.203	0.024	0.458	0.393	0.072	0.146	0.100	0.103	0.111	0.162	0.041	0.206	2.153
101507-C	0.092	0.015	0.016	0.027	0.232	0.029	0.514	0.425	0.067	0.142	0.116	0.102	0.103	0.144	0.039	0.201	2.265
102107-A	0.386	0.019	0.034	0.065	0.341	0.042	0.478	0.351	0.043	0.146	0.100	0.080	0.086	0.157	0.048	0.262	2.638
102107-B	0.080	0.007	0.011	0.025	0.142	0.018	0.231	0.182	0.027	0.088	0.041	0.050	0.042	0.086	0.023	0.139	1.192
102107-C	0.094	0.008	0.015	0.030	0.177	0.017	0.294	0.221	0.027	0.091	0.053	0.042	0.038	0.089	0.029	0.131	1.359
102707-A	0.082	0.014	0.028	0.020	0.103	0.015	0.211	0.190	0.028	0.083	0.088	0.062	0.055	0.114	0.031	0.146	1.272
102707-B	0.028	0.006	0.012	0.010	0.063	0.010	0.159	0.121	0.022	0.056	0.244	0.439	3.308	0.634	0.206	0.898	6.216
102707-C	0.031	0.006	0.011	0.010	0.065	0.009	0.179	0.130	0.020	0.054	0.053	0.038	0.033	0.058	0.019	0.080	0.796
110207-A	0.113	0.023	0.026	0.043	0.220	0.047	0.703	0.646	0.099	0.180	0.088	0.136	0.138	0.215	0.000	0.488	3.165
110207-B																	
110207-C	0.039	0.015	0.019	0.055	0.480	0.031	0.410	0.382	0.045	0.107	0.068	0.077	0.072	0.106	0.045	0.191	2.142
110807-A	0.195	0.046	0.030	0.054	0.431	0.067	1.098	1.153	0.228	0.429	0.538	0.319	0.418	0.555	0.173	1.009	6.743
110807-B	0.111	0.028	0.021	0.039	0.263	0.045	0.554	0.571	0.111	0.216	0.229	0.210	0.224	0.303	0.090	0.647	3.661
110807-C	0.236	0.030	0.025	0.059	0.430	0.057	1.092	1.087	0.143	0.284	0.315	0.255	0.243	0.290	0.080	0.467	5.093
111407-A	0.230	0.015	0.033	0.034	0.246	0.043	0.427	0.423	0.103	0.252	0.161	0.130	0.137	0.379	0.087	0.782	3.481
111407-B	0.151	0.018	0.030	0.028	0.201	0.032	0.385	0.387	0.075	0.216	0.092	0.139	0.113	0.256	0.052	0.559	2.732
111407-C	0.145	0.014	0.022	0.024	0.163	0.023	0.367	0.353	0.068	0.169	0.074	0.122	0.110	0.243	0.059	0.496	2.452
112007-A	0.231	0.062	0.033	0.060	0.312	0.047	0.751	1.004	0.184	0.340	0.324	0.278	0.369	0.443	0.079	1.056	5.572
112007-B	0.100	0.026	0.020	0.030	0.252	0.040	0.575	0.755	0.143	0.250	0.129	0.226	0.297	0.402	0.078	0.908	4.231
112007-C	0.136	0.030	0.046	0.040	0.274	0.043	0.584	0.767	0.154	0.250	0.156	0.197	0.305	0.408	0.083	0.869	4.341
112607-A	0.173	0.056	0.030	0.041	0.278	0.052	0.722	0.775	0.238	0.488	0.223	0.339	0.361	0.580	0.127	1.524	6.007
112607-B	0.126	0.037	0.023	0.026	0.196	0.032	0.442	0.467	0.153	0.304	0.364	0.219	0.271	0.508	0.090	1.274	4.534
112607-C																	
120207-A	0.165	0.053	0.034	0.065	0.577	0.073	1.004	1.384	0.494	0.859	0.460	0.356	0.467	0.843	0.189	1.166	8.188

120207-B	0.131	0.039	0.012	0.033	0.380	0.053	0.844	1.129	0.378	0.622	0.167	0.275	0.344	0.570	0.141	0.763	5.881
120207-C	0.133	0.043	0.059	0.078	0.520	0.065	0.824	1.128	0.443	0.711	0.346	0.487	0.700	1.140	0.223	1.774	8.674
120807-A	0.086	0.025	0.133	0.123	0.497	0.059	0.589	0.716	0.148	0.402	0.223	0.314	0.272	0.400	0.131	0.648	4.768
120807-B	0.120	0.022	0.009	0.029	0.191	0.027	0.452	0.449	0.128	0.308	0.313	0.269	0.224	0.491	0.104	0.819	3.954
120807-C	0.171	0.021	0.039	0.042	0.282	0.038	0.564	0.628	0.172	0.380	0.412	0.353	0.297	0.481	0.121	0.675	4.675
121407-A	0.092	0.019	0.044	0.061	0.327	0.086	1.038	1.194	0.131	0.519	0.343	0.393	0.316	0.873	0.222	1.398	7.053
121407-B	0.057	0.014	0.057	0.064	0.299	0.031	0.593	0.728	0.135	0.338	0.172	0.282	0.170	0.320	0.094	0.610	3.964
121407-C	0.061	0.012	0.026	0.027	0.174	0.029	0.448	0.495	0.100	0.247	0.152	0.161	0.129	0.251	0.064	0.373	2.748
122007-A	0.121	0.034	0.026	0.041	0.306	0.042	0.984	1.098	0.232	0.473	0.302	0.385	0.397	0.542	0.104	0.779	5.868
122007-B	0.065	0.016	0.018	0.026	0.185	0.024	0.568	0.591	0.114	0.248	0.273	0.222	0.226	0.230	0.056	0.392	3.253
122007-C	0.069	0.015	0.013	0.022	0.174	0.020	0.480	0.505	0.093	0.237	0.250	0.187	0.183	0.328	0.082	0.480	3.138
122607-A	0.108	0.035	0.087	0.100	0.495	0.077	0.922	1.050	0.296	0.668	0.576	0.414	0.475	0.205	0.801	0.196	6.504
122607-B	0.166	0.036	0.060	0.039	0.203	0.036	0.379	0.369	0.166	0.346	0.240	0.223	0.232	0.512	0.147	0.745	3.901
122607-C	0.069	0.023	0.054	0.075	0.303	0.102	0.437	0.562	0.184	0.490	0.385	0.347	0.365	0.686	0.179	0.107	4.369
010108-A	0.028	0.011	0.029	0.027	0.168	0.021	0.364	0.332	0.074	0.186	0.021	0.206	0.158	0.352	0.098	0.431	2.507
010108-B	0.024	0.006	0.013	0.012	0.085	0.009	0.254	0.206	0.047	0.118	0.091	0.069	0.077	0.195	0.058	0.231	1.493
010108-C																	
010708-A	0.197	0.036	0.119	0.071	0.463	0.065	1.217	1.179	0.306	0.741	0.390	0.426	0.485	1.214	0.371	1.820	9.101
010708-B	0.134	0.029	0.083	0.069	0.328	0.053	0.707	0.817	0.258	0.564	0.404	0.365	0.377	0.910	0.251	1.384	6.734
010708-C	0.079	0.019	0.059	0.031	0.236	0.035	0.669	0.696	0.187	0.427	0.367	0.261	0.309	0.816	0.208	1.289	5.687
011308-A	0.116	0.036	0.042	0.040	0.260	0.031	0.608	0.694	0.116	0.273	0.065	0.117	0.094	0.227	0.056	0.356	3.129
011308-B	0.108	0.025	0.023	0.030	0.226	0.029	0.511	0.571	0.107	0.263	0.000	0.000	0.000	0.592	0.119	0.955	3.560
011308-C	0.049	0.016	0.017	0.015	0.096	0.014	0.236	0.247	0.055	0.153	0.120	0.108	0.092	0.345	0.070	0.558	2.189
011908-A	0.052	0.026	0.028	0.042	0.300	0.030	0.909	0.762	0.194	0.440	0.210	0.247	0.210	0.449	0.000	0.750	4.647
011908-B	0.065	0.023	0.026	0.038	0.373	0.032	1.004	0.812	0.208	0.447	0.358	0.291	0.303	0.790	0.248	1.002	6.020
011908-C	0.029	0.014	0.031	0.043	0.297	0.031	0.534	0.477	0.135	0.348	0.325	0.192	0.201	0.542	0.155	0.760	4.113
012508-A	0.069	0.035	0.012	0.044	0.497	0.044	1.386	1.347	0.201	0.448	0.415	0.256	0.301	0.703	0.173	0.932	6.861
012508-B	0.059	0.027	0.011	0.043	0.517	0.046	1.309	1.211	0.225	0.432	0.230	0.210	0.258	0.574	0.154	0.724	6.030
012508-C	0.032	0.016	0.009	0.027	0.327	0.029	0.807	0.740	0.137	0.295	0.119	0.195	0.199	0.384	0.083	0.464	3.862
020508-A	0.111	0.029	0.032	0.052	0.366	0.138	0.976	1.077	0.158	0.676	0.000	0.000	0.000	0.894	0.209	1.534	6.252
020508-B	0.188	0.030	0.035	0.052	0.422	0.061	1.064	1.136	0.215	0.464	0.258	0.294	0.303	0.073	0.181	1.277	6.051
020508-C	0.087	0.023	0.023	0.041	0.294	0.047	0.819	0.913	0.207	0.462	0.232	0.239	0.295	0.731	0.148	1.275	5.837
021108-A	0.043	0.021	0.025	0.043	0.464	0.040	1.259	1.232	0.172	0.357	0.306	0.156	0.208	0.498	0.136	0.648	5.609
021108-B	0.035	0.017	0.012	0.028	0.416	0.036	1.155	1.090	0.169	0.324	0.286	0.166	0.214	0.486	0.120	0.579	5.134
021108-C	0.024	0.013	0.008	0.017	0.269	0.020	0.719	0.667	0.113	0.237	0.156	0.129	0.151	0.328	0.083	0.386	3.320
021708-A	0.025	0.012	0.042	0.039	0.164	0.029	0.173	0.182	0.035	0.126	0.058	0.071	0.053	0.210	0.050	0.405	1.674
021708-B	0.027	0.010	0.012	0.016	0.090	0.020	0.199	0.162	0.043	0.118	0.151	0.067	0.066	0.287	0.065	0.540	1.874
021708-C	0.016	0.006	0.010	0.010	0.051	0.011	0.112	0.093	0.024	0.068	0.050	0.028	0.035	0.166	0.039	0.313	1.032
022308-A	0.051	0.011	0.025	0.034	0.200	0.023	0.384	0.380	0.076	0.212	0.125	0.135	0.135	0.329	0.072	0.587	2.778
022308-B																	
022308-C	0.025	0.006	0.007	0.015	0.101	0.010	0.287	0.257	0.062	0.166	0.106	0.098	0.094	0.259	0.056	0.338	1.885
022908-A	0.066	0.011	0.016	0.021	0.128	0.018	0.357	0.275	0.071	0.184	0.114	0.080	0.100	0.290	0.075	0.404	2.209

