Prepared for: Mirant Potomac River, LLC Potomac Generating Station Alexandria, VA



# Mirant Potomac River, LLC Monthly Model Evaluation Study Report February 2007

ENSR Corporation February 2007 Document No.: 10350-003-106-9

ENSR AECOM

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March 20, 2007

Doug Snyder Assistant Regional Counsel Office of Regional Counsel US EPA-Region 3 1650 Arch Street Philadelphia, PA 19103-2029

Michael Dowd Air Enforcement Manager Virginia Department of Environmental Quality 629 East Main Street Richmond, VA 23240-0009

Dear Messrs. Snyder and Dowd:

As you are aware, Mirant Potomac River, L.L.C. (Mirant) is operating per the terms and conditions of the Administrative Compliance Order (ACO) dated June 1, 2006. Under the terms of ACO, Mirant is to deliver a monthly report to include: (1) the modeled input files and results of the daily Predictive Modeling for the preceding month, including the hourly average heat input in the MMBtu for each unit and the exit velocity (or exhaust volume) for each unit; (2) verification that the planned Operating Parameters utilized for Predictive Modeling in the preceding month were not exceeded, or if exceeded, documentation describing that exceedance: (3) the inputs and results of the "follow-up" modeling for the preceding month (or portion thereof during which all Monitors were not in place), including the hourly average heat input in MMBtu for each unit and the exit velocity (or exhaust volume) for each unit and the exit velocity (or exhaust volume) for each unit and the exit velocity (or exhaust volume) for each unit and the exit velocity (or exhaust volume) for each unit and the operating the hourly average heat input in MMBtu for each unit and the exit velocity (or exhaust volume) for each unit; and (4) after installation of the Monitors, the data generated by the Monitors.

As a result, please see the attached submission, "Mirant Potomac River, LLC Monthly Model Evaluation Study Report" for the month of February 2007.

The modeling data enclosed includes:

- Modeled Input Files and Results of Predictive Modeling: 3-hour and 24-hour AERMOD predictive modeling results using day-ahead weather forecast data for February 2007;
- Plant Operating Parameters Summary: 3-hour and 24 hour Rate Compliance Summary.
- Plant Operating Data.
- Follow-up Modeling Results: 3-hour and 24-hour AERMOD follow-up modeling results performed by the third-party consultant, ENSR, using observed weather conditions for February 2007; and 3-hour and 24-hour ambient actual monitor data for SO2 averages from the continuous monitoring sites as prescribed in the ACO, for the period of February 2007.
- Monthly Summary Data Reports: Marina Towers Central, Marina Towers South, Southeast, Southwest, North, and Northeast.



• In addition, we have provided a satellite view of the ambient air quality and meteorological network.

Should you have any questions regarding these modeling results, please contact me at 301-669-8168 or by email: david.cramer@mirant.com.

Regards,

David J. Com

David Cramer Manager – Air Compliance & Permitting

Copies: Bob Driscoll, CEO Mid-Atlantic L.L.C Judith Katz, US EPA Shawn Konary, Director Environmental, Safety and Health, Mirant File Prepared for: Mirant Potomac River, LLC Potomac Generating Station Alexandria, VA

# Mirant Potomac River, LLC Monthly Model Evaluation Study Report February 2007

**ENSR** 

**AECOM** 

Frank R. Tringale

Prepared By

Dave Sh

**Reviewed By** 

ENSR Corporation February 2007 Document No.: 10350-003-106-9

#### **DOCUMENT CERTIFICATION**

Facility Name: <u>Potomac River Generating Station</u>

Identification: ORIS # 3788; Virginia Registration# 70228

Facility Location: <u>1400 North Royal St., Alexandria VA 22314</u>

Type of Submittal Attached: <u>February 2007 Monthly ACO Report</u>

This February 2007 Monthly Report is being submitted to demonstrate compliance with the Administrative Compliance Order between Mirant Potomac River, LLC and the U.S. EPA, dated June 2, 2006.

Certification: Except as provided below, I certify that the information contained in or accompanying this report is true, accurate, and complete. As to those portions of this report for which I cannot personally verify their accuracy, I certify under the penalty of law that this report and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print): <u>Robert E. Driscoll</u>

Title: <u>President & Chief Executive Officer</u>, Mirant Potomac River, LLC

Signature: Joluthuil Date: Mar 20, 2007

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## 1.0 Introduction

Under an Administrative Compliance Order (ACO) signed on June 1, 2006, between Mirant Potomac River, LLC, (Mirant) and the United States Environmental Protection Agency (EPA), Mirant is submitting a monthly modeling, monitoring, and operating data report for February 2007.

## 2.0 Daily Predictive Modeling

On June 17, 2006, Mirant began performing daily forecast modeling to calculate maximum sulfur dioxide (SO<sub>2</sub>) impacts from the Potomac River Power Plant. Mirant uses this modeling to plan electrical generation for the following day. Mirant uses meteorological data forecasted by the National Weather Service's Global Forecast Model (see http://www.arl.noaa.gov/ready/cmet.html) for Reagan National Airport. Modeling is carried out between 8:00 am – 10:00 am each day for the next day. All other model inputs including receptors, land use and building dimensions derived from BPIP-PRIME for downwash simulations were established in the August 2005 modeling report entitled "A Dispersion Modeling Analysis of Downwash from Mirant's Potomac River Power Plant" (ENSR Document 10350-002-410) and were used in the daily forecast modeling.

Beginning on February 19th and continuing through March 6th, PEPCO conducted a scheduled maintenance outage on one of the 230 kV transmission lines that supply electricity to central Washington DC. Any time one or more of these transmission lines is out of service, operations at the plant fall under Ordering Paragraph A of the December 20, 2005 Department of Energy (DOE) Order 202-05-03, which requires Mirant to "operate the Potomac River Generating Plant to produce the amount of power (up to its full capacity) needed to meet the demand in the Central D.C. area as specified by PJM for the duration of the outage". Section IV.C of the ACO, 'Operations During Line Outage Situations' mirrors the DOE Order. During the February 19 – March 6 period, PJM direction took precedence over daily predictive modeling guidelines when determining the number of units to run each day. Nevertheless, Mirant ran daily predictive and follow-up modeling throughout the duration of the line outage.

Table A-1 in (Appendix A) summarizes the daily predictive modeling results for each day. Mirant is required to control SO<sub>2</sub> emissions so that the maximum modeled 3-hour impact is at or below 1,061 g/m<sup>3</sup>. The 3-hour National Ambient Air Quality Standard (NAAQS) for SO<sub>2</sub> is 1,300 g/m<sup>3</sup>. Mirant assumes that there is an existing background concentration of 239 g/m<sup>3</sup>, representing the contribution to ambient air from other sources. For the 24-hour average, Mirant is required to control SO<sub>2</sub> emissions so that its maximum modeled impact is at or below 314 g/m<sup>3</sup>, allowing for a 51 g/m<sup>3</sup> background concentration. The 24-hour NAAQS for SO<sub>2</sub> is 365 g/m<sup>3</sup>.

Predictive  $PM_{10}$  modeling results can also be found in Table A-1. Mirant conducts  $PM_{10}$  modeling using an emission rate of 0.055 lb/MMBtu from each stack that is modeled to run, plus fugitive emissions at levels scaled to the number of units in operation. The emission rate used for  $PM_{10}$  modeling was set higher than the highest PM stack test result recorded at the plant. With three units in operation at the 0.055 lb/MMBtu  $PM_{10}$  emission rate, the plant shows modeled compliance under all meteorological conditions, therefore the ACO only requires predictive  $PM_{10}$  modeling be conducted when four or five units are scheduled to run.

In February 2007, modeling resulted in 3-hour SO<sub>2</sub> limits ranging from 0.30 lb/MMBtu to 2.13 lb/MMBtu and 24-hour SO<sub>2</sub> limits ranging from 0.24 lb/MMBtu to 0.60 lb/MMBtu.

## 3.0 Plant Operating Parameters

Upon completion of daily predictive modeling, operating targets for each unit that is scheduled to run the next day are set. The plant then operates the scheduled units at the  $SO_2$  emission rate and level of operation set by the model. A single 24-hour  $SO_2$  emission rate is assumed for all units that operate on a given day. In addition, a maximum 3-hour  $SO_2$  emission rate is determined during the predictive modeling process which is used as a short term upper limit by operators, should equipment malfunction cause  $SO_2$  emissions to rise above the 24-hour average limit. If a unit is not meeting its target  $SO_2$  emission rate, plant operations will be curtailed to an operating configuration that models NAAQS compliance.

There are three ways in which actual plant operations are compared to predictive modeling results to evaluate the plant's adherence to the scheduled operation prescribed by the predictive model.

#### 24-Hour Average SO<sub>2</sub> Emission Rate

Table B-1 (Appendix B) illustrates the 24-hour average  $SO_2$  emission rate each unit achieved for every day of the month, and the corresponding target  $SO_2$  emission rate to be met for each day. The 24-hour emission rate was met by all units in February 2007 when all transmission lines were in service, with one exception:

On February 5<sup>th</sup>, trona flow was interrupted on Unit #4 during the last three hours of the day. Trona feed piping and vent silo filters had become plugged, causing reduced trona flow. Unit load was reduced from 67 MW to minimum load at 9:40 pm and then taken off line at 12:32 am on February 6<sup>th</sup>. The 24-hour target for the day was 0.40 lb/MBtu and Unit #4 averaged 0.42 lb/MBtu for the day. SO<sub>2</sub> averages for the last three last three hours of the day were 0.50, 0.59, and 0.48 lb/MBtu. Follow-up modeling of actual emissions showed no exceedances and no exceedances were observed by the ambient monitoring network on February 5<sup>th</sup>.