022908-B	0.024	0.012	0.015	0.022	0.160	0.021	0.409	0.316	0.073	0.212	0.115	0.104	0.095	0.354	0.089	0.519	2.541
022908-C	0.017	0.007	0.007	0.012	0.094	0.013	0.240	0.185	0.066	0.140	0.089	0.066	0.062	0.212	0.057	0.290	1.557
030608-A	0.075	0.028	0.015	0.037	0.370	0.058	1.106	1.316	0.277	0.566	0.218	0.338	0.455	1.086	0.215	2.104	8.266
030608-B	0.080	0.033	0.014	0.035	0.374	0.053	1.181	1.403	0.262	0.534	0.442	0.031	0.482	1.087	0.225	2.051	8.288
030608-C	0.075	0.026	0.012	0.032	0.285	0.043	0.923	1.091	0.210	0.440	0.347	0.286	0.364	0.809	0.194	1.537	6.675
031308-A	0.053	0.019	0.016	0.025	0.247	0.038	0.659	0.686	0.119	0.312	0.245	0.210	0.194	0.497	0.105	0.830	4.257
031308-B	0.051	0.024	0.016	0.025	0.236	0.037	0.704	0.707	0.116	0.304	0.288	0.161	0.193	0.408	0.136	0.772	4.178
031308-C	0.045	0.017	0.011	0.017	0.173	0.026	0.523	0.536	0.085	0.241	0.213	0.130	0.143	0.332	0.107	0.608	3.207
032508-A	0.100	0.022	0.023	0.030	0.175	0.029	0.411	0.352	0.095	0.198	0.199	0.096	0.121	0.272	0.089	0.349	2.562
032508-B	0.026	0.014	0.017	0.037	0.222	0.034	0.433	0.355	0.085	0.199	0.100	0.119	0.122	0.288	0.088	0.369	2.509
032508-C	0.030	0.010	0.012	0.017	0.133	0.019	0.338	0.278	0.064	0.156	0.079	0.094	0.089	0.190	0.054	0.266	1.829
033108-A	0.044	0.010	0.013	0.020	0.120	0.023	0.272	0.252	0.084	0.193	0.148	0.088	0.079	0.265	0.062	0.547	2.218
033108-B	0.048	0.016	0.036	0.027	0.129	0.026	0.357	0.320	0.086	0.262	0.137	0.123	0.114	0.272	0.000	0.610	2.564
033108-C	0.037	0.009	0.017	0.017	0.099	0.019	0.237	0.211	0.059	0.154	0.077	0.066	0.058	0.208	0.038	0.456	1.762
040608-A	0.052	0.016	0.028	0.032	0.225	0.041	0.462	0.456	0.077	0.168	0.147	0.106	0.106	0.240	0.069	0.300	2.526
040608-B	0.055	0.021	0.027	0.026	0.145	0.022	0.433	0.420	0.067	0.177	0.108	0.117	0.110	0.208	0.048	0.291	2.275
040608-C	0.040	0.012	0.018	0.016	0.099	0.013	0.163	0.161	0.018	0.113	0.000	0.000	0.000	0.218	0.064	0.277	1.212
041208-A	0.030	0.011	0.018	0.020	0.130	0.017	0.272	0.245	0.051	0.143	0.080	0.064	0.068	0.135	0.046	0.158	1.488
041208-B	0.026	0.010	0.022	0.021	0.115	0.021	0.324	0.253	0.047	0.145	0.085	0.070	0.069	0.162	0.050	0.230	1.648
041208-C	0.016	0.005	0.015	0.011	0.061	0.011	0.200	0.149	0.030	0.100	0.042	0.054	0.040	0.082	0.025	0.117	0.957
041808-A	0.201	0.065	0.050	0.127	0.880	0.142	1.653	1.612	0.282	0.939	0.590	0.635	0.664	1.460	0.391	3.232	12.922
041808-B	0.146	0.047	0.037	0.089	0.622	0.110	1.168	1.165	0.260	0.659	0.422	0.364	0.471	1.176	0.337	2.211	9.283
041808-C	0.128	0.044	0.030	0.069	0.516	0.096	1.100	1.062	0.234	0.612	0.280	0.382	0.414	1.058	0.278	2.021	8.324
042408-A	0.159	0.040	0.038	0.113	0.789	0.117	1.610	1.413	0.170	0.472	0.235	0.223	0.240	0.392	0.138	0.651	6.800
042408-B	0.103	0.029	0.031	0.089	0.584	0.107	1.063	0.852	0.128	0.317	0.183	0.151	0.146	0.355	0.133	0.549	4.819
042408-C	0.090	0.028	0.028	0.074	0.447	0.092	0.880	0.731	0.113	0.304	0.206	0.146	0.155	0.353	0.119	0.513	4.280
043008-A	0.090	0.032	0.016	0.040	0.377	0.047	1.043	1.128	0.132	0.282	0.142	0.126	0.151	0.259	0.071	0.404	4.339
043008-B	0.065	0.020	0.020	0.034	0.302	0.037	0.673	0.681	0.105	0.226	0.111	0.112	0.152	0.320	0.085	0.452	3.395
043008-C	0.050	0.017	0.011	0.033	0.270	0.042	0.507	0.535	0.085	0.199	0.165	0.089	0.118	0.239	0.056	0.349	2.764
050608-A	0.168	0.045	0.066	0.139	0.677	0.179	1.738	1.585	0.244	0.557	0.307	0.245	0.263	0.631	0.184	0.118	7.147
050608-B	0.125	0.034	0.070	0.157	0.727	0.122	1.056	0.992	0.126	0.429	0.189	0.190	0.208	0.500	0.129	0.976	6.032
050608-C	0.109	0.030	0.025	0.072	0.476	0.068	0.958	0.799	0.131	0.344	0.244	0.136	0.178	0.349	0.119	0.597	4.635
051208-A	0.102	0.028	0.028	0.033	0.239	0.035	0.525	0.573	0.066	0.143	0.113	0.137	0.112	0.094	0.018	0.170	2.416
051208-B	0.081	0.014	0.021	0.023	0.122	0.017	0.273	0.276	0.039	0.091	0.067	0.087	0.068	0.064	0.009	0.109	1.361
051208-C	0.057	0.013	0.025	0.021	0.106	0.017	0.208	0.210	0.038	0.090	0.055	0.091	0.057	0.055	0.009	0.098	1.150
051808-A	0.102	0.018	0.068	0.048	0.226	0.030	0.335	0.314	0.041	0.108	0.125	0.104	0.074	0.072	0.014	0.158	1.836
051808-B	0.181	0.014	0.054	0.029	0.151	0.025	0.241	0.205	0.029	0.093	0.080	0.075	0.061	0.073	0.012	0.141	1.463
051808-C	0.120	0.016	0.044	0.023	0.098	0.019	0.127	0.109	0.024	0.068	0.042	0.079	0.043	0.057	0.008	0.108	0.987
052408-A	0.414	0.023	0.048	0.040	0.212	0.027	0.363	0.255	0.048	0.138	0.178	0.107	0.092	0.103	0.020	0.152	2.221
052408-B	0.511	0.020	0.041	0.041	0.241	0.033	0.394	0.246	0.039	0.123	0.124	0.127	0.091	0.095	0.020	0.136	2.284
052408-C	0.243	0.018	0.034	0.032	0.162	0.027	0.240	0.153	0.033	0.108	0.089	0.099	0.079	0.088	0.017	0.124	1.545
053008-A	0.194	0.022	0.043	0.040	0.292	0.059	0.459	0.339	0.094	0.303	0.428	0.268	0.207	0.229	0.043	0.334	3.354

053008-B	0.280	0.018	0.039	0.038	0.229	0.048	0.362	0.277	0.080	0.227	0.165	0.228	0.149	0.170	0.033	0.253	2.598
053008-C	0.249	0.019	0.053	0.039	0.239	0.052	0.366	0.278	0.078	0.232	0.186	0.220	0.161	0.185	0.038	0.274	2.669
060508-A	0.273	0.019	0.041	0.038	0.206	0.043	0.346	0.252	0.040	0.153	0.070	0.103	0.065	0.066	0.015	0.135	1.864
060508-B	0.175	0.014	0.034	0.026	0.126	0.037	0.222	0.167	0.030	0.120	0.071	0.064	0.051	0.055	0.012	0.109	1.312
060508-C	0.126	0.011	0.025	0.019	0.104	0.033	0.161	0.125	0.027	0.101	0.087	0.071	0.041	0.047	0.009	0.095	1.082
061108-A	0.580	0.047	0.552	1.679	10.378	0.225	2.446	1.216	0.059	0.200	0.115	0.073	0.063	0.042	0.009	0.098	17.782
061108-B	0.278	0.023	0.038	0.059	0.494	0.053	0.757	0.482	0.050	0.224	0.174	0.095	0.071	0.060	0.014	0.138	3.008
061108-C	0.514	0.019	0.063	0.057	0.402	0.048	0.591	0.373	0.054	0.211	0.142	0.123	0.078	0.065	0.014	0.133	2.886
061708-A	0.355	0.036	0.082	0.085	0.565	0.076	1.088	0.911	0.107	0.263	0.234	0.165	0.114	0.083	0.017	0.181	4.361
061708-B	0.323	0.023	0.063	0.038	0.278	0.041	0.490	0.357	0.046	0.140	0.072	0.089	0.059	0.058	0.011	0.104	2.192
061708-C	0.158	0.019	0.048	0.034	0.218	0.038	0.368	0.268	0.040	0.122	0.054	0.085	0.011	0.055	0.009	0.091	1.618
062308-A	0.088	0.014	0.102	0.060	0.197	0.058	0.182	0.140	0.035	0.119	0.170	0.097	0.076	0.075	0.012	0.155	1.580
062308-B	0.152	0.014	0.053	0.039	0.230	0.028	0.302	0.231	0.040	0.120	0.082	0.117	0.096	0.083	0.012	0.168	1.767
062308-C	0.232	0.022	0.093	0.040	0.289	0.029	0.419	0.299	0.048	0.162	0.186	0.152	0.100	0.094	0.012	0.196	2.374
062908-A																	
062908-B	0.344	0.010	0.055	0.035	0.151	0.028	0.246	0.160	0.030	0.111	0.072	0.078	0.058	0.052	0.009	0.088	1.526
062908-C	0.293	0.012	0.064	0.038	0.184	0.032	0.266	0.175	0.031	0.142	0.088	0.102	0.078	0.067	0.011	0.118	1.699
070508-A	0.373	0.013	0.063	0.095	0.907	0.034	1.270	0.629	0.025	0.118	0.067	0.035	0.054	0.055	0.008	0.199	3.945
070508-B	0.489	0.013	0.075	0.104	0.817	0.034	1.237	0.634	0.027	0.120	0.076	0.052	0.055	0.050	0.006	0.173	3.961
070508-C	0.658	0.014	0.062	0.063	0.560	0.026	0.913	0.498	0.023	0.109	0.055	0.062	0.053	0.056	0.006	0.178	3.336
071108-A	0.068	0.024	0.063	0.099	0.620	0.056	0.761	0.404	0.053	0.199	0.115	0.112	0.085	0.083	0.019	0.155	2.917
071108-B	0.628	0.016	0.049	0.062	0.407	0.035	0.495	0.284	0.043	0.161	0.096	0.087	0.067	0.069	0.014	0.129	2.643
071108-C	0.800	0.020	0.057	0.072	0.531	0.043	0.753	0.423	0.054	0.181	0.166	0.086	0.074	0.066	0.013	0.133	3.474
072308-A	1.339	0.041	0.163	0.042	0.435	0.029	0.628	0.351	0.029	0.142	0.108	0.075	0.048	0.059	0.011	0.153	3.653
072308-B	0.211	0.011	0.060	0.066	0.354	0.024	0.474	0.267	0.019	0.096	0.053	0.045	0.032	0.039	0.006	0.105	1.862
072308-C	1.702	0.020	0.098	0.046	0.402	0.025	0.644	0.353	0.027	0.127	0.052	0.066	0.040	0.046	0.007	0.132	3.786
080408-A	0.247	0.031	0.055	0.084	0.829	0.070	1.424	1.046	0.061	0.213	0.071	0.104	0.063	0.030	0.007	0.087	4.421
080408-B	0.161	0.019	0.042	0.073	0.695	0.064	1.144	0.699	0.047	0.182	0.119	0.071	0.048	0.029	0.007	0.068	3.465
080408-C	0.129	0.015	0.046	0.068	0.650	0.056	1.044	0.603	0.044	0.150	0.106	0.059	0.045	0.023	0.006	0.060	3.106
081008-A	0.163	0.013	0.058	0.069	0.451	0.033	0.542	0.291	0.028	0.110	0.071	0.068	0.046	0.052	0.009	0.123	2.128
081008-B	0.060	0.006	0.026	0.030	0.208	0.018	0.307	0.191	0.020	0.069	0.050	0.038	0.031	0.029	0.005	0.077	1.166
081008-C	0.097	0.008	0.061	0.059	0.387	0.022	0.518	0.316	0.021	0.086	0.053	0.040	0.035	0.024	0.006	0.072	1.805
081608-A	0.237	0.018	0.059	0.085	0.725	0.049	0.994	0.582	0.042	0.142	0.122	0.092	0.053	0.036	0.007	0.095	3.340
081608-B	0.105	0.013	0.044	0.053	0.390	0.030	0.519	0.286	0.029	0.098	0.048	0.064	0.044	0.038	0.007	0.092	1.861
081608-C	0.166	0.013	0.061	0.090	0.722	0.054	0.833	0.436	0.028	0.093	0.093	0.049	0.042	0.026	0.004	0.076	2.787
082208-A	0.175	0.022	0.060	0.086	1.036	0.047	0.692	0.414	0.067	0.204	0.113	0.137	0.086	0.073	0.016	0.168	3.396
082208-B	0.114	0.014	0.032	0.058	0.433	0.044	0.679	0.391	0.051	0.155	0.139	0.113	0.093	0.074	0.014	0.162	2.567
082208-C	0.213	0.017	0.061	0.103	0.694	0.059	0.953	0.501	0.057	0.164	0.180	0.104	0.081	0.068	0.014	0.168	3.438
082808-A	0.315	0.031	0.086	0.118	1.158	0.127	1.100	0.774	0.106	0.274	0.274	0.165	0.135	0.094	0.018	0.273	5.050
082808-B	0.072	0.014	0.021	0.035	0.217	0.033	0.288	0.246	0.046	0.125	0.090	0.081	0.091	0.074	0.013	0.197	1.643
082808-C	0.128	0.013	0.042	0.058	0.342	0.036	0.415	0.318	0.046	0.132	0.132	0.105	0.085	0.067	0.013	0.209	2.141
090308-A	0.143	0.013	0.055	0.075	0.504	0.047	0.691	0.388	0.044	0.174	0.131	0.104	0.076	0.062	0.014	0.131	2.653

090308-B	0.009	0.009	0.031	0.037	0.257	0.026	0.377	0.239	0.035	0.119	0.061	0.084	0.055	0.052	0.011	0.103	1.504
090308-C	0.120	0.011	0.045	0.059	0.379	0.032	0.539	0.309	0.033	0.122	0.064	0.082	0.053	0.039	0.009	0.091	1.989
090908-A	0.095	0.014	0.031	0.045	0.414	0.046	0.625	0.451	0.035	0.114	0.040	0.063	0.036	0.019	0.003	0.068	2.101
090908-B	0.062	0.008	0.029	0.033	0.272	0.032	0.427	0.274	0.022	0.080	0.065	0.047	0.029	0.021	0.003	0.063	1.468
090908-C	0.076	0.011	0.028	0.037	0.318	0.036	0.487	0.291	0.025	0.078	0.065	0.041	0.029	0.021	0.003	0.062	1.608
091508-A	0.113	0.020	0.033	0.052	0.455	0.046	0.866	0.683	0.041	0.123	0.049	0.062	0.045	0.017	0.004	0.047	2.655
091508-B	0.077	0.014	0.025	0.039	0.320	0.039	0.624	0.408	0.024	0.077	0.029	0.044	0.030	0.014	0.001	0.040	1.804
091508-C	0.081	0.015	0.028	0.045	0.342	0.039	0.940	0.579	0.039	0.133	0.041	0.041	0.031	0.016	0.005	0.039	2.414
092108-A	0.912	0.061	0.114	2.336	0.682	0.075	0.772	0.456	0.088	0.203	0.298	0.265	0.174	0.177	0.028	0.320	6.960
092108-B	0.073	0.009	0.024	0.037	0.241	0.019	0.303	0.187	0.024	0.095	0.082	0.063	0.048	0.054	0.009	0.096	1.365
092108-C	0.101	0.009	0.024	0.042	0.260	0.023	0.330	0.192	0.025	0.088	0.056	0.074	0.044	0.048	0.009	0.090	1.413

IV-6. PAHs concentration (ng/m^3) in the PUF, blank and surrogate corrected concentration at three sampling sites for a year sampling.

File No.	NAP	ACEN	ACE	FLN	PHE	AN	FL	PY	BaA	CHR	BbFA	BkFA	BaP	IP	BghiP	DBahA	Total PAH
092107-A	0.807	0.319	1.301	8.242	27.520	0.000	1.033	0.464	0.000	0.047	0.000	0.000	0.000	0.000	0.000	0.000	39.731
092107-B	0.433	0.191	0.748	6.975	20.728	1.564	0.800	0.337	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	31.776
092107-C	0.502	0.268	1.014	6.920	17.971	0.000	0.668	0.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	27.642
092707-A	2.586	1.213	2.777	13.054	61.509	3.764	8.484	3.876	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	97.264
092707-B	2.059	0.801	3.453	11.925	37.289	0.411	3.000	1.681	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	60.619
092707-C	0.775	0.498	1.447	4.121	13.903	0.884	3.513	1.771	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	26.912
100307-A	0.794	0.548	1.145	3.160	20.344	0.891	3.239	1.467	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	31.588
100307-B	0.488	0.319	0.676	1.894	10.787	0.486	1.477	0.803	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.929
100307-C	0.447	0.286	0.599	1.654	10.281	0.497	1.596	0.840	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.201
100907-A	1.107	0.877	0.939	3.709	14.052	0.910	2.099	1.290	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24.982
100907-B	0.704	0.499	0.634	2.317	9.244	0.573	1.387	0.908	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.267
100907-C	0.726	0.467	0.651	2.288	8.639	0.449	1.404	0.850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.475
101507-A	0.929	0.580	0.623	3.546	7.409	0.000	3.080	0.382	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.549
101507-B	0.000	0.000	0.627	1.558	7.149	0.000	1.283	0.856	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.473
101507-C	0.745	0.314	0.569	1.534	2.184	0.000	0.344	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.726
102107-A	2.493	0.769	1.882	8.829	15.398	0.000	1.677	0.752	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	31.799
102107-B	1.126	0.348	0.912	4.429	8.247	0.000	0.842	0.425	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.329
102107-C	1.156	0.375	1.148	5.107	7.699	0.000	0.764	0.395	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.644
102707-A	0.696	0.206	0.389	1.358	3.982	0.000	0.954	0.506	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.090
102707-B	0.363	0.156	0.320	1.075	3.062	0.000	0.754	0.430	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.162
102707-C	0.254	0.116	0.237	0.599	2.061	0.000	3.609	2.015	1.186	1.165	0.000	0.000	0.000	0.000	0.000	0.000	11.244
110207-A	0.812	0.177	0.464	2.131	3.292	0.270	0.688	0.639	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	8.476
110207-B	0.457	0.072	0.287	1.241	2.047	0.129	0.508	0.489	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	5.231
110207-C	0.521	0.069	0.273	0.869	1.722	0.087	0.522	0.430	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	4.495
110807-A	4.586	2.180	2.057	6.030	7.627	0.683	1.677	1.657	0.002	0.003	0.002	0.001	0.002	0.004	0.006	0.003	26.522
110807-B	2.537	1.268	1.286	4.845	5.832	0.493	1.399	1.545	0.011	0.019	0.009	0.017	0.015	0.015	0.004	0.022	19.317
110807-C	3.124	1.452	1.623	3.602	4.755	0.386	0.842	0.781	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	16.567
111407-A	1.482	0.250	0.796	3.067	9.265	0.712	2.010	1.580	0.008	0.039	0.000	0.000	0.000	0.000	0.000	0.000	19.209
111407-B	1.562	0.272	0.809	3.768	8.758	0.715	2.197	1.907	0.008	0.035	0.001	0.001	0.002	0.000	0.000	0.000	20.036
111407-C	0.672	0.161	0.420	2.369	6.333	0.477	1.459	1.280	0.007	0.032	0.000	0.000	0.000	0.000	0.000	0.000	13.210
112007-A	3.653	1.636	1.410	4.976	8.891	0.906	2.401	2.512	0.009	0.021	0.002	0.002	0.003	0.007	0.012	0.005	26.446
112007-B	3.294	1.817	1.501	5.190	7.500	0.924	2.146	2.309	0.004	0.008	0.000	0.000	0.000	0.001	0.001	0.000	24.693
112007-C	2.718	1.649	1.413	4.331	7.011	0.805	1.239	1.292	0.005	0.010	0.002	0.002	0.002	0.004	0.006	0.004	20.492
112607-A	3.499	4.937	1.928	5.195	9.826	1.278	3.458	3.571	0.020	0.032	0.002	0.003	0.003	0.002	0.007	0.001	33.763
112607-B	2.250	4.502	1.744	5.088	8.947	1.079	3.469	3.603	0.016	0.025	0.002	0.002	0.002	0.001	0.001	0.002	30.734
112607-C	2.146	4.190	1.806	5.110	8.808	1.089	3.614	3.727	0.016	0.028	0.000	0.000	0.000	0.000	0.000	0.000	30.535