During the line outage period, some units exceeded the 24-hour SO<sub>2</sub> target due to DOE Order requirements. On February  $23^{rd}$ , the 24-hour average SO<sub>2</sub> concentration at the Southeast monitor site was above the 24-hour SO<sub>2</sub> NAAQS. On that day, no predictive modeling scenario was SO<sub>2</sub> NAAQS compliant at the level of operation PJM required; therefore it was not possible to meet the 24-hour target on February  $23^{rd}$ .

#### 3-Hour Average SO2 Emission Rate

Table B-2 (Appendix B) illustrates the 3-hour maximum  $SO_2$  emission rate each unit attained for every day of the month, and the corresponding target  $SO_2$  emission rate not to be exceeded for each day. The 3-hour emission rate target was met by all units in February 2007 when all transmission lines were in service. During the line outage period, some units exceeded the 3-hour  $SO_2$  target due to DOE order requirements. No 3-hour  $SO_2$  NAAQS exceedances were observed by the  $SO_2$  monitoring network at any time in February however.

#### SO<sub>2</sub> Pounds-Per-Day Emissions

AERMOD models stack  $SO_2$  emissions as a mass emission rate in pounds per hour or grams per second. In order to determine if the actual output from each unit complied with the  $SO_2$  mass emissions predicted by the model, an  $SO_2$  pounds-per-day limit based on model results has been established.

Dispatch signals from PJM vary the generation output of each unit continuously, making it impossible to make hourly comparisons between actual unit generation and hourly-based predictive model results. Unit output can be evaluated however, by comparing each unit's total SO<sub>2</sub> pounds-per-day emitted to a daily target established by the predictive model.

Unit specific SO<sub>2</sub> pounds-per-day targets are computed using heat input to each unit, the daily SO<sub>2</sub> target emission rate, and the unit operating scenario selected for the day.

The daily SO<sub>2</sub> target emission rates and unit operating scenarios can be found in the daily predictive model results summary in Table A-1. Heat inputs for each unit are calculated from the daily operating scenarios, which describe the operating profile for each unit, and unit heat rates, which are a measure of how efficiently the units convert fuel heat content into electricity. The procedure below illustrates how the SO<sub>2</sub> pounds-per-day targets are derived.

The first step is to determine hourly heat input values based on the assumed minimum and maximum loads and associated heat rates listed in Table 3-1.

Unit	Operating Load	Net Power Output (MWh)	Net Heat Rate (MMBtu/MWh)	Heat Input (MMBtu)
4.8.0	Maximum	88	12.6	1113
1&2 —	Minimum	32	15.3	491
o. (	Maximum	102	10.2	1045
3, 4, and 5	Minimum	32	12.5	401

#### Table 3-1: Unit Heat Rates

Hourly heat inputs are then used to compute daily heat inputs based on the unit operating conditions. Daily heat inputs for all unit operating combinations are presented below in Table 3-2.

#### Table 3-2: Daily Unit Heat Inputs

Unit	Daily Operating Scenario	Daily Heat Input per Unit (MMBtu/day)
	8 Hours Maximum Load / 8 Hours Minimum Load / 8 Hours Off	12,826
1&2	16 Hours Maximum Load / 8 Hours Off	17,801
	24 Hours Maximum	26,701
	8 Hours Maximum Load / 16 Hours Minimum Load	14,769
3, 4, & 5	12 Hours Maximum Load / 12 Hours Minimum Load	17,346
	16 Hours Maximum Load / 8 Hours Minimum Load	19,922
	24 Hours Maximum Load	25,076

Based on the daily forecast operating scenario, multiplying the above heat input (in MMBtu/day) for each unit operating scenario times the daily target emission rate (in Ib/MMBtu) produces the daily target SO<sub>2</sub> mass emission rate (Ib/day) shown in Table B-3 for each unit.

For example, one configuration calls for Units 1 and 2 to operate at maximum load for 8 hours, minimum load for 8 hours, and off for 8 hours; and for Units 3, 4, and 5 to operate for 12 hours at maximum load and 12 hours at minimum load. Assuming the SO<sub>2</sub> limit for the day is 0.6 lb/MMBtu, the daily SO<sub>2</sub> target (in lb/day) is:

Unit 1 and 2: 12,826 MMBtu/day X 0.6 lb/MMBtu = 7,696 lb/day per unit

Unit 3, 4, and 5: 17,346 MMBtu/day X 0.6 lb/MMBtu = 10,408 lb/day per unit

Table B-3 illustrates the pounds per day of SO<sub>2</sub> emitted by each unit for every day of the month and its corresponding SO<sub>2</sub> lb/day target. The SO<sub>2</sub> lb/day targets were met by all units in February 2007 when all transmission lines were in service, with exceptions on one unit:

On February 10<sup>th</sup>, 13<sup>th</sup>, and 15<sup>th</sup>, Unit #2 was scheduled to run 8 hours at maximum load, 8 hours at minimum load, and 8 hours offline. The unit was dispatched at mid-load and high load for most of the 16 hours the unit ran, and subsequently ran over the SO<sub>2</sub> pounds-per-day limit for those three days. On February 10<sup>th</sup> and 15<sup>th</sup>, other units in operation were modeled to run at maximum load for the whole day, and on February 13<sup>th</sup>, other units were modeled to run 12 hours at maximum load and 12 hours at minimum load. A miscommunication occurred between the system dispatcher and the plant. Unit #2 was allowed to operate at a level of generation equal to the other units in operation instead of the 8hrs max/8hrs min/8hrs off configuration that it had been modeled to run. This oversight will be corrected.

During the line outage period, there were three days (February 20<sup>th</sup>, 23<sup>rd</sup>, and 24<sup>th</sup>), where some units exceeded the 24-hour pounds-per-day SO<sub>2</sub> target due to DOE Order requirements. On all three days, no predictive modeling scenario was SO<sub>2</sub> NAAQS compliant at the level of operation PJM required; therefore it was not possible to meet the pounds-per-day targets on those days.

It should be noted that occasionally a small number of  $SO_2$  pounds can be found in Table B-3 for units on non-operating days. These emissions are the result of boiler startup or shutdown activities associated with operations from the following or previous day. These insignificant emissions are a normal part of transitioning units on and off line and are acknowledged in Section IV.B.1.a of the ACO.

### 4.0 Follow-Up Modeling

ENSR performed follow-up modeling for the period February 1 – 31, 2007. The modeling used actual, measured, hourly, in-stack emissions parameters and hourly weather data from the National Weather Service site at Reagan National Airport. All other model inputs including receptors, land use and building dimensions derived from BPIP-PRIME for downwash simulations were established in the August 2005 modeling report entitled "A Dispersion Modeling Analysis of Downwash from Mirant's Potomac River Power Plant" (ENSR Document 10350-002-410) and were used in this follow-up modeling.

Appendix C contains daily operating data for the Potomac River Generating Station. The data are included on the accompanying CD. A "read me" file on the CD explains the file structure.

Table D-1 (Appendix D) summarizes the follow-up modeling results for each day and compares the results to the daily predictive modeling and to maximum observed ambient SO<sub>2</sub> concentrations in the monitoring network. There was one day in February in which follow-up modeling showed a potential 3-hour NAAQS exceedance (Feb. 11). Follow-up modeling showed three potential 24-hour NAAQS exceedances (Feb 1, 22 and 23). The 3-hour modeled exceedance on February 11 was predicted in the SE portion of the roof of Marina Towers for the 3-hour period ending 01500 local time. The exceedance was predicted at a location on the roof that is at the same location as the South SO<sub>2</sub> monitor on the roof. Meteorological conditions during this period consisted of moderate winds (6.3 m/sec) from  $160^{\circ}/170^{\circ}/170^{\circ}$  for the three hour period as measured at Reagan Airport and 4.0 - 4.5 m/sec from  $173^{\circ}/166^{\circ}/196^{\circ}$  as measured by the on site monitors. The maximum observed SO<sub>2</sub> concentrations from the monitors on February 11 was as follows:

Date	3-Hour Max. µg/m <sup>3</sup>	24-Hour Avg. μg/m <sup>3</sup>
February 1	N/A	27.7
February 11	68.5	N/A
February 22	N/A	231.8
February 23	N/A	407.9
NAAQS	1,300	365

The follow up 3-hour modeling prediction was much higher than the actual monitored SO<sub>2</sub> concentration because the actual plume heights from the units that were operating (Units 2,3,4,5) were higher than calculated by AERMOD. This is because winds from 170° nearly align the stack plumes, causing them to combine and achieve enhanced plume rise. The AERMOD model assumes that the stack gases do not combine.

The follow up 24-hour modeled exceedances were predicted on the roof of Marina Towers on the 1<sup>st</sup> and near the SE fenceline monitor on the  $22^{nd}$  and  $23^{rd}$ . On the 1<sup>st</sup>, winds were from the South at speeds between 3–8 m/sec as measured at Marina Towers. As in previous modeled exceedances, actual observed SO<sub>2</sub> concentrations were much lower than modeled. On the 1<sup>st</sup>, the maximum monitored 24-hour concentration was 27.7 µg/m<sup>3</sup>. The PRGS plumes were much higher than predicted by AERMOD due to plume alignment and plume interaction.

On the 22<sup>nd</sup>, winds were from the NW at speeds of 9-13 m/sec and on the 23<sup>rd</sup> winds were from the NW at speeds between 5-14 m/sec, with most of the winds greater than 10 m/sec. The PRGS operated under emergency conditions on the 22<sup>nd</sup> and 23<sup>rd</sup>. Maximum observed SO<sub>2</sub> concentrations were 232  $\mu$ g/m<sup>3</sup> and 408  $\mu$ g/m<sup>3</sup>. While still over predicting, AERMOD did reasonably well predicting the maximum impacts on these two days. During periods of NW winds, the stack plumes do not align as they do during south and SSE winds. With no alignment, AERMOD is better able to calculate plume rise and resultant downwash concentrations, although it still over predicts.