120207-A	0.924	0.289	0.521	2.778	8.506	0.931	2.226	2.386	0.014	0.037	0.001	0.002	0.001	0.002	0.002	0.003	18.625
120207-B	0.656	0.138	0.299	2.002	6.464	0.596	1.656	1.902	0.013	0.028	0.001	0.000	0.000	0.000	0.000	0.001	13.756
120207-C	0.575	0.157	0.302	1.686	4.871	0.524	1.738	1.912	0.012	0.026	0.001	0.000	0.000	0.000	0.000	0.000	11.803
120807-A	3.297	3.154	1.627	4.488	7.897	0.674	2.594	2.260	0.076	0.132	0.107	0.104	0.081	0.072	0.019	0.107	26.689
120807-B	1.686	1.660	1.098	3.234	4.968	0.424	2.048	1.880	0.014	0.035	0.013	0.019	0.019	0.021	0.005	0.029	17.152
120807-C	1.637	1.138	0.769	2.380	3.889	0.330	1.673	1.452	0.003	0.015	0.000	0.000	0.000	0.000	0.000	0.000	13.288
121407-A	2.098	1.016	0.732	2.699	5.767	0.528	2.204	2.118	0.004	0.011	0.002	0.001	0.001	0.001	0.001	0.002	17.185
121407-B	1.466	0.649	0.582	1.792	3.654	0.337	1.332	1.241	0.002	0.007	0.001	0.001	0.001	0.001	0.000	0.001	11.066
121407-C	1.210	0.486	0.483	1.577	3.135	0.275	1.237	1.225	0.002	0.007	0.000	0.000	0.000	0.000	0.000	0.000	9.637
122007-A	2.222	1.912	1.002	3.736	7.304	0.702	2.244	2.083	0.001	0.006	0.002	0.002	0.002	0.003	0.002	0.003	21.228
122007-B	1.447	1.227	0.790	2.133	3.802	0.295	1.362	1.191	0.003	0.013	0.001	0.001	0.001	0.001	0.002	0.001	12.271
122007-C	1.289	0.839	0.599	1.647	3.161	0.239	0.841	0.681	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	9.303
122607-A	2.160	1.253	2.763	3.383	8.231	0.813	1.721	1.580	0.004	0.009	0.006	0.010	0.011	0.060	0.130	0.036	22.170
122607-B	1.137	0.559	0.479	2.255	3.766	0.432	1.573	1.541	0.001	0.005	0.000	0.000	0.000	0.001	0.001	0.001	11.753
122607-C	1.066	0.625	0.523	1.844	3.109	0.391	1.396	1.334	0.004	0.009	0.000	0.000	0.000	0.000	0.002	0.000	10.304
010108-A	1.380	0.223	0.352	1.168	2.691	0.105	0.851	0.587	0.001	0.008	0.000	0.000	0.000	0.000	0.000	0.000	7.366
010108-B	1.001	0.117	0.280	0.796	1.866	0.096	0.535	0.380	0.001	0.097	0.001	0.002	0.002	0.003	0.004	0.003	5.185
010108-C																	
010708-A	2.545	1.024	1.790	6.203	14.301	1.156	4.736	3.509	0.014	0.045	0.002	0.002	0.000	0.000	0.000	0.000	35.326
010708-B	1.712	0.679	1.033	7.248	14.179	1.569	3.724	3.125	0.015	0.043	0.004	0.003	0.003	0.004	0.001	0.006	33.348
010708-C	1.547	0.590	0.939	4.718	9.033	0.892	2.588	0.219	0.012	0.037	0.000	0.000	0.000	0.000	0.000	0.000	20.574
011308-A	1.686	0.693	0.764	2.196	4.384	0.258	1.978	1.924	0.009	0.037	0.000	0.000	0.000	0.002	0.002	0.003	13.934
011308-B	1.611	0.760	0.834	2.638	4.865	0.293	2.408	2.445	0.003	0.025	0.003	0.004	0.004	0.006	0.008	0.005	15.911
011308-C	1.071	0.351	0.485	1.302	2.907	0.148	1.589	1.653	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.506
011908-A	1.486	0.277	0.484	1.447	2.448	0.087	0.864	0.666	0.001	0.005	0.001	0.001	0.002	0.000	0.000	0.000	7.768
011908-B	2.053	0.302	7.411	1.951	3.168	0.078	1.030	0.692	0.003	0.008	0.003	0.003	0.003	0.002	0.000	0.004	16.711
011908-C	0.966	0.149	0.405	1.276	1.976	0.060	0.836	0.603	0.001	0.010	0.001	0.000	0.001	0.000	0.000	0.000	6.283
012508-A	2.241	0.706	0.698	1.829	2.983	0.121	0.484	0.314	0.004	0.006	0.007	0.012	0.010	0.074	0.156	0.041	9.685
012508-B	2.248	0.576	0.673	1.559	2.210	0.086	0.727	0.432	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.001	8.515
012508-C	1.747	0.357	0.431	0.912	1.531	0.052	0.416	0.229	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	5.679
020508-A	4.894	1.929	1.998	6.658	14.950	1.501	5.154	4.536	0.009	0.021	0.001	0.001	0.001	0.001	0.000	0.001	41.654
020508-B	3.758	0.756	0.825	5.915	11.267	0.997	4.250	3.930	0.005	0.018	0.000	0.001	0.000	0.001	0.000	0.001	31.725
020508-C	2.945	1.241	1.403	5.830	11.117	1.054	2.730	2.314	0.008	0.020	0.000	0.000	0.000	0.000	0.000	0.000	28.662
021108-A	4.130	0.612	0.715	1.159	2.212	0.074	0.193	0.107	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.003	9.213
021108-B	4.128	0.607	0.765	1.157	2.089	0.073	0.183	0.096	0.003	0.003	0.001	0.001	0.000	0.000	0.000	0.000	9.105
021108-C	3.361	0.478	0.473	0.697	1.334	0.040	0.155	0.067	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	6.608
021708-A	0.775	0.195	0.834	2.070	6.960	0.245	2.621	1.863	0.005	0.061	0.005	0.002	0.003	0.000	0.000	0.000	15.639
021708-B	0.546	0.180	0.753	1.963	6.121	0.246	2.782	2.320	0.004	0.067	0.002	0.002	0.002	0.130	0.000	0.000	15.119
021708-C	0.341	0.115	0.461	1.118	3.676	0.145	1.548	1.301	0.002	0.042	0.001	0.001	0.001	0.000	0.000	0.000	8.753
022308-A	2.058	0.657	0.837	1.798	3.023	0.138	0.939	0.788	0.003	0.014	0.002	0.001	0.002	0.001	0.002	0.002	10.265

022308-B																	
022308-C	1.637	0.341	0.717	1.307	2.409	0.088	0.694	0.472	0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	7.669
022908-A	1.023	0.250	0.665	1.222	2.489	0.085	1.066	0.712	0.001	0.006	0.001	0.001	0.001	0.001	0.000	0.001	7.524
022908-B	1.198	0.241	0.780	1.861	3.133	0.082	1.008	0.666	0.001	0.009	0.000	0.000	0.000	0.000	0.000	0.000	8.980
022908-C	0.848	0.200	0.546	1.118	2.028	0.067	0.939	0.650	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.001	6.403
030608-A	2.528	1.454	1.156	3.980	7.150	0.554	2.970	2.805	0.003	0.012	0.002	0.002	0.003	0.004	0.001	0.007	22.631
030608-B	4.600	1.936	0.455	5.211	9.714	1.067	3.550	3.488	0.001	0.007	0.000	0.000	0.000	0.000	0.000	0.000	30.029
030608-C	3.012	0.850	0.764	3.992	6.107	0.438	2.403	2.304	0.001	0.006	0.001	0.000	0.000	0.000	0.000	0.000	19.879
031308-A	3.904	1.026	1.322	2.309	4.288	0.227	2.190	1.591	0.001	0.004	0.000	0.001	0.000	0.001	0.000	0.001	16.866
031308-B	4.373	0.966	1.393	2.853	5.466	0.304	2.042	1.594	0.003	0.011	0.004	0.006	0.006	0.008	0.002	0.012	19.042
031308-C	3.143	0.635	0.897	2.272	3.734	0.185	1.690	1.326	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	13.886
032508-A	1.079	0.174	0.788	1.264	2.319	0.056	0.919	0.510	0.004	0.006	0.002	0.000	0.003	0.002	0.001	0.002	7.129
032508-B	1.057	0.183	0.773	1.685	3.126	0.082	1.186	0.678	0.003	0.006	0.003	0.003	0.004	0.005	0.002	0.006	8.802
032508-C	1.008	0.169	0.773	14.773	2.484	0.068	0.834	0.455	0.001	0.005	0.001	0.000	0.000	0.000	0.000	0.000	20.570
033108-A	0.197	0.089	0.522	1.764	5.435	0.314	1.760	1.516	0.005	0.024	0.001	0.001	0.001	0.000	0.000	0.000	11.629
033108-B	0.641	0.111	0.670	2.188	8.121	0.489	2.283	1.949	0.006	0.032	0.002	0.003	0.004	0.004	0.000	0.008	16.509
033108-C	0.353	0.078	0.457	1.673	4.846	0.276	1.612	1.409	0.005	0.020	0.001	0.001	0.001	0.001	0.000	0.002	10.735
040608-A	0.950	0.265	0.587	1.190	2.530	0.123	0.975	0.594	0.002	0.007	0.001	0.001	0.000	0.000	0.000	0.000	7.225
040608-B	0.893	0.202	0.557	1.152	2.718	0.117	1.469	0.909	0.001	0.019	0.000	0.000	0.001	0.001	0.000	0.001	8.038
040608-C	0.632	0.109	0.417	0.822	1.830	0.073	0.926	0.598	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	5.420
041208-A	0.471	0.064	0.379	1.819	4.179	0.139	1.562	0.927	0.003	0.028	0.002	0.002	0.002	0.000	0.000	0.000	9.577
041208-B	0.487	0.046	0.527	1.835	5.521	0.214	2.061	1.136	0.005	0.042	0.001	0.001	0.000	0.000	0.000	0.000	11.876
041208-C	0.300	0.030	0.330	0.958	2.677	0.103	1.163	0.632	0.002	0.026	0.001	0.001	0.000	0.000	0.000	0.000	6.222
041808-A	1.825	0.170	0.804	14.723	27.630	1.544	13.954	8.980	0.012	0.099	0.006	0.004	0.003	0.003	0.000	0.004	69.761
041808-B	1.300	0.132	0.584	13.627	26.655	1.554	4.082	3.104	0.009	0.077	0.007	0.004	0.000	0.005	0.000	0.010	51.152
041808-C	1.526	0.406	1.704	7.690	16.651	0.983	7.557	4.726	0.008	0.066	0.002	0.001	0.000	0.000	0.000	0.000	41.320
042408-A	1.732	0.436	1.789	5.474	10.812	0.747	4.452	2.684	0.001	0.016	0.002	0.001	0.000	0.000	0.000	0.000	28.147
042408-B	1.617	0.322	1.666	7.195	15.777	1.021	3.822	2.008	0.002	0.012	0.002	0.002	0.002	0.002	0.000	0.003	33.454
042408-C	1.792	0.326	1.979	3.829	7.781	0.379	3.565	1.745	0.001	0.011	0.001	0.001	0.001	0.000	0.000	0.000	21.412
043008-A	3.863	1.016	1.725	3.236	5.795	0.419	1.728	1.346	0.009	0.020	0.014	0.009	0.012	0.015	0.004	0.019	19.232
043008-B	2.547	0.827	1.507	2.800	5.140	0.305	1.557	1.110	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	15.797
043008-C	2.474	0.601	1.190	1.864	3.138	0.196	1.119	0.714	0.001	0.003	0.001	0.002	0.002	0.004	0.006	0.002	11.318
050608-A	1.705	0.541	1.476	8.909	17.929	1.668	3.362	2.445	0.007	0.024	0.008	0.006	0.007	0.011	0.032	0.001	38.132
050608-B	1.520	0.362	1.814	6.719	16.402	1.239	3.050	1.819	0.001	0.009	0.001	0.000	0.000	0.000	0.000	0.000	32.936
050608-C	1.297	0.305	1.566	6.318	20.241	1.275	1.999	1.254	0.001	0.011	0.001	0.001	0.000	0.000	0.000	0.000	34.270
051208-A	0.871	0.436	0.574	2.200	4.690	0.347	1.146	0.932	0.002	0.004	0.001	0.001	0.000	0.001	0.000	0.000	11.204
051208-B	0.529	0.214	0.461	1.143	2.650	0.176	0.682	0.498	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	6.358
051208-C	0.400	0.168	0.352	0.933	2.184	0.143	0.663	0.504	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	5.350
051808-A	0.982	0.457	0.959	3.956	8.687	0.370	2.436	1.463	0.003	0.027	0.002	0.002	0.003	0.004	0.002	0.005	19.357
051808-B	0.704	0.181	0.799	2.569	7.713	0.180	2.083	0.941	0.001	0.015	0.001	0.001	0.001	0.001	0.000	0.002	15.193

051808-C	0.305	0.071	0.303	1.175	2.846	0.092	0.922	0.488	0.001	0.010	0.001	0.000	0.001	0.001	0.000	0.001	6.215
052408-A	0.889	0.120	1.216	2.488	7.442	0.265	2.016	1.115	0.001	0.006	0.001	0.000	0.001	0.000	0.000	0.001	15.562
052408-B	0.911	0.111	1.471	3.313	11.277	0.288	2.623	1.169	0.001	0.004	0.000	0.000	0.001	0.000	0.000	0.001	21.170
052408-C	0.924	0.099	1.320	3.254	8.260	0.252	1.981	0.980	0.001	0.007	0.001	0.000	0.000	0.000	0.000	0.000	17.078
053008-A	0.548	0.062	1.051	2.748	16.784	0.300	6.780	2.580	0.002	0.094	0.001	0.001	0.001	0.001	0.000	0.001	30.953
053008-B	1.309	0.329	1.063	3.499	15.182	1.152	3.447	1.607	0.002	0.041	0.001	0.001	0.001	0.001	0.001	0.001	27.634
053008-C	0.446	0.045	0.830	1.981	15.252	0.227	5.986	2.313	0.002	0.047	0.001	0.000	0.001	0.000	0.000	0.000	27.132
060508-A	0.655	0.086	0.878	2.251	9.897	0.193	2.774	1.442	0.001	0.013	0.002	0.001	0.001	0.002	0.000	0.003	18.200
060508-B	0.583	0.080	0.814	2.000	8.211	1.351	2.420	1.171	0.001	0.007	0.000	0.000	0.000	0.000	0.000	0.000	16.639
060508-C	0.639	0.088	0.918	1.716	8.743	0.135	2.449	1.234	0.001	0.011	0.001	0.001	0.000	0.000	0.000	0.000	15.936
061108-A	0.583	0.116	0.685	6.550	31.680	2.041	2.807	1.690	0.002	0.017	0.002	0.001	0.001	0.001	0.000	0.002	46.178
061108-B	0.490	0.094	1.045	5.312	34.360	1.222	3.889	1.966	0.001	0.010	0.001	0.001	0.000	0.000	0.000	0.000	48.392
061108-C	0.429	0.087	0.822	4.017	18.449	0.759	4.980	2.412	0.002	0.013	0.001	0.001	0.000	0.001	0.000	0.001	31.974
061708-A	0.890	0.271	1.196	2.629	11.332	0.557	2.805	1.743	0.002	0.011	0.001	0.001	0.001	0.002	0.001	0.005	21.448
061708-B	0.232	0.147	1.070	2.018	12.270	0.445	2.958	1.435	0.001	0.004	0.001	0.000	0.000	0.001	0.000	0.001	20.583
061708-C	0.606	0.156	1.029	2.165	11.205	0.385	2.871	1.286	0.001	0.004	0.001	0.001	0.000	0.001	0.000	0.001	19.712
062308-A	1.083	0.102	2.148	3.980	19.385	0.490	7.119	2.961	0.009	0.108	0.002	0.002	0.001	0.002	0.001	0.004	37.400
062308-B	0.567	0.144	1.099	2.267	12.739	0.827	3.233	1.679	0.005	0.062	0.003	0.002	0.001	0.002	0.001	0.004	22.634
062308-C	0.542	0.201	0.953	2.820	16.608	0.526	5.668	2.811	0.006	0.069	0.001	0.001	0.000	0.000	0.000	0.001	30.207
062908-A																	
062908-B	0.285	0.062	0.658	3.140	15.713	0.383	4.801	2.225	0.003	0.031	0.002	0.002	0.001	0.002	0.001	0.003	27.311
062908-C	0.289	0.066	0.565	3.311	17.272	0.715	4.280	2.155	0.003	0.039	0.002	0.001	0.001	0.001	0.001	0.002	28.703
070508-A	0.737	0.069	0.808	2.648	16.156	1.372	2.883	1.405	0.001	0.019	0.002	0.003	0.002	0.004	0.001	0.013	26.125
070508-B	0.292	0.049	0.460	2.310	14.709	0.295	1.909	1.022	0.002	0.016	0.001	0.002	0.002	0.002	0.001	0.003	21.076
070508-C	0.312	0.052	0.550	4.371	29.780	1.342	1.082	0.545	0.001	0.013	0.001	0.000	0.000	0.000	0.000	0.001	38.049
071108-A	0.433	0.049	0.729	2.213	13.180	0.271	4.124	1.592	0.002	0.024	0.002	0.001	0.001	0.001	0.001	0.002	22.622
071108-B	0.243	0.040	0.694	1.847	9.753	0.392	2.488	1.067	0.001	0.021	0.001	0.001	0.000	0.001	0.000	0.001	16.549
071108-C	0.352	0.045	0.552	3.394	22.881	0.739	0.491	0.206	0.001	0.009	0.001	0.001	0.000	0.000	0.000	0.005	28.676
072308-A	0.451	0.102	0.640	2.322	16.152	0.365	5.710	0.246	0.002	0.034	0.000	0.000	0.000	0.000	0.000	0.001	26.027
072308-B	0.394	0.091	0.592	1.829	12.929	0.335	5.130	2.209	0.002	0.031	0.001	0.000	0.000	0.000	0.000	0.001	23.545
072308-C	0.348	0.087	0.515	1.682	12.279	0.296	3.541	1.588	0.002	0.031	0.001	0.001	0.000	0.000	0.000	0.002	20.373
080408-A	0.738	0.172	0.892	3.315	14.714	0.724	3.061	1.848	0.001	0.006	0.001	0.000	0.000	0.000	0.000	0.000	25.473
080408-B	0.489	0.095	0.969	4.113	18.498	1.134	1.502	0.813	0.001	0.007	0.000	0.000	0.000	0.000	0.000	0.001	27.624
080408-C	0.476	0.103	0.912	2.765	16.020	0.914	3.122	1.411	0.001	0.005	0.000	0.000	0.000	0.000	0.000	0.000	25.728
081008-A	0.336	0.046	0.765	1.778	12.888	0.383	3.794	1.517	0.001	0.014	0.000	0.000	0.000	0.000	0.000	0.003	21.527
081008-B	0.280	0.040	0.487	1.444	7.709	0.153	2.291	0.893	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.001	13.309
081008-C	0.253	0.044	0.447	1.353	6.996	0.163	1.736	0.686	0.000	0.009	0.001	0.000	0.000	0.000	0.000	0.001	11.692
081608-A	0.979	0.152	1.469	2.639	9.424	0.361	2.399	1.195	0.001	0.007	0.001	0.000	0.000	0.000	0.000	0.001	18.629
081608-B	0.388	0.077	1.006	2.605	12.279	0.510	2.591	1.136	0.002	0.013	0.001	0.000	0.000	0.000	0.000	0.001	20.608
081608-C	0.433	0.081	1.241	2.920	12.492	0.588	2.346	0.940	0.001	0.007	0.000	0.000	0.000	0.000	0.000	0.001	21.051