A review of Table D-1 (Appendix D) shows that sometimes there is a large discrepancy between the daily predictive modeling results and the follow-up modeling results using actual observed meteorological observations. On some days, follow-up modeling predicted higher concentrations, while on other days predictive modeling had higher concentrations. During southerly wind conditions, when power plant emissions are carried toward Marina Towers, follow-up modeling often predicts higher impacts than daily forecast modeling. ENSR presented a detailed explanation of the likely reasons for the differences between the daily predictive modeling and follow-up modeling for June, 2006 in a separate memo.

Charts D-1 and D-2 graphically display the data contained in Table D-1, with Chart D-1 displaying 3-hour SO<sub>2</sub> concentrations and Chart D-2 displaying 24-hour SO<sub>2</sub> concentrations for each day in February. Under normal operations, when predictive modeling is observed and there is no PEPCO Line Outage, the maximum predicted concentrations are always higher than observed concentrations, and generally by a wide margin. The likely reasons for this were discussed in the June 2006 memorandum cited above and in the Model valuation Study report.

Appendix D presents results of the weekly follow-up modeling. Modeling files are contained on the attached CD. A "read me" file on the CD explains the file structure.

## 5.0 Ambient Monitoring Data

As of August 2006, all six (6) Mirant Ambient Monitoring Program sites were in operation. The air quality monitoring sites measure ambient concentrations of sulfur dioxide  $(SO_2)$  in the vicinity of the Potomac River Power Plant. Three of the sites are at ground level and measure  $SO_2$  at approximately 3-4 meters above ground height. Two sites are at a residential building, Marina Towers, where 2 sample probes measure  $SO_2$  at a rooftop elevation. One probe is located at the center area of the building and one probe is positioned at the corner of the southeast wing of the building. One site is located southwest of the plant on the roof of the Holiday Inn. The six air monitoring sites were selected based on the results of extensive dispersion modeling, and the locations were approved by the U.S. EPA Region III as "preferred" sites in the Administrative Compliance Order dated June 1, 2006 (Docket No. CAA-03-2006-0163DA).

The ambient measurement program includes a meteorological measurement system that is comprised of tower-mounted parameters at the plant site. A separate SODAR system was added in December 2006. The list of air quality and meteorological parameters is provided in Table 5-1.

This report also includes a description of the monitoring equipment and data acquisition system. Section 6 of this report describes the various data validation criteria used for the Mirant ambient monitoring program, while Section 7 presents data results plus data capture statistics along with explanations of significant missing data periods. Appendix E presents monthly summary data reports of air quality and meteorological data. A satellite view of the Air Quality network is presented in Appendix F. The figure shows a view of the land area in the vicinity of the power plant with each measurement site labeled to indicate their location.

#### 5.1 Description of the Ambient Data Report

Ambient air quality and meteorological data are collected and reported on a monthly basis from the Potomac River Generating Station's ambient air quality and meteorological monitoring network. The network was installed between the end of May and the end of July 2006. The Marina Tower probe sites began sampling on June 2, 2006. At the end of June, the network consisted of 4 SO<sub>2</sub> measurement locations, which was increased to 6 probe locations during the later part of July 2006. A separate meteorological monitoring station was installed in July and became operational in August 2006. A separate location has been selected for a SODAR measurement site and will come on line at a later date. The site locations were described in more detail in the monitoring plan document prepared for the project. The air quality data are compared to the National Ambient Air Quality Standards (NAAQS) for SO<sub>2</sub> and summarized on the monthly data report summary pages (MONSUMS) in Appendix E of this report. The parameters that are (and will be) monitored at the sites are listed in Table 5-1. Table 5-2 lists the instrumentation used for the monitoring program.

Configuration, siting, operation, data processing, quality assurance, and quality control practices for this measurement program conforms to the provisions of EPA's Ambient Monitoring Guidelines for the Prevention of Significant Deterioration (PSD), EPA-450/4-87-007, May 1987) and On-Site Meteorological Program Guidance for Regulatory Modeling Applications (EPA-450/4-87-013, June 1, 1987) except for the siting criteria of the monitoring stations. Exceptions to the siting criteria were made to meet the special requirements of the measurement program. A project specific Monitoring and QA Plan document details the network locations and operational procedures.

Each site is equipped with an Odessa 3260 data logger that monitors and records the output signals from the continuous measurement analyzers. The data loggers perform preliminary data processing, including computation of 1-hour averages and provide temporary data storage. Wind variability (sigma theta, sigma W) calculations will also be conducted by the data logger. The ENSR Data Center routinely interrogates the data

loggers via a dial-up phone line to retrieve the stored data. Data are then edited and validated within ENSR's PC-based data processing system.

#### 5.2 Continuous Air Quality Measurements

Sulfur dioxide (SO<sub>2</sub>) measurements are conducted using continuous measurement analyzers connected to an air intake manifold. Sulfur dioxide is measured at each site using a Thermo Environmental Instruments (TEI) Model 43A analyzer. The Odessa data logger monitors and records the output from the analyzers and provides hourly averages of pollutant concentrations. The hourly averages are reported in the monthly summary reports, which are presented in Appendix E.

Analyzers go through an automatic calibration check each day using the in-station calibration device controlled by the Odessa data logger. The automatic calibration is reviewed each business day by ENSR technical staff to verify that the analyzer is operating within acceptable performance boundaries. In the event that the automatic calibration check shows that the analyzer is not operating as required, corrective action is taken to investigate and resolve any instrument problem, if needed. On a biweekly schedule, each continuous SO<sub>2</sub> analyzer is checked for precision and, if needed, subsequently calibrated using the network gas dilution system (ENSR GASCAL) device and a certified gas cylinder of a known pollutant concentration.

#### 5.3 Meteorological Measurements

A meteorological measurement system was installed during July-August 2006. Meteorological measurements are made at one tower site using sensors manufactured by Climatronics Corporation. Table 5-2 lists the parameter name and model number for each sensor. The sensors are installed on a 20-meter light tower located south of the power plant along the east fence line near the coal storage area. The wind speed, wind direction, and vertical wind sensors were moved from the 10-meter height to a 20-meter height on December 24, 2006 to improve sensor exposure. The meteorological site measures the parameters listed in Table 5-1.

The meteorological data is reviewed each business day to confirm that the system is operating properly and the hourly averages appear reasonable. The meteorological sensors receive a complete calibration and maintenance service check every 6 months.

Site Name	Monitored Parameters	Elevation Above Ground Level (AGL)
Marina Towers Air Monitoring Site	Sulfur Dioxide (SO <sub>2</sub> ) – Central Rooftop Location, 1 probe	45-meters
	Sulfur Dioxide (SO <sub>2</sub> ) – Southeast Rooftop Location, 1 probe	40-meters
Southeast Fence Line	Sulfur Dioxide (SO <sub>2</sub> ) – 1 probe	5 meters
Northeast Fence Line	Sulfur Dioxide (SO <sub>2</sub> ) – 1 probe	5 meters
North - Daingerfield Park	Sulfur Dioxide (SO <sub>2</sub> ) – 1 probe	5 meters
Southwest - Holiday Inn Building	Sulfur Dioxide (SO <sub>2</sub> ) – 1 probe	5 meters
	Meteorological Operations	······································
Met. Tower Site	Wind Speed (scalar & vector)	20 meters
	Wind Direction (scalar & vector)	20 meters
	Vertical Wind Speed	20 meters
	Sigma Theta	20 meters
	Sigma W	20 meters
	Temperature	2 meters
	Temperature Difference (△T)	2 to 10 meters
SODAR Plant Rooftop	Wind Speed (vector)	50, 75, 100, 125, 150, 175, 200 meters
	Wind Direction (vector)	50, 75, 100, 125, 150, 175, 200 meters
	Sigma Theta	50, 75, 100, 125, 150, 175, 200 meters
	Vertical Wind Speeds	50, 75, 100, 125, 150, 175, 200 meters
	Sigma W	50, 75, 100, 125, 150, 175, 200 meters

Table 5-1: Summary of Monitoring Program Parameters for Mirant Air Quality Network

Parameter	Instrument	EPA Designation No.	
SO <sub>2</sub>	Thermo Environmental Instruments (TEI) 43A	EQSA-0486-060	
Wind Speed	Climatronics Model F460	N/A	
Wind Direction	Climatronics Model F460	N/A	
Vertical Wind	RM Young	N/A	
Temperature/Temperature Difference	Climatronics		
Sigma Theta, Sigma W	Odessa DSM 3260	N/A	
	Support Equipment		
Function	Instru	ment	
Data Acquisition	Odessa DSM 3260		
Telemetry – modem	Practical Peripheral (or other)		
Calibration Tracking	Metronics, In-station Calibrator	rs with Permeation Tube	
Multipoint Calibrations and bi- weekly Precision and Level 1 Checks	ENSR GASCAL Portable Gas Dilution Calibration System with Scott Marrin Compressed Gas Cylinder of $SO_2$ in Nitrogen.		
Data Transmitters	Data Linc – Wireless transmitters/Receivers from measurement site into power plant.		

Table 5-2:	Monitoring	Equipment for th	e Mirant Ambier	nt Monitoring Program
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## 6.0 Ambient Data Validation Criteria

Data validation, an after-the-fact review of in-field collected data, is the process by which data are determined to be of acceptable or unacceptable quality based on a set of predefined criteria. These criteria depend upon the types of data involved and the purpose for which data are collected.

#### 6.1 Continuous Parameter Data Validation

Data validation, which occurs at several steps along the path of data flow, includes visual, mathematical, and graphical evaluations of the data. Checks are performed by ENSR field technicians, data processing personnel and ENSR operation and maintenance staff. Although the data validation process is continuous, final data validation can only occur at the time of a final calibration of each analyzer so that all of the validation criteria can be considered. ENSR staff review all measured data to determine validity during periods between the routine calibration checks.

Validation of continuous air quality data and meteorological is governed by strict standard operating procedures. For data to be considered valid, they must be accurate and precise within prescribed limits, represent factual conditions, be obtained from a calibrated, well-functioning instrument and from air sampled without interference or obstructions, and be thoroughly documented as traceable to recognized primary standards.

The data validation process initially begins in the field with the ENSR field technician's assessment of data during each site visit. Hourly data averages are subsequently scanned at ENSR for anomalous results and any faulty instrument performance. Events affecting validity are thoroughly documented. During the processing, erroneous data values are highlighted. An experienced ENSR data analyst performs checks of the field station log sheets, calibration data and the data report. The data-review also includes checking any values flagged as suspect and usually 2-5% of each data month's hourly values. Periods of data labeled suspect by the ENSR field technician are subsequently deemed valid or invalid by the ENSR validating meteorologist. All instrument calibrations (i.e., audits, multi-point calibrations, precision and Level 1 checks, etc.) are subsequently analyzed to confirm that initial calibration results are within acceptable tolerances.

#### 6.2 Data Validation Standards and Criteria

The following validation criteria are used in the evaluation of the data:

- The instrument must be in its normal sampling configuration.
- Each hourly average must be based on at least 45 minutes of valid data
- Each air quality data point must be bracketed by calibration checks showing instrument responses to be within  $\pm$  15% of input concentration.
- Audit, multipoint, precision and Level 1 calibration records of the continuous air quality sensors must indicate analyzer responses to be within ± 15% of input concentrations for the period under review.
- The following validation limits are used for the tower-based meteorological parameters:

Wind Speed	± 5 mph
Wind Direction	$\pm$ 20 degrees
Vertical Wind	±5 mph
Temperature	± 3.0° C

 Limits for SODAR-based meteorological data accuracy were presented in Table 1-2 of the QA Plan. Due to the technology associated with SODAR monitoring, it is sometimes difficult to provide definitive data validation limits where a co-located meteorological tower is not present. ENSR provides quantitative reasonability check tolerances upon which a professional meteorologist can base a data validation decision. The following is the validation criteria that will be used to evaluate SODAR data:

Test	Wind Speed Wind Directi (mph) (degrees)		Vertical Wind Speed (mph)	Sigma W (mph)	Sigma Theta (degrees)	
Acceptable Range	0 to 100	1 to 360	-15 to -15	0 to 30	0 to 180	
Hourly Difference Between SODAR and Tower	7.0	30	3.0	0.9	10	
Mean Difference of a Data Set (Tower vs. SODAR)	1.1	20	0.5	0.7	5	
Standard Deviation of Differences for a Data Set (Tower vs. SODAR)	4.5	30	2.0	0.7	10	

SODAR data are not judged invalid solely on the basis of the reasonability check acceptance criteria described in this section. Data failing to meet these reasonability check tolerances are ultimately determined valid or invalid by a meteorologist using professional judgment.

## 7.0 Ambient Data Results and Statistics

The parameter abbreviations used on the Monthly Data Summary Forms for the Mirant Project and their associated definitions are provided in Table 7-1.

Table 7-2 presents the valid data capture statistics for each monitored parameter for the monitoring period. Also included are explanations of all significant missing data periods throughout the report period for air quality parameters not meeting the 80% data capture goal, and meteorological parameters not meeting the 90% data capture goal.

Air Quality and Meteorological Parameters					
Parameters / Definition Monthly Summary Code					
Sulfur Dioxide	SO <sub>2</sub>				
Wind Speed	WS				
Wind Speed – Vector	WS-Vector				
Wind Direction	WD				
Wind Direction – Vector	WD-Vector				
Vertical Wind Speed	VWS				
Sigma Theta (wind direction variability)	Sigma T				
Temperature	Temp				
Temperature Difference 2 to 10- Meters	Delta T				
Site Name	Site Abbreviation				
Marina Towers – Central Probe	Marina Towers - CNTRL				
Marina Towers - South Probe	Marina Towers - SOUTH				
Southeast Site	SOUTHEAST SO <sub>2</sub>				
Northeast Site	NORTHEAST SO2				
Southwest Site/Holiday Inn	SOUTHWEST HOLIDAY IN				
North Site/Daingerfield Park	NORTH				

#### Table 7-1: Parameters, Site Name Codes, and Abbreviations

#### Table 7-2: Mirant Monthly Data Capture Summary

Site Name	Parameter	% Data Capture*	Total % Data Loss	Reason for Significant Periods of Data Loss**	Affected Dates
Marina Towers Central Probe	SO <sub>2</sub>	99.0	1.0		
Marina Towers South Probe	SO <sub>2</sub>	99.0	1.0		
Southeast Fence Line	SO <sub>2</sub>	99.0	1.0		
Northeast Fence Line	SO <sub>2</sub>	99.1	0.9		
<u>Southwest</u> Site/Holiday Inn	SO <sub>2</sub>	99.3	0.7		
<u>North</u> <u>Site/Daingerfield</u> Park	SO <sub>2</sub>	99.7	0.3		
Meteorological Tower	Wind Speed	100	0		
Measurements Reported as of	Wind Direction	100	0		
December 1, 2006	Vertical Wind	97.2	2.8		
	Sigma Theta	100	0		
	Sigma W	97.2	2.8		
	Temperature	100	0		
	Temperature Difference	100	0		

February 2007

\* Data capture target values are:

•

80% data capture for continuous air quality data. 90% data capture for continuous meteorological data. ٠

% data capture is based on the date of the site data start-up. .

\*\* Consecutive data loss greater than or equal to 12 hours

## Appendix A

# Modeled Input Files and Results of Daily Predictive Modeling (on CD)

Predictive Model Results Summary Table A-1

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## Table A-1: Predictive Model Results Summary

#### Potomac River

AERMOD M	lodel Results Log	24 Hr AVG	3 HR MAX	AERMOD PRE	EDI
DATE MODELED	SELECTED CONFIGURATION	TARGET SO2 RATE Ib/MBtu	SO2 RATE (Ib/MBtu)	SO2 3-HOUR	
February 1, 2007	F3 Units 1, 2, 3 & 4 (24 Max)	0.50	0.83	575	
February 2, 2007	F3 Units 1, 2, 3 & 4 (24 Max)	0.60	2.13	267	
February 3, 2007	O1 (Unit 1&2 16-0-8, & Unit 4 12/12)	0.50	0.77	615	
February 4, 2007	E3 (1,2,4&5 @ 24 Max)	0.60	1.07	532	
February 5, 2007	H2(# 1@ 8,8,8 / # 4&5 @ 24Max)	0.40	1.31	289	
February 6, 2007	G3 Unit 1, 2, 3, 4 & 5(24Max)	0.55	1.34	391	
February 7, 2007	J2 (Unit 1 @ 8,8,8 / 3&5 @ 24 Max)	0.50	1.01	469	
February 8, 2007	A4 (3, 4 & 5 @ 24 Max)	0.50	1.21	393	
February 9, 2007	A4 (3, 4 & 5 @ 24 Max)	0.45	1.33	322	
February 10, 2007	C2 unit 2 @ (8/8/8) 3,4,5 @ (24max)	0.45	0.85	505	
February 11, 2007	"C" UNIT 2 @ 8,8,8/ (3,4,5)12/12	0.50	0.75	630	
February 12, 2007	"C" UNIT 2 @ 8,8,8/ (3,4,5)12/12	0.60	1.21	471	
February 13, 2007	"P" UNITS 1,2 @ 8/8/8, 5 @ 12/12	0.50	1.46	325	
February 14, 2007	S2 (UNITS 4 & 5 @ 24 MAX)	0.55	0.86	610	
February 15, 2007	Y2 (Unit 2 @ 8/8/8, 5 @ 24)	0.55	1.76	297	
February 16, 2007	C3 (Units 2,3,4&5 @ 24 Max)	0.50	0.88	538	
February 17, 2007	A (Units 3-4-5 @ 12 Min / 12 Max)	0.60	1.06	537	
February 18, 2007	"S" (UNITS 4&5) 12/12	0.50	1.47	323	
February 19, 2007	G1 (1&2 @ 16,0,8)(3,4,5 @ 12/12)	0.55	0.59	880	
February 20, 2007	G3 Unit 1, 2, 3, 4 & 5(24Max)	0.24	0.34	669	
February 21, 2007	G3 Unit 1, 2, 3, 4 & 5(24Max)	0.60	0.89	643	
February 22, 2007	G3 Unit 1, 2, 3, 4 & 5(24Max)	0.50	0.47	1004	
February 23, 2007	G3 Unit 1, 2, 3, 4 & 5(24Max)	0.24	0.30	766	
February 24, 2007	G3 Unit 1, 2, 3, 4 & 5(24Max)	0.24	0.42	549	
February 25, 2007	G3 Unit 1, 2, 3, 4 & 5(24Max)	0.60	0.92	617	
February 26, 2007	G3 Unit 1, 2, 3, 4 & 5(24Max)	0.60	1.29	442	$\perp$
February 27, 2007	G3 Unit 1, 2, 3, 4 & 5(24Max)	0.60	1.38	414	
February 28, 2007	G3 Unit 1, 2, 3, 4 & 5(24Max)	0.60	0.68	839	