082208-A	0.602	0.083	0.872	2.212	14.027	0.415	4.340	1.637	0.001	0.010	0.000	0.000	0.000	0.000	0.000	0.001	24.200
082208-B	0.434	0.093	0.993	4.511	13.916	0.458	2.124	0.938	0.002	0.017	0.001	0.001	0.001	0.001	0.000	0.002	23.491
082208-C	0.422	0.072	0.714	3.039	12.930	0.569	2.431	1.026	0.002	0.012	0.001	0.000	0.000	0.000	0.000	0.001	21.221
082808-A	1.420	0.263	2.807	3.565	13.486	0.838	3.820	1.963	0.002	0.010	0.001	0.000	0.000	0.000	0.000	0.002	28.178
082808-B	0.423	0.109	0.770	2.153	9.867	0.281	1.079	0.777	0.002	0.019	0.001	0.001	0.001	0.001	0.000	0.002	15.486
082808-C	0.495	0.126	0.758	1.779	9.321	0.407	1.750	0.934	0.002	0.018	0.001	0.000	0.001	0.000	0.000	0.002	15.594
090308-A	1.344	0.174	1.468	2.460	16.997	0.505	4.821	1.864	0.002	0.027	0.000	0.000	0.000	0.000	0.000	0.001	29.665
090308-B	0.753	0.083	0.880	1.813	8.881	0.333	2.662	1.130	0.003	0.031	0.001	0.001	0.001	0.001	0.000	0.001	16.572
090308-C	0.920	0.103	0.998	2.132	10.622	0.331	2.820	1.131	0.002	0.017	0.000	0.000	0.000	0.000	0.000	0.000	19.078
090908-A	0.575	0.230	0.525	1.237	8.450	0.372	2.742	1.304	0.001	0.008	0.000	0.000	0.000	0.000	0.000	0.001	15.447
090908-B	0.459	0.125	0.659	1.135	7.517	0.311	2.177	1.024	0.001	0.007	0.000	0.000	0.000	0.000	0.000	0.001	13.418
090908-C	0.443	0.137	0.724	1.275	7.698	0.312	1.837	0.864	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	13.297
091508-A	0.706	0.211	1.157	1.480	6.234	0.283	1.490	0.950	0.001	0.003	0.000	0.000	0.000	0.001	0.001	0.006	12.522
091508-B	0.724	0.201	0.895	1.503	7.738	0.335	1.687	0.778	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.001	13.868
091508-C	0.601	0.117	1.024	1.543	9.772	0.409	2.108	0.925	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	16.504
092108-A	0.579	0.132	0.762	3.638	13.876	0.717	1.848	0.881	0.004	0.021	0.008	0.011	0.011	0.057	0.085	0.038	22.668
092108-B	0.322	0.083	0.421	1.897	8.101	0.247	1.911	0.753	0.001	0.011	0.001	0.001	0.000	0.005	0.011	0.003	13.768
092108-C	0.024	0.060	0.388	1.631	6.690	0.182	1.656	0.592	0.001	0.008	0.000	0.000	0.000	0.001	0.002	0.006	11.242

IV-7. PAHs concentration (ng/m^3) in the QFF, blank and surrogate corrected concentration at three sampling sites for an intensive sampling.

File No.	NAP	ACEN	ACE	FLN	PHE	AN	FL	PY	BaA	CHR	BbFA	BkFA	BaP	IP	BghiP	DBahA	Total PAH
D-012908-A-P	0.131	0.053	0.033	0.100	0.939	0.131	1.499	1.742	0.432	0.808	0.210	0.419	0.376	0.862	0.193	1.389	9.316
D-012908-B-P	0.176	0.065	0.036	0.085	0.693	0.106	1.068	1.225	0.307	0.580	0.385	0.372	0.341	0.825	0.196	1.312	7.772
D-012908-C-P	0.110	0.036	0.038	0.056	0.415	0.064	1.122	1.251	0.287	0.578	0.228	0.371	0.350	0.746	0.175	1.227	7.055
N-012908-A-P	0.175	0.061	0.050	0.070	0.478	0.074	0.971	1.159	0.384	0.767	0.365	0.497	0.614	1.276	0.374	2.542	9.856
N-012908-B-P	0.128	0.036	0.022	0.036	0.265	0.040	0.643	0.746	0.259	0.519	0.240	0.387	0.481	1.108	0.199	2.008	7.117
N-012908-C-P	0.152	0.043	0.026	0.046	0.324	0.053	0.713	0.831	0.298	0.588	0.202	0.314	0.381	0.831	0.140	1.544	6.487
D-013008-A-P	0.047	0.015	0.019	0.035	0.252	0.030	0.740	0.666	0.088	0.208	0.108	0.110	0.107	0.208	0.061	0.241	2.933
D-013008-B-P	0.069	0.021	0.032	0.049	0.367	0.037	0.904	0.764	0.119	0.289	0.164	0.139	0.166	0.339	0.114	0.366	3.940
D-013008-C-P	0.032	0.011	0.025	0.026	0.187	0.019	0.458	0.380	0.060	0.156	0.085	0.088	0.080	0.144	0.041	0.178	1.969
N-013008-A-P	0.057	0.022	0.041	0.059	0.494	0.053	1.421	1.515	0.209	0.384	0.159	0.218	0.260	0.450	0.116	0.657	6.114
N-013008-B-P	0.036	0.018	0.017	0.026	0.330	0.034	0.922	0.933	0.132	0.231	0.203	0.140	0.173	0.247	0.069	0.323	3.836
N-013008-C-P	0.033	0.015	0.013	0.028	0.322	0.031	0.887	0.888	0.131	0.233	0.109	0.152	0.167	0.257	0.076	0.336	3.678
D-013108-A-P	0.061	0.021	0.025	0.045	0.491	0.048	1.375	1.340	0.155	0.335	0.325	0.164	0.190	0.353	0.102	0.425	5.454
D-013108-B-P	0.068	0.033	0.038	0.066	0.499	0.047	1.249	1.098	0.136	0.316	0.223	1.716	0.189	0.347	0.123	0.419	6.566
D-013108-C-P	0.032	0.014	0.016	0.026	0.305	0.025	0.777	0.687	0.098	0.234	0.164	0.131	0.128	0.256	0.062	0.296	3.251
N-013108-A-P	0.067	0.026	0.043	0.051	0.456	0.061	1.131	1.145	0.272	0.539	0.468	0.365	0.433	0.803	0.205	1.011	7.075
N-013108-B-P	0.043	0.019	0.021	0.034	0.298	0.036	0.696	0.710	0.198	0.363	0.306	0.246	0.270	0.574	0.153	0.728	4.694
N-013108-C-P	0.041	0.018	0.050	0.067	0.370	0.043	0.794	0.815	0.210	0.444	0.345	0.258	0.302	0.726	0.176	0.994	5.655
D-030708-A-P	0.077	0.033	0.024	0.075	0.453	0.056	0.739	0.763	0.166	0.357	0.147	0.259	0.248	0.557	0.119	0.816	4.890
D-030708-B-P	0.089	0.046	0.024	0.052	0.325	0.049	0.548	0.538	0.129	0.288	0.247	0.270	0.311	0.944	0.214	1.375	5.448
D-030708-C-P	0.063	0.025	0.021	0.027	0.190	0.032	0.510	0.490	0.128	0.293	0.156	0.200	0.191	0.501	0.108	0.703	3.638
N-030708-A-P	0.053	0.019	0.013	0.023	0.228	0.023	0.722	0.691	0.071	0.178	0.073	0.111	0.120	0.311	0.056	0.535	3.227
N-030708-B-P	0.064	0.022	0.013	0.020	0.204	0.020	0.591	0.550	0.085	0.186	0.088	0.120	0.127	0.269	0.052	0.450	2.862
N-030708-C-P	0.041	0.016	0.010	0.020	0.152	0.016	0.380	0.348	0.053	0.128	0.061	0.080	0.088	0.201	0.037	0.334	1.964
D-030808-A-P	0.226	0.033	0.031	0.032	0.131	0.023	0.300	0.252	0.088	0.190	0.072	0.129	0.110	0.313	0.062	0.545	2.537
D-030808-B-P	0.104	0.026	0.022	0.022	0.109	0.022	0.310	0.260	0.066	0.173	0.104	0.108	0.087	0.210	0.045	0.426	2.092
D-030808-C-P	0.254	0.065	0.056	0.053	0.269	0.053	0.624	0.541	0.184	0.428	0.372	0.329	0.273	0.970	0.182	1.623	6.273
N-030808-A-P	0.021	0.007	0.015	0.026	0.164	0.020	0.324	0.216	0.071	0.164	0.182	0.089	0.098	0.208	0.065	0.213	1.882
N-030808-B-P	0.032	0.006	0.017	0.020	0.125	0.013	0.236	0.154	0.076	0.187	0.096	0.131	0.110	0.186	0.063	0.190	1.641
N-030808-C-P	0.020	0.005	0.016	0.014	0.076	0.009	0.225	0.146	0.054	0.110	0.120	0.065	0.064	0.126	0.042	0.116	1.210
D-030908-A-P	0.027	0.006	0.010	0.017	0.139	0.001	0.417	0.324	0.055	0.140	0.072	0.089	0.076	0.193	0.045	0.211	1.821
D-030908-B-P	0.024	0.007	0.028	0.025	0.155	0.010	0.469	0.341	0.046	0.121	0.129	0.067	0.057	0.108	0.031	0.132	1.751
D-030908-C-P	0.035	0.006	0.014	0.023	0.128	0.008	0.282	0.201	0.036	0.098	0.043	0.067	0.046	0.080	0.024	0.087	1.179
N-030908-A-P	0.030	0.011	0.013	0.024	0.233	0.025	0.828	0.830	0.121	0.248	0.210	0.164	0.175	0.314	0.095	0.424	3.745
N-030908-B-P	0.018	0.007	0.010	0.013	0.154	0.013	0.559	0.542	0.073	0.166	0.157	0.088	0.116	0.233	0.060	0.326	2.535