AERMOD PREDICTED CONCENTRATIONS											
SO2	SO2	PM10									
3-HOUR	24-HOUR	24-HOUR									
575	169	22									
267	51	20									
615	198	N/A									
532	202	19									
289	199	N/A									
391	193	23									
469	192	N/A									
393	201	N/A									
322	179	N/A									
505	182	24									
630	204	30									
471	74	32									
325	203	N/A									
610	195	N/A									
297	173	N/A									
538	206	24									
537	151	N/A									
323	198	N/A									
880	182	24									
669	548	128									
643	152	29									
1004	280	37									
766	717	164									
549	324	76									
617	133	37									
442	111	31									
414	135	36									
839	297	34									

AMBIENT LIMITS (with background removed)									
3 HR SO2	24 HR SO2	24 HR PM10							
1061 ug/m <sup>3</sup>	314 ug/m <sup>3</sup>	105 ug/m <sup>3</sup>							

## **Appendix B**

## Plant Operating Parameters Summary

24 Hour SO<sub>2</sub> Rate Compliance Summary Table B-1

3 Hour SO<sub>2</sub> Rate Compliance Summary Table B-2

24 Hour SO<sub>2</sub> Lb/Day Compliance Summary Table B-3

# Table B-124 Hour SO2 Rate Compliance Summary

	Unit 1 SO2	Unit 2 SO 2	Unit 3 SO2	Unit 4 SO2	Unit 5 SO2	Daily
DATE	24 Hr Avg	24 Hr Avg	24 Hr Avg	24 Hr Avg	24 Hr Avg	SO2 Target
	lb/MMBtu	lb/MMBtu	lb/MMBtu	lb/MMBtu	lb/MMBtu	lb/MMBtu
February 1, 2007	0.48	0.44	0.48	0.47	0.00	0.50
February 2, 2007	0.46	0.55	0.57	0.57	0.00	0.60
February 3, 2007	0.46	0.45	0.00	0.49	0.00	0.50
February 4, 2007	0.48	0.50	0.00	0.54	0.44	0.60
February 5, 2007	0.32	0.17	0.00	0.42	0.37	0.40
February 6, 2007	0.47	0.50	0.28	0.45	0.51	0.55
February 7, 2007	0.43	0.00	0.46	0.21	0.48	0.50
February 8, 2007	0.00	0.00	0.47	0.43	0.47	0.50
February 9, 2007	0.00	0.00	0.45	0.41	0.42	0.45
February 10, 2007	0.00	0.40	0.40	0.41	0.42	0.45
February 11, 2007	0.00	0.42	0.46	0.45	0.45	0.50
February 12, 2007	0.11	0.50	0.56	0.52	0.54	0.60
February 13, 2007	0.40	0.43	0.00	0.14	0.48	0.50
February 14, 2007	0.00	0.00	0.00	0.44	0.46	0.55
February 15, 2007	0.00	0.45	0.19	0.00	0.52	0.55
February 16, 2007	0.00	0.46	0.45	0.41	0.49	0.50
February 17, 2007	0.00	0.00	0.49	0.55	0.52	0.60
February 18, 2007	0.00	0.00	0.33	0.45	0.44	0.50
February 19, 2007	0.44	0.41	0.50	0.52	0.51	0.55
February 20, 2007	0.57	0.37	0.38	0.31	0.42	0.24
February 21, 2007	0.61	0.55	0.57	0.56	0.54	0.60
February 22, 2007	0.61	0.48	0.50	0.47	0.58	0.50
February 23, 2007	0.50	0.35	0.38	0.40	0.50	0.24
February 24, 2007	0.36	0.27	0.39	0.39	0.47	0.24
February 25, 2007	0.55	0.56	0.56	0.56	0.56	0.60
February 26, 2007	0.44	0.56	0.56	0.56	0.61	0.60
February 27, 2007	0.51	0.56	0.57	0.55	0.54	0.60
February 28, 2007	0.54	0.56	0.56	0.55	0.58	0.60

ENSR

#### Table B-2

#### 3-Hour SO2 Rate Compliance Summary

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	3-Hour
	Maximum 3-	Maximum 3-	Maximum 3-	Maximum 3-	Maximum 3-	
DATE		Hour SO2 Rate				SO2 Target
DATE	(lb/MMBtu)	(Ib/MMBtu)	(Ib/MMBtu)	(lb/MMBtu)	(lb/MMBtu)	(lb/MMBtu)
February 1, 2007	0.61		0.54	0.54	0.00	0.83
February 2, 2007	0.54		0.63	0.64	0.00	2.13
February 3, 2007	0.55		0.00	0.52	0.00	0.77
February 4, 2007	0.59		0.00	0.58	0.59	1.07
February 5, 2007	0.46		0.00	0.52	0.41	1.31
February 6, 2007	0.49	0.53	0.51	0.57	0.55	1.34
February 7, 2007	0.49	0.00	0.67	0.07	0.65	1.01
February 8, 2007	0.00	0.00	0.54	0.47	0.53	1.21
February 9, 2007	0.00		0.48	0.43	0.53	1.33
February 10, 2007	0.00	0.58	0.44	0.42	0.47	0.85
February 11, 2007	0.00		0.48	0.47	0.48	0.75
February 12, 2007	0.11	0.54	0.78	0.55	0.55	1.21
February 13, 2007	0.56	0.48	0.00	0.16	0.52	1.46
February 14, 2007	0.00	0.00	0.00	0.47	0.49	0.86
February 15, 2007	0.00	0.67	0.23	0.09	0.60	1.76
February 16, 2007	0.00	0.53	0.58	0.46	0.67	0.88
February 17, 2007	0.00	0.00	0.55	0.56	0.59	1.06
February 18, 2007	0.00	0.00	0.17	0.45	0.53	1.47
February 19, 2007	0.69	0.59	0.53	0.52	0.52	0.59
February 20, 2007	0.75	0.54	0.63	0.38	0.54	0.34
February 21, 2007	0.75	0.56	0.58	0.57	0.70	0.89
February 22, 2007	0.91	0.51	0.53	0.48	0.74	0.47
February 23, 2007	0.67	0.40	0.48	0.46	0.55	0.30
February 24, 2007	0.49	0.30	0.48	0.43	0.58	0.42
February 25, 2007	0.72	0.57	0.57	0.58	0.59	0.92
February 26, 2007	0.54	0.57	0.56	0.56	0.73	1.29
February 27, 2007	0.54	0.61	0.61	0.56	0.57	1.38
February 28, 2007	0.84	0.61	0.57	0.57	0.62	0.68

#### Table B-3

24 Hour SO2 Lb/Day Compliance Summary

		1 SO2	Unit 2	SO2	Unit	3 SO2	Unit	4 SO2	Unit	5 SO2	Total	SO2
DATE	24 Hr Total	SO2 Target1	24 Hr Total	SO2 Target								
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
February 1, 2007	6,812	13,351	9,424	13,351	6,600	12,538	7,782	12,538	-	-	30,618	51,777
February 2, 2007	9,025	16,021	12,338	16,021	8,967	15,045	9,599	15,045	-	-	39,929	62,132
February 3, 2007	6,369	8,900	6,760	8,900	96	-	8,118	8,673	3	-	21,346	26,474
February 4, 2007	7,640	16,021	9,855	16,021	-	-	10,076	15,045	7,284	15,045	34,855	62,132
February 5, 2007	4,553	5,130	35	-	-	-	7,131	10,030	4,244	10,030	15,963	25,191
February 6, 2007	6,524	14,686	10,999	14,686	1,005	13,792	4,120	13,792	10,248	13,792	32,896	70,746
February 7, 2007	4,045	6,413	147	-	6,594	12,538	236	-	6,691	12,538	17,713	31,488
February 8, 2007	-	-	-	-	6,795	12,538	8,075	12,538	7,006	12,538	21,876	37,613
February 9, 2007	-	-	-	-	6,639	11,284	8,189	11,284	6,077	11,284	20,905	33,852
February 10, 2007	-	-	6,130	5,771	6,213	11,284	7,696	11,284	6,175	11,284	26,214	39,624
February 11, 2007	-	-	6,348	6,413	6,424	8,673	5,591	8,673	7,380	8,673	25,743	32,432
February 12, 2007	21	-	7,501	7,695	7,965	10,408	7,322	10,408	8,645	10,408	31,454	38,918
February 13, 2007	3,822	6,413	6,431	6,413	-	-	28	-	8,039	8,673	18,320	21,498
February 14, 2007	-	-	-	-	-	-	2,368	13,792	6,922	13,792	9,290	27,583
February 15, 2007	-	-	7,147	7,054	59	-	14	-	7,531	13,792	14,751	20,846
February 16, 2007		-	10,982	13,351	5,954	12,538	6,033	12,538	5,892	12,538	28,861	50,964
February 17, 2007	-	-	94	-	8,365	10,408	9,158	10,408	9,410	10,408	27,027	31,223
February 18, 2007	-	-	-	-	85	-	7,475	8,673	7,464	8,673	15,024	17,346
February 19, 2007	5,235	9,790	4,417	9,790	6,789	9,540	8,521	9,540	8,842	9,540	33,804	48,202
February 20, 2007	9,798	6,408	7,779	6,408	6,903	6,018	6,145	6,018	7,630	6,018	38,255	30,871
February 21, 2007	10,065	16,021	11,455	16,021	10,976	15,045	11,805	15,045	9,347	15,045	53,648	77,178
February 22, 2007	11,618	13,351	9,001	13,351	8,888	12,538	8,103	12,538	10,557	12,538	48,167	64,315
February 23, 2007	8,192	6,408	6,270	6,408	6,927	6,018	7,682	6,018	9,501	6,018	38,572	30,871
February 24, 2007	4,523	6,408	3,622	6,408	6,848	6,018	7,412	6,018	8,947	6,018	31,352	30,871
February 25, 2007	6,749	16,021	7,582	16,021	9,369	15,045	9,650	15,045	9,968	15,045	43,318	77,178
February 26, 2007	7,426	16,021	10,766	16,021	10,502	15,045	11,844	15,045	11,215	15,045	51,753	77,178
February 27, 2007	9,668	16,021	10,622	16,021	9,795	15,045	9,223	15,045	10,036	15,045	49,344	77,178
February 28, 2007	10,425	16,021	10,761	16,021	9,623	15,045	9,518	15,045	10,490	15,045	50,817	77,178

Appendix C

Plant Operating Data for February (on CD)

## Appendix D

## Follow-Up Modeling Results (on CD)

Follow-up Model Summary Table D-1

3 Hour SO<sub>2</sub> Comparison Figure D-1

24 Hour SO<sub>2</sub> Comparison Figure D-2

#### Table D-1: Follow-Up Model Summary

#### Mirant Potomac, Alexandria, Virginia

Maximum SO 2 Impacts Predicted by AERMOD Using Actual Stack Emissions/Parameters Along with Historical Meteorological Observations

Maximum Measured SO 2 Concentrations from Ambient Monitoring Network

Predicted Concentrations above the threshold values are in **bold** 

3-hr Threshold Value: 1300 (NAAQS) - 238.4 (Background) = 1061.6  $\mu$ g/m<sup>3</sup>

24-hr Threshold Value: 365 (NAAQS) - 51 (Background) = 314  $\mu$ g/m<sup>3</sup>

Date	Date Units Operating		ed Concentrations ted Met Data		ed Concentrations ved Met Data	Observed MC		]
		3-hr (μg/m <sup>3</sup> )	24-hr (μg/m <sup>3</sup> )	3-hr (µg/m³)	24-hr (μg/m <sup>3</sup> )	3-hr (µg/m <sup>3</sup> )	24-hr (μg/m <sup>3</sup> )	
February 1, 2007	Units 1, 2, 3, 4	575	169	813	370	41.5	27.7	Max Impact Location - Roof of Marina Towers
February 2, 2007	Units 1, 2, 3, 4	267	51	739	117	132.3	33.7	
February 3, 2007	Units 1, 2, 4	615	198	816.8	218.6	76.0	27.1	
February 4, 2007	Units 1, 2, 4, 5	532	202	505.9	213.7	253.7	73.2	
February 5, 2007	Units 1, 4, 5	289	199	270.5	156.1	117.5	72.3	
February 6, 2007	Units 1, 2, 3, 4, 5	391	193	465.4	198.8	79.1	44.4	
February 7, 2007	Units 1, 3, 5	469	192	402.5	148.3	137.6	59.0	
February 8, 2007	Units 3, 4, 5	393	201	407	150	193.4	68.9	
February 9, 2007	Units 3, 4, 5	322	179	314.9	197.9	132.3	71.9	
February 10, 2007	Units 2, 3, 4, 5	505	182	572.5	263.3	209.6	91.2	
February 11, 2007	Units 2, 3, 4, 5	630	204	1,314.8	182.7	68.5	46.3	Max Impact Location - Roof of Marina Towers
February 12, 2007	Units 2, 3, 4, 5	471	74	285.1	45.2	102.6	41.1	
February 13, 2007	Units 1, 2, 5	325	203	346.2	140.0	34.1	19.8	
February 14, 2007	Units 4, 5	610	195	111.9	32.8	131.4	85.0	
February 15, 2007	Units 2, 5	297	173	468.3	185.1	119.6	63.9	1
February 16, 2007	Units 2, 3, 4, 5	538	206	476.3	165.3	96.5	51.4	
February 17, 2007	Units 3, 4, 5	537	151	577.3	181.8	22.3	19.1	1
February 18, 2007	Units 4, 5	323	198	139.9	71.1	126.6	62.5	1
February 19, 2007	Units 1, 2, 3, 4, 5	880	182	607.5	204.8	254.6	57.5	1
February 20, 2007	Units 1, 2, 3, 4, 5	669	548	506.4	192.6	28.4	19.1	1
February 21, 2007	Units 1, 2, 3, 4, 5	643	152	445.5	89.0	27.5	16.0	1
February 22, 2007	Units 1, 2, 3, 4, 5	1,004	280	1,000.7	547.7	805.2	231.8	Max Impact Location - Fenceline, SE of Stack 1
February 23, 2007	Units 1, 2, 3, 4, 5	766	717	1,018.0	576.5	676.8	407.9	Max Impact Location - Fenceline, SE of Stack 1
February 24, 2007	Units 1, 2, 3, 4, 5	549	324	762.9	296.9	171.6	80.6	
February 25, 2007	Units 1, 2, 3, 4, 5	617	133	641.7	142.6	20.5	12.7	
February 26, 2007	Units 1, 2, 3, 4, 5	442	111	361.6	68.8	30.1	15.7	
February 27, 2007	Units 1, 2, 3, 4, 5	414	135	447.1	128.2	33.2	16.7	
February 28, 2007	Units 1, 2, 3, 4, 5	839	297	502.8	133.6	69.4	28.4	