N-030908-C-P	0.019	0.005	0.010	0.016	0.143	0.011	0.495	0.452	0.079	0.164	0.076	0.120	0.113	0.197	0.055	0.271	2.227
D-071708-A-P	1.202	0.029	0.068	0.066	0.453	0.078	0.846	0.509	0.076	0.246	0.152	0.088	0.090	0.151	0.038	0.226	4.317
D-071708-B-P	0.368	0.028	0.065	0.060	0.341	0.073	0.620	0.405	0.066	0.228	0.078	0.079	0.086	0.157	0.044	0.227	2.924
D-071708-C-P	0.820	0.026	0.070	0.056	0.369	0.065	0.687	0.440	0.066	0.206	0.088	0.069	0.078	0.132	0.038	0.198	3.407
N-071708-A-P	1.190	0.038	0.098	0.158	1.187	0.099	2.403	1.451	0.065	0.285	0.122	0.058	0.061	0.063	0.016	0.213	7.507
N-071708-B-P	0.056	0.023	0.058	0.077	0.541	0.060	1.174	0.684	0.038	0.181	0.052	0.043	0.042	0.050	0.013	0.134	3.227
N-017008-C-P	0.917	0.020	0.074	0.068	0.544	0.059	1.075	0.619	0.046	0.180	0.054	0.042	0.071	0.063	0.016	0.168	4.015
D-071808-A-P	0.282	0.031	0.071	0.071	0.425	0.061	0.611	0.448	0.071	0.249	0.079	0.081	0.083	0.118	0.031	0.186	2.897
D-071808-B-P	0.386	0.026	0.113	0.090	0.445	0.064	0.615	0.494	0.100	0.249	0.071	0.087	0.087	0.138	0.038	0.182	3.186
D-071808-C-P	0.125	0.012	0.053	0.035	0.179	0.035	0.340	0.221	0.031	0.117	0.041	0.040	0.033	0.062	0.017	0.087	1.426
N-071808-A-P	0.843	0.020	0.075	0.060	0.286	0.061	0.526	0.258	0.028	0.142	0.075	0.062	0.052	0.109	0.024	0.155	2.777
N-071808-B-P	0.346	0.012	0.065	0.052	0.238	0.053	0.450	0.227	0.019	0.111	0.041	0.036	0.031	0.072	0.015	0.102	1.870
N-071808-C-P	0.245	0.011	0.055	0.044	0.224	0.048	0.416	0.213	0.018	0.100	0.066	0.034	0.031	0.053	0.015	0.091	1.664
D-071908-A-P	0.073	0.015	0.049	0.029	0.126	0.034	0.212	0.147	0.031	0.092	0.065	0.046	0.045	0.094	0.026	0.129	1.211
D-071908-B-P	0.048	0.009	0.042	0.028	0.124	0.030	0.227	0.159	0.024	0.073	0.051	0.028	0.033	0.058	0.014	0.074	1.025
D-071908-C-P	0.037	0.007	0.035	0.026	0.095	0.024	0.168	0.120	0.019	0.058	0.044	0.026	0.026	0.052	0.013	0.065	0.814
N-071908-A-P	0.065	0.010	0.053	0.041	0.178	0.050	0.324	0.155	0.017	0.103	0.061	0.040	0.024	0.079	0.018	0.109	1.326
N-071908-B-P	0.076	0.009	0.048	0.039	0.171	0.044	0.321	0.166	0.015	0.091	0.049	0.030	0.022	0.062	0.014	0.084	1.238
N-071908-C-P	0.065	0.008	0.048	0.030	0.170	0.036	0.323	0.166	0.013	0.082	0.028	0.036	0.017	0.061	0.014	0.084	1.181
D-072208-A-P	0.120	0.031	0.085	0.065	0.344	0.062	0.503	0.392	0.084	0.242	0.172	0.119	0.109	0.269	0.059	0.451	3.107
D-072208-B-P	0.081	0.026	0.044	0.042	0.222	0.046	0.401	0.312	0.062	0.175	0.084	0.095	0.092	0.225	0.049	0.363	2.318
D-072208-C-P	0.079	0.021	0.041	0.039	0.217	0.039	0.402	0.309	0.060	0.170	0.133	0.093	0.092	0.210	0.046	0.354	2.305
N-072208-A-P	0.102	0.026	0.062	0.043	0.328	0.055	0.711	0.463	0.047	0.184	0.098	0.074	0.073	0.169	0.042	0.299	2.777
N-072208-B-P	0.089	0.016	0.057	0.043	0.266	0.049	0.605	0.380	0.040	0.158	0.078	0.065	0.056	0.137	0.031	0.234	2.304
N-072208-C-P	0.087	0.017	0.050	0.037	0.269	0.050	0.559	0.354	0.040	0.145	0.088	0.059	0.064	0.149	0.034	0.243	2.245
D-072908-A-P	0.155	0.025	0.059	0.054	0.357	0.043	0.676	0.532	0.061	0.212	0.077	0.059	0.061	0.111	0.028	0.273	2.784
D-072908-B-P	0.121	0.014	0.045	0.038	0.264	0.035	0.480	0.308	0.040	0.120	0.070	0.035	0.043	0.077	0.020	0.175	1.886
D-072908-C-P	0.084	0.016	0.041	0.040	0.267	0.033	0.469	0.302	0.037	0.121	0.032	0.050	0.039	0.083	0.016	0.189	1.820
N-072908-A-P	0.427	0.040	0.130	0.202	1.439	0.116	2.413	1.519	0.109	0.413	0.118	0.099	0.079	0.077	0.026	0.190	7.397
N-072908-B-P	0.235	0.028	0.094	0.136	0.957	0.092	1.724	1.013	0.078	0.302	0.105	0.079	0.058	0.072	0.019	0.160	5.153
N-072908-C-P	0.295	0.027	0.097	0.129	0.916	0.093	1.691	0.975	0.070	0.254	0.072	0.050	0.043	0.048	0.014	0.120	4.894
D-090408-A-P	0.104	0.018	0.034	0.065	0.355	0.063	0.653	0.403	0.066	0.211	0.071	0.092	0.086	0.163	0.047	0.263	2.695
D-090408-B-P	0.076	0.017	0.036	0.043	0.226	0.040	0.428	0.286	0.053	0.156	0.044	0.076	0.063	0.124	0.031	0.188	1.885
D-090408-C-P	0.079	0.016	0.032	0.046	0.239	0.040	0.448	0.296	0.057	0.151	0.063	0.065	0.066	0.126	0.033	0.205	1.962
N-090408-A-P	0.092	0.012	0.039	0.050	0.334	0.027	0.611	0.319	0.023	0.103	0.030	0.028	0.024	0.055	0.014	0.091	1.854
N-090408-B-P	0.058	0.009	0.031	0.033	0.170	0.024	0.324	0.183	0.018	0.082	0.041	0.024	0.020	0.051	0.013	0.072	1.153
N-090408-C-P	0.091	0.011	0.043	0.052	0.262	0.027	0.447	0.250	0.014	0.080	0.021	0.027	0.018	0.043	0.010	0.070	1.465

IV-8. PAHs concentration (ng/m^3) in the PUF, blank and surrogate corrected concentration at three sampling sites for an intensive sampling.