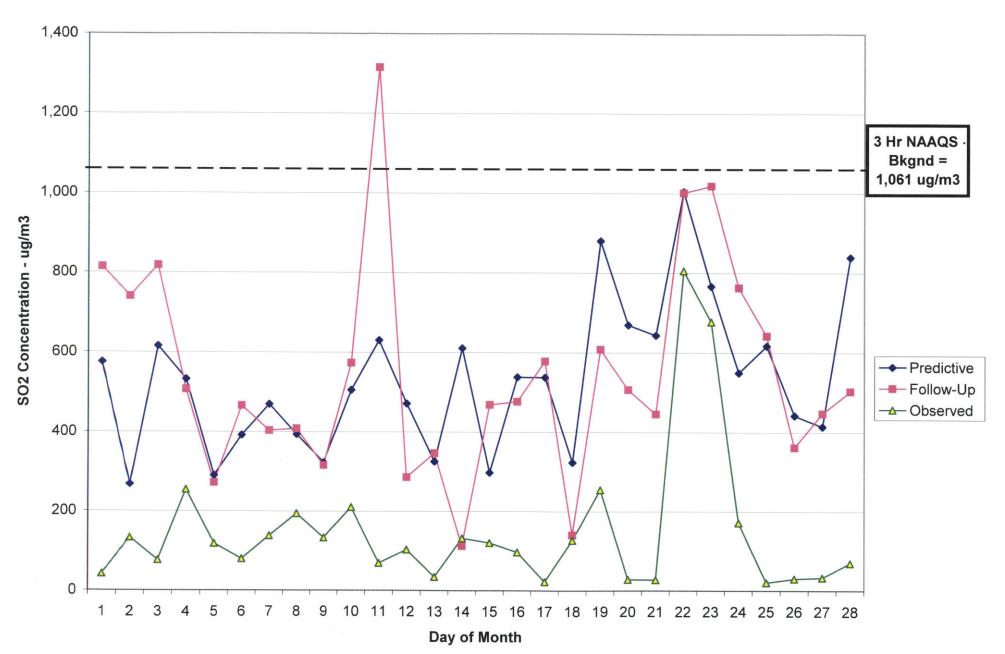


Figure D-1: February 2007 3 Hr SO2 Comparison

ENSR

March 2007

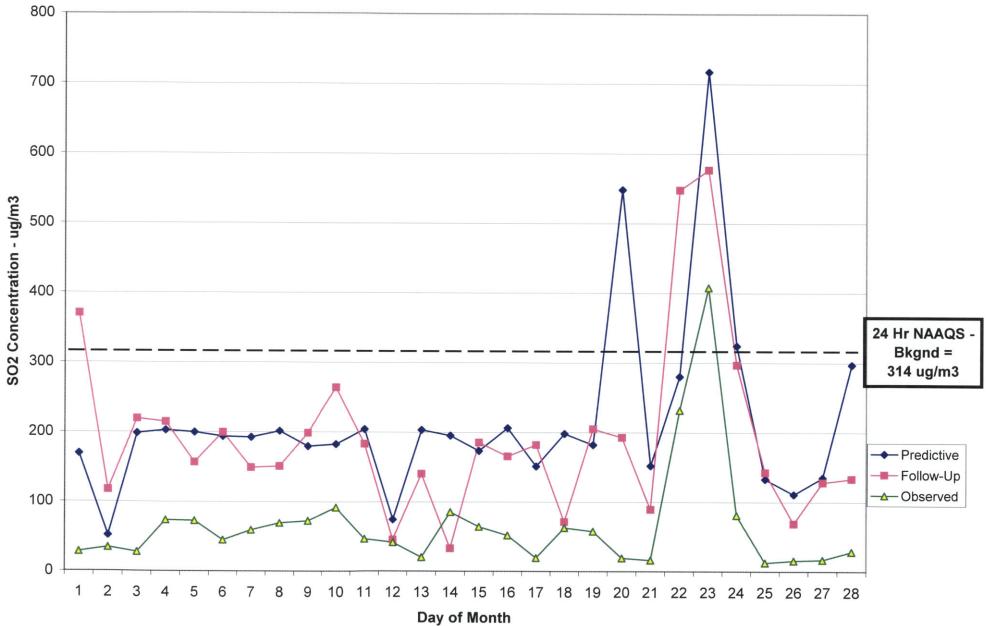


Figure D-2: February 2007 24 Hr SO2 Comparison

## Appendix E

## Monthly Summary Data Reports (on CD)

Monthly SO<sub>2</sub> and Meteorological Summary Reports

										MON	THLY	SUMMA	RY RE	PORT							*				
										MI	RANT	ротом.	AC								DAT	A FOR	FEB ;03/1	2007	
LOCATI	0 N : MA	ARINA	TOWE	RS SO	2				CNTR	L			(บ	g/m3)							RUN	DATE	:03/1	4/07	
HR-BEG HR-END DAY	00 01	01 02	02 03	03 04	04 05	05 06	06 07	07 08	08 09	09 10	HOU 10 11	RS(es 11 12	t) 12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	AVG
1234567891111111111222222	5863255829546587275436421500 1 122211 11 1 2 12312	48438496988436873542327403881 1988436873542327403881	13335887695320354240344722418 1195320354240344722418 112221	9433021392522853271256320400 11121392522853271256320400	34760942222127054980274720996 1154127054980274720996	14884 14884 14884 14822 14822 116260 884 9477 15886 14 11 15886 16 14 14 14 14 14 14 14 14 14 14 14 14 14	16783786277023272646177049357708 1111541321111311049357708	0182793356679097319742354504 112441 1 112211114 12	321734039185290903436222894497 1111324111318529090903436222894497	16300924779564 127387423483926 	1088020444207-0887060419693848 122222222222222222222222222222222222	9876492711002 210022737 11222737 1122737 1204649888880 230	975987292348598944469 22182292144469 114469 22922	1285 104 1802 1480 1259 1223 180 1259 1223 12338 182 1253 1223 12338 12212 12212 12238 12212 12238 12221 12238 12221 12238 12221 12238 12221 12238 1225 12238 1225 1225 1225 1225 1225 1225 1225 122	122473-9309925929384484642980 	1624837647563458089966092790 2147563458089966092790 10458089960092790	1364932748785432085409550 111128322085409550 1088532185409550 108853	1264 744 120309854 102978518344 122978518344 15242 1122	100374412121368498893990735444204 1212136849189939073544221	29394003844830780736834933363 121121111111221183077807316834933363	37749444418838094322035044370 111112118838094322035044370 1122334370	182550287212737086889554825211 1112221370868895548252116 2212127370868895548252116	13158 <b>4944</b> 6108350887950502111021	10072057254773889286318327211 12542173889286318327211 1231217	154939082967584611312422210254 112232 1111121422210254
AVG Hours	13 28	14 28	14 28	14 28	15 28	16 28	17 28	19 28	20 28	18 27	17 27	20 27	20 27	18 26	17 27	17 28	15 28	13 28	12 28	13 28	13 28	13 28	13 28	15 28	16 665
TOTAL NUMBEI NUMBEI DATA STAND	R OF R OF CAPTU	GOOD MISSI RE (H	ING H PERCE	OURS=	67 66 99	5 H 7 21 .0 M	IGHES' nd HI(	AVERA( T HOU GH HOU M REP(	RLY V URLY	VALUE	=	16 110 103 H 3 2	- 3HR ØVAI HIGHES 2nd H	RUNNI LUES I St Avi Ighes'	ING A' Exceei Erage f avg	VERAGI D1300 81 . 81	E 1	-24HR ØV/ HIGHES 2nd I	RUNNI ALUES ST AVI HIGHES	EXCER Brage	ID 365 38	5			

NOTE: MISSING VALUE INDICATOR IS----

DATA VALIDATED BY ENSR \* \* \* \*\*

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												SUMMA		PORT							 *				 *
LOCATIO	0 N : M7	ARINA	TOWE	RS SO	)2				SOUT		RANT	POTOM		lg/m3)							DAT RUN	A FOR	FEB :03/1	2007 4/07	
HR-BEGO HR-ENDO DAY	20 21	01 02	02 03	03 04	04 05	05 06	06 07	07 08	08 09	09 10	HOU 10 11	JRS(es 11 12	t) 12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	AVG
1234567891111111111122222222222222222222222222	1111 1 2132887490698742721428 2132887490698742721428	1007407683211866906876308411581	3147500282886322704816378288880 1122124311122121111221211112212111122121111122121	1684366708164886323447524398 112154164886323447524398 11231 1111 1	18417336438660887003456832006 112112154128870034568322006	1882632576476833302297948878886 12211547683302297948878886 1	071440084405778473866638930557798 11254111111131 1135 18 113 113 113 113 113 113 113 113 113 113	3221402649222102006400043475595 221121112552112212321114 259521022006400043475595	24066362512690046655843134229 522111113351 11112312124 116	264426085960-2308576144060 	1602464050490-3195848489339003 	102503996345-2907270070001532 122021825-290727007001532 12312212070044	<b>14</b> 098208257110992027778883 1221257110992027778883 132125711083 1111133 112133	16 127 18 124 148 192 132 129 132 132 132 132 132 132 132 132	177505-479537947988399994	20940 10521 1229177771 1229177771 12506680 103389904 124	181 535 1290 2190 210 8276 210 829 8276 1829 18276	148507112002873520884955745365 121202873520884955745365	14449702274440052219230284735208 12923021212120284735208	31 40760071160053118374894564366 1122222 128374894564366 1111	4104070686444140297748440470044611122214029774884070044611122111111212111111121111111111111	2478370264604810794045844008 112221222 211112221222 210794045844008	12 1471854048101827188047048 212 12 12 12 12 12 12 12 12 1	1429333011 122152220 2026088410 11218210 11218210 11218210 11218210	21726242639190584634735429266 1121229190584634735429266
AVG Hours	15 28	15 28	16 28	17 28	17 28	18 28	19 28	21 28	23 28	21 27	21 27	23 27	23 27	21 26	20 27	2Ø 28	17 28	15 28	14 28	15 28	16 28	15 28	15 28	17 28	18 665
TOTAL NUMBER NUMBER DATA C STANDA	OF OF	GOOD MISSI	HOURS ING HO ERCEI	= )URS= NT) = =	67 66 99	5 H. 7 21 0 M.	IGHES: nd HI(	AVERAC F HOUI Gh Hou M Repo	RLY VA JRLY V		=		ØVA HIGHES	RUNNI LUES I St Avi Ighesi	EXCEEI Erage	VERAGI D1300 89 . 71	5 H	24HR ØVA HIGHES 2nd H	RUNNJ LUES St Ave Lighes	NG AV Excee Rage T avg	VERAGE ID 365 41 ;. 34	5 - 5			

NOTE: MISSING VALUE INDICATOR IS----

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*	DATA VALIDATED BY	*
*	ENSR	*
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		MONTHLY SUMMARY REP	RT	* * *
		MIRANT POTOMAC		DATA FOR FEB 2007
LOCATION: SOUTHEAST SO2	S02	02 (ug	m3)	RUN DATE:03714707
HR-BEG00 01 02 03 HR-END01 02 03 04 DAY	04 05 06 07 08 05 06 07 08 09	HOURS(est) 09 10 11 12 10 11 12 13	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	18 19 20 21 22 23 19 20 21 22 23 24 AVG
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
AVG 43 41 49 55 Hours 28 28 28 28	62 59 52 48 72 28 28 28 28 28 28	2 85 80 77 78 8 28 27 28 27	69     83     78     71     73       27     27     27     27     27	52 53 53 56 52 53 62 28 28 28 28 28 28 28 665
TOTAL HOURS = NUMBER OF GOOD HOURS = NUMBER OF MISSING HOURS= DATA CAPTURE (PERCENT) = STANDARD DEVIATION =	99.0 MINIMUM REPORTED	VALUE = 842 HIGHEST	SEXCEED1300 20VAL AVERAGE 805 HIGHEST	RUNNING AVERAGE- LUES EXCEED 365 I AVERAGE 532 IGHEST AVG. 172

NOTE: MISSING VALUE INDICATOR IS----

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*	DATA VALIDATED BY	*
*	ENSR	*
******	*****	* *

		MONTHLY SUMMARY REP MIRANT POTOMAC	ORT	*	*
LOCATION: NORTHEAST SO2	S02	02 (uç	/m3)	DATA FOR RUN DATE:	FEB 2007 03/14/07
HR-BEG00 01 02 03 HR-END01 02 03 04 DAY	04 05 06 07 08 05 06 07 08 09	HOURS(est) 09 10 11 12 10 11 12 13	13 14 15 16 17 14 15 16 17 18	18 19 20 21 19 20 21 22	22 23 23 24 AVG
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
AVG 16 14 16 19 HOURS 28 28 28 28	20 19 22 20 24 28 28 28 28 28 28	4 26 29 25 32 8 28 27 25 26	28 32 39 33 27 28 28 28 28 28 28	19 21 19 19 28 28 28 28 28	21 21 23 28 28 666
TOTAL HOURS = NUMBER OF GOOD HOURS = NUMBER OF MISSING HOURS= DATA CAPTURE (PERCENT) = STANDARD DEVIATION =	672 TOTAL AVERAGE 666 HIGHEST HOURLY VI 6 2nd HIGH HOURLY V 99.1 MINIMUM REPORTED 22	VALUE = 176 OVAL VALUE = 147 HIGHES	IES EXCEED1300 OVA AVERAGE 137 HIGHES	RUNNING AVERAGE- LLUES EXCEED 365 T AVERAGE 66 LIGHEST AVG. 55	