File No.	NAP	ACEN	ACE	FLN	PHE	AN	FL	PY	BaA	CHR	BbFA	BkFA	BaP	IP	BghiP	DBahA	Total PAH
D-012908-A-G	7.228	4.103	2.817	5.525	10.094	0.949	3.704	3.398	0.005	0.019	0.004	0.004	0.006	0.015	0.024	0.014	37.910
D-012908-B-G	2.270	4.375	3.519	5.634	10.220	1.165	4.275	3.830	0.007	0.021	0.009	0.012	0.010	0.000	0.000	0.000	35.345
D-012908-C-G	2.000	2.860	2.387	5.267	9.908	0.902	3.732	3.852	0.011	0.054	0.000	0.000	0.000	0.000	0.000	0.000	30.973
N-012908-A-G	2.793	2.622	2.486	5.634	12.006	1.176	2.636	2.875	0.006	0.015	0.003	0.003	0.004	0.006	0.000	0.010	32.273
N-012908-B-G	2.525	3.015	2.488	5.150	7.919	0.761	2.035	2.108	0.003	0.008	0.000	0.000	0.000	0.000	0.000	0.000	26.012
N-012908-C-G	8.176	2.839	1.974	3.565	5.792	0.549	1.552	1.422	0.001	0.005	0.000	0.001	0.001	0.001	0.000	0.002	25.880
D-013008-A-G	2.587	0.393	0.923	1.155	2.520	0.085	0.567	0.396	0.002	0.004	0.001	0.000	0.001	0.001	0.000	0.001	8.635
D-013008-B-G	4.224	0.468	1.282	1.990	3.738	0.161	0.580	0.410	0.004	0.009	0.003	0.004	0.004	0.000	0.000	0.000	12.877
D-013008-C-G	2.071	0.253	0.737	1.224	2.206	0.095	0.442	0.316	0.002	0.007	0.002	0.002	0.003	0.002	0.000	0.006	7.368
N-013008-A-G	4.249	0.891	0.967	1.522	2.731	0.171	0.369	0.245	0.004	0.009	0.004	0.005	0.007	0.013	0.026	0.010	11.222
N-013008-B-G	4.215	0.689	0.908	1.111	1.663	0.093	0.165	0.085	0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	8.932
N-013008-C-G	4.587	0.653	0.966	1.111	1.770	0.078	0.254	0.141	0.003	0.014	0.000	0.000	0.000	0.000	0.000	0.000	9.577
D-013108-A-G	5.924	1.178	1.013	1.955	3.427	0.155	0.263	0.160	0.002	0.003	0.001	0.001	0.001	0.001	0.000	0.002	14.086
D-013108-B-G	4.265	0.957	1.510	2.268	4.172	0.157	0.261	0.176	0.002	0.005	0.003	0.004	0.003	0.004	0.004	0.006	13.797
D-013108-C-G	3.542	0.584	0.836	1.471	2.365	0.081	0.199	0.120	0.003	0.015	0.003	0.001	0.003	0.000	0.000	0.000	9.225
N-013108-A-G	3.715	0.862	1.745	2.397	4.090	0.273	0.990	0.819	0.001	0.004	0.002	0.002	0.002	0.004	0.000	0.004	14.910
N-013108-B-G	2.310	1.326	1.050	2.146	3.406	0.215	0.893	0.773	0.011	0.021							12.151
N-013108-C-G	2.085	1.131	0.963	1.668	3.093	0.183	1.090	1.039	0.019	0.115	0.000	0.000		0.000	0.000	0.000	11.387
D-030708-A-G	3.083	1.840	1.345	2.630	5.382	0.308	2.538	2.156	0.020	0.038	0.023	0.018	0.021	0.030	0.008	0.043	19.483
D-030708-B-G	3.600	2.199	1.753	2.998	5.923	0.335	2.983	2.496	0.003	0.007	0.000	0.000	0.000	0.000	0.000	0.000	22.297
D-030708-C-G	2.375	1.260	1.154	1.743	4.035	0.196	1.719	1.436	0.003	0.007	0.001	0.001	0.001	0.002	0.001	0.003	13.937
N-030708-A-G	2.169	0.814	0.927	1.925	4.566	0.229	1.309	1.086	0.001	0.005	0.001	0.000	0.001	0.001	0.000	0.001	13.034
N-030708-B-G	3.023	1.129	1.607	3.040	6.602	0.298	1.690	1.401	0.003	0.011	0.004	0.005	0.006				18.818
N-030708-C-G	1.895	0.686	1.069	2.181	4.637	0.205	1.553	1.230	0.001	0.005	0.000	0.001	0.000	0.001	0.000	0.001	13.467
D-030808-A-G	1.850	0.323	0.667	2.112	6.225	0.429	3.581	2.795	0.004	0.018	0.001	0.002	0.004	0.000	0.000	0.000	18.012
D-030808-B-G	2.145	0.464	0.902	3.486	7.018	0.573	3.087	2.816	0.022	0.058	0.013						20.583
D-030808-C-G	1.390	0.408	0.706	1.987	4.281	0.365	2.373	2.035	0.006	0.031	0.003	0.003	0.004	0.008	0.002	0.007	13.612
N-030808-A-G	1.452	0.125	0.753	1.147	1.822	0.036	0.515	0.217	0.012	0.035	0.016	0.014	0.013	0.020	0.007	0.019	6.203
N-030808-B-G	1.739	0.087	0.999	1.179	1.953	0.030	0.468	0.139	0.004	0.009	0.006	0.005	0.005	0.005	0.002	0.005	6.635
N-030808-C-G	1.238	0.048	0.611	0.725	1.198	0.014	0.310	0.092	0.002	0.002	0.001	0.000	0.001	0.001	0.000	0.001	4.244
D-030908-A-G	1.392	0.142	0.536	0.763	1.627	0.027	0.311	0.111	0.001	0.002	0.001	0.001	0.001	0.000	0.000	0.000	4.913
D-030908-B-G	1.680	0.101	1.017	1.209	2.379	0.049	0.259	0.079	0.002	0.005	0.003	0.002	0.002	0.002	0.001	0.003	6.792
D-030908-C-G	0.991	0.084	0.512	0.642	0.968	0.013	0.191	0.045	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	3.449
N-030908-A-G	3.130	0.525	0.650	1.014	1.833	0.065	0.170	0.063	0.002	0.001	0.001	0.000	0.001	0.001	0.000	0.001	7.457

N-030908-B-G	2.178	0.305	0.586	0.787	1.415	0.040	0.158	0.060	0.002	0.003	0.002	0.002	0.003	0.003	0.001	0.004	5.550
N-030908-C-G	2.459	0.240	0.736	1.108	2.037	0.146	0.138	0.038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.901
D-071708-A-G	0.784	0.056	1.430	4.544	18.792	0.399	4.550	1.673	0.002	0.026	0.003	0.001	0.001	0.002	0.000	0.005	32.268
D-071708-B-G	0.614	0.037	1.007	3.150	12.662	0.255	3.957	1.503	0.006	0.034	0.005	0.005	0.005			0.005	23.245
D-071708-C-G	0.683	0.038	1.131	3.277	13.345	0.292	2.982	1.152	0.001	0.023	0.001	0.001	0.000	0.000	0.000	0.001	22.927
N-071708-A-G	1.660	0.306	1.569	6.406	24.819	0.925	4.144	1.924	0.001	0.012	0.001	0.001	0.001	0.001	0.000	0.005	41.775
N-071708-B-G	1.180	0.168	1.527	5.426	20.704	1.095	3.272	1.611	0.001	0.011	0.001	0.000	0.000	0.000	0.000	0.002	35.000
N-017008-C-G	10.574	0.111	1.172	5.964	25.684	1.209	1.731	0.877	0.001	0.014	0.001	0.000	0.000	0.001	0.001	0.002	47.342
D-071808-A-G	0.340	0.088	0.951	1.422	11.848	0.475	4.120	1.969	0.001	0.017	0.002	0.001	0.002	0.001	0.000	0.004	21.241
D-071808-B-G	0.470	0.065	0.940	1.658	10.686	0.493	2.848	1.068	0.001	0.019	0.002	0.001	0.005	0.001	0.001	0.002	18.261
D-071808-C-G	0.260	0.033	0.731	1.332	12.589	0.434	4.133	1.507	0.002	0.025	0.001	0.001	0.000	0.000	0.000	0.001	21.048
N-071808-A-G	1.143	0.065	1.561	4.296	17.865	0.230	58.997	1.936	0.001	0.030	0.001	0.001	0.001	0.001	0.000	0.003	86.131
N-071808-B-G	0.904	0.070	1.123	4.539	15.863	0.144	4.460	1.475	0.001	0.022	0.000	0.000	0.001	0.001	0.000	0.002	28.605
N-071808-C-G	0.806	0.061	1.010	4.394	16.590	0.157	3.765	1.268	0.000	0.021	0.001	0.001	0.001	0.001	0.000	0.010	28.086
D-071908-A-G	0.582	0.083	0.914	1.958	12.256	0.310	4.865	1.696	0.002	0.066	0.001	0.001	0.001	0.001	0.000	0.002	22.738
D-071908-B-G	0.470	0.056	1.107	2.147	10.463	0.304	3.547	1.241	0.001	0.038	0.002	0.001	0.001	0.001	0.000	0.003	19.382
D-071908-C-G	0.429	0.049	1.112	2.394	11.834	0.336	3.777	1.357	0.001	0.043	0.001	0.001	0.000	0.001	0.000	0.002	21.337
N-071908-A-G	0.997	0.084	1.922	6.875	33.533	0.522	7.191	3.009	0.001	0.052	0.001	0.001	0.001	0.001	0.000	0.002	54.190
N-071908-B-G	0.911	0.120	1.436	6.241	26.315	0.288	6.643	2.884	0.002	0.054	0.001	0.001	0.001	0.001	0.000	0.000	44.900
N-071908-C-G	0.808	0.096	1.401	4.823	22.676	0.262	5.645	2.337	0.002	0.043	0.001	0.001	0.000	0.001	0.000	0.003	38.099
D-072208-A-G	1.147	0.082	1.487	3.944	22.416	0.608	5.694	2.335	0.005	0.073	0.003	0.002	0.002	0.004	0.000	0.010	37.812
D-072208-B-G	0.852	0.083	1.227	3.068	17.534	0.484	4.437	1.960	0.004	0.075	0.001	0.001	0.001	0.001	0.000	0.004	29.733
D-072208-C-G	0.660	0.082	1.072	2.563	16.821	0.403	4.594	1.900	0.006	0.069	0.001	0.001	0.001	0.000	0.000	0.001	28.173
N-072208-A-G	2.537	0.346	2.689	5.993	24.412	0.574	5.696	2.770	0.002	0.034	0.001	0.000	0.000	0.000	0.000	0.004	45.059
N-072208-B-G	1.556	0.256	2.112	5.213	21.814	0.475	5.075	2.488	0.004	0.032	0.001	0.002	0.001	0.003	0.001	0.007	39.040
N-072208-C-G	1.596	0.264	2.402	5.281	22.460	0.449	4.841	2.296	0.003	0.031	0.001	0.001	0.001	0.001	0.003	0.003	39.633
D-072908-A-G	0.406	0.096	0.766	1.321	10.631	0.425	3.168	1.891	0.001	0.018	0.002	0.001	0.001	0.001	0.000	0.003	18.730
D-072908-B-G	0.045	0.064	0.859	1.508	12.281	0.367	2.884	1.181	0.001	0.009	0.001	0.000	0.000	0.000	0.000	0.001	19.203
D-072908-C-G	0.483	0.053	0.819	1.351	15.483	0.611	3.828	1.561	0.001	0.015	0.001	0.001	0.001	0.001	0.000	0.002	24.211
N-072908-A-G	1.995	0.355	2.939	7.487	38.172	2.087	6.308	3.352	0.002	0.015	0.001	0.000	0.000	0.000	0.000	0.002	62.714
N-072908-B-G	1.496	0.235	2.444	6.862	32.449	1.843	4.530	2.461	0.002	0.016	0.000	0.000	0.000	0.000	0.000	0.001	52.339
N-072908-C-G	1.405	0.252	2.697	7.225	29.913	1.651	3.303	1.583	0.001	0.009	0.000	0.000	0.000	0.000	0.000	0.005	48.044
D-090408-A-G	1.067	0.093	2.507	3.967	20.757	0.439	7.700	2.830	0.001	0.044	0.001	0.000	0.000	0.000	0.000	0.000	39.408
D-090408-B-G	0.784	0.051	1.491	2.325	12.569	0.299	5.302	1.986	0.002	0.045	0.001	0.001	0.000	0.001	0.000	0.004	24.862
D-090408-C-G	0.847	0.083	1.575	2.372	12.194	0.299	5.069	1.911	0.002	0.040	0.001	0.000	0.000	0.000	0.000	0.003	24.395
N-090408-A-G	0.600	0.113	1.333	3.988	18.827	0.309	5.138	2.131	0.002	0.036	0.001	0.000	0.000	0.001	0.000	0.001	32.479
N-090408-B-G	0.619	0.079	1.078	3.215	13.111	0.200	3.736	1.517	0.001	0.029	0.001	0.001	0.001	0.001	0.000	0.002	23.592
N-090408-C-G	0.581	0.078	1.233	3.393	14.178	0.247	3.654	1.445	0.001	0.026	0.001	0.000	0.000	0.000	0.000	0.003	24.841