NOTE: MISSING VALUE INDICATOR IS----

\* \* \* \* DATA VALIDATED BY

											SUMMA		PORT							 *				 *
LOCATION: N	NORTH	-DAING	FERFIE	ELD				<b>S</b> 02		RANT	POTOM		g/m3)							DAT RUN	A FOR	FEB :03/1	2007	
HR-BEG00 HR-END01 DAY	01 02	02 03	03 04	04 05	Ø5 Ø6	06 07	Ø7 Ø8	08 09	09 10	HOU 10 11	RS(es 11 12	t) 12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	AVG
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	13964 1077 166388774 12964 12828174 12964 128281 1825 1825 18258 18257 1	13 84 147 102460 12460 12250 122460 12250 12250 12250 12250 12250 12250 125000 125000 125000 125000 125000 125000 125000 125000 125000 125000 125000 125000 1250000000000	179433484235438733300443720956 112435438733300443720956	222062233836886496432830753 1121238311886496432830753	<b>9404</b> <b>12042</b> <b>1404</b> <b>1404</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>11</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>111</b> <b>11111</b> <b>11111</b> <b>11111</b> <b>1111111</b> <b>11111111</b>	212 212 213 213 213 213 213 213 213 213	4702804263120202077729852327572 11124422111221 114 22 114 22 114 22	52186434010779203857872017277 1113341 11231872017277 6	27744230846683630910856695209 212123 2241111 2212123 115	02226640584518400282850834061 21122223 114	1203838953963482327781048215 1231131122 123113112111232 123	12 5112256339283467742128003 1212141 121211113218003	1073892467308883036822146238 212673088883036822146238	14507937404580530990608832946 312404580530990608832946	<b>224</b> 25207580587130007044998804 130421100070444908804 1211111111111111111111111111111111111	146437778729911 120911 120911 120911 120911 1209121283007288 1212883007288	$\begin{array}{c} 134\\ 150\\ 2204\\ 1212\\ 225\\ 1225\\ 1242\\ 999295\\ 845\\ 1047\\ 117\\ 117\end{array}$	1395978112212212212212212212212212212212212212	30850768685805387079894794046 2121212111111111111111111111111111111	3750784441 12225008233235794868 1131122212 128231235794868	20482706418058096999945885887 112121222113315885887	124436767222774809686598043817 11222174809686598043817	12 12 1111114212 103985002787 11222 11	214151314252605833326014410034 1121223211111221014120034
AVG 13 HOURS 28	14 28	14 28	15 28	15 28	16 28	17 28	18 28	22 28	20 28	20 28	20 28	20 28	17 28	17 28	20 28	17 27	14 27	13 28	14 28	14 28	14 28	15 28	15 28	16 670
TOTAL HOU NUMBER OF NUMBER OF DATA CAPTI STANDARD I	GOOD MISSI URE (1	ING HO PERCEI	DURS=	67; 67; 99; 10	0 H3 2 21 .7 M3	IGHES: nd HIC		RLY VA JRLY V	LUE ALUE VALUE	= 1 =		ØVAI IIGHES	RUNNI JUES E St Ave Ighest	XCEEL RAGE	1300 79		IIGHES	LUES	EXCEE RAGE	D 365 32	5			

NOTE: MISSING VALUE INDICATOR IS----

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	$\begin{array}{cccccccccccccccccccccccccccccccccccc$																*
LOCATION: SOUTH	HWEST HOLIDA	YIN	g/m3)						DAT RUN	A FOR DATE	FEB :03/1	2007 4/07					
HR-BEG00 01 HR-END01 02 DAY	02 03 03 04	04 05 05 06	06 07 07 08	08 09 09 10	10 1		13 1 14 1	14 15 15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	AVG
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	464   64   62   223   222   222   223   222   223   222   223   222   223   223   222   222   223   222   223   222   222   223   222   223   222   222   222   222   222   223   222	30     31       28     25       221     21       41     37       26     28       25     26       58     58       38     31       10     14	30 32 20 22 20 32 20 22 20 32 20 22 20 20 20	225307 22482247804 22482247804 22482247804 464832 - 1 122221 31804 222131659112221 31804 22213165912 1122312974387 31480 2213180 122221 31804 2010 122221 31804 103221 1122221 31804 10321 112231 112231 1123311 112331 112331 112331 112331 112331 112331 111	216652772580164391519	20   17     681   20     328   20     224   41     238   289     24   288     284   289     205   206     162   163	161 168 325 399 52 202 20 20	26     42       13     13       16     14       48     29       37     350       45     1319       1319	41 122 149 291 293 209 306 109	13 1216 328 231 31 86	213869484693834 12323224 12	14116600947703862	517206080854572507773725907385 121122323333 1211112 31122 1123	321122819653370430223887019240 122322333 12121122 12 122	23122223333379430049184447251 212222233333379430049184447251	<b>4132223668</b> 133224730710 <b>46</b> 5322 2112223263331121112 211231222	222222323444222211119163533678
AVG 22 22 HOURS 28 28	2 24 24 8 28 28	24 25 28 28	26 2 28 2	7 29 27 7 27 27	7 26 7 27	26 26 27 28	24 28	23 25 28 28	23 28	21 28	19 28	21 28	21 28	20 28	21 28	23 28	24 667
TOTAL HOURS NUMBER OF GOOI NUMBER OF MISS DATA CAPTURE STANDARD DEVIS	SING HOURS= (PERCENT) =	667 H 5 2	nd HIGH H	AGE JRLY VALUE DURLY VALUE PORTED VALU	S = 100	1 ØVAI 6 HIGHES	UES EX	G AVERAGI CEED1300 AGE 103 AVG. 69	н	24HR ØVA IGHES 2nd H	LUES T AVE	EXCEE RAGE	D 365 47	i			

NOTE: MISSING VALUE INDICATOR IS----

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	*	* * *				
LOCATION: SOUTHEAST FENCELINE	MIRANT 1 WSs	(MPH )	DAT RUN	FA FOR FEB 2007 N DATE:03/14/07		
HR-BEG00 01 02 03 04 05 06 HR-END01 02 03 04 05 06 07 DAY		RS(EST) 11 12 13 14 15 16 12 13 14 15 16 17	17 18 19 20 18 19 20 21	21 22 23 22 23 24 AVG		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			
AVG 7.6 7.3 7.4 7.5 7.9 7.9 7. HOURS 28 28 28 28 28 28 28 2	.5 7.6 8.5 10.0 10.2   28 28 28 28 28	10.4 10.1 10.0 10.4 10.7 10.3 28 28 28 28 28 28 28	3 9.3 8.0 8.1 8.5 8 28 28 28 28 28	8.6 8.1 8.1 8.7 28 28 28 672		
NUMBER OF GOOD HOURS = 672 HIGHE NUMBER OF MISSING HOURS = 0 2nd H	IGH HOURLY VALUE = 26 IGH HOURLY VALUE = 26					
NOTE: MISSING VALUE INDICATOR IS						

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*	DATA VALIDATED BY	*
*	ENSR	*
*********	*******************	******

	MONTHLY S Mirant P	UMMARY REPORT	*	*
LOCATION:SOUTHEAST FENCELINE	WDRs	(DEG )	DATA FOR Run date:	FEB 2007 03/14/07
HR-BEGØØ Ø1 Ø2 Ø3 Ø4 Ø5 Ø6 Ø7 HR-ENDØ1 Ø2 Ø3 Ø4 Ø5 Ø6 Ø7 Ø8 DAY	08 09 10	S(EST) 11 12 13 14 15 16 12 13 14 15 16 17	17 18 19 20 21 18 19 20 21 22	22 23 23 24 AVG
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
AVG 237 245 243 241 243 260 256 25 HOURS 28 28 28 28 28 28 28 28 28 2		215     220     218     229     231     237       28     28     28     28     28     28     28	241     234     219     224     221       28     28     28     28     28     28	230 212 234 28 28 672
NUMBER OF MISSING HOURS= 0 2nd HIGH H	AGE = 23 URLY VALUE = 35 OURLY VALUE = 35 PORTED VALUE = 1	53		
NOTE: MISSING VALUE INDICATOR IS				

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*	ENSR	*
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																								1.11 4	UN
										MO	NTHLY	SUMM	ARY R	EPORT							 *				
										М	IRANT	POTO	MAÇ												
L	OCATION	: SOUTH	EAST	FENCE	LINE				SDs				(	DEG	)						DA' RUI	TA FO N DATI	R FEB E:03/:	2007 14/07	
		~ ~ ~	~~	~ ~	~ ~							URS(E													
H	R-BEG00 R-END01 AY	01 02	02 03	03 04	04 05	Ø5 Ø6	06 07	07 08	08 09	09 10	10 11	$\begin{array}{c}11\\12\end{array}$	12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	AVG
A H T	4567890112345678901123456789011234567890122345678901223456789012234567890122345678	31091885038979840990564177773 38 URS	521239354468199083894636 18 11191544681209903894636 18 1468122481699083894636 18 33467 3 2	5130.1884462856412223526899270 98 = 2995444117799137174775396 5.2 137747775526899270 98 =	90.3395226477444678858999977582 11364.4744467885899977552011415619877897 128977552014405619877897	18.9 28 2 T	8.131.997239893043206653445853 38 152113875920099.066196479 92 106119696445853 38 114179 92 1966196479 92 19701141979 92 19701141979 192 19201141979 19201141179 19201141179 1920114111179 1920114111179 19201141111179 1920114111179 1920114111179 1920114111179 1920114111179 1920114111179 1920114111179 1920114111179 1920114111179 1920114111179 1920114111111111111111111111111111111111	8.7.544150290800765816211162491 08 A 211187224995.7.65816211162491 08 A 111519411231271.1.62491 08 A	107.410   8.6419     12212   9.60.19     1202.5   109.5433     1202.971.340   6.65069     1319.8840   29.7835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.977835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.971.13   12.97835     1202.	128.26 128.26 128.26 128.26 128.26 129.16 129.18 129.18 129.18 129.18 129.18 129.18 129.18 120.77 120.07 117.28	$\begin{array}{c} 103.68.08.977.46.62.96.4.536.2.533.71\\ 11.97.0.7.4.6.2.96.4.536.2.533.71\\ 12.1.39.03.6.973.4.3.5.62\\ 12.4.33.71\\ 12.4.3$	1257.85.6893999.6488729.0634.30 127.308.94.32.32.412.185.966 112.308.94.32.32.412.185.966 17.2 119.6 17.2 19.6 19.9 9.9	111121223514628356557489080 8 11122124780440162227165570 9 1112213161162123 1	1553996926750255687316 19111197892668432223 107892668432223 107892668432223 107892668432223 107892668432223 107892668432223	136.7.191.3497675252236341557 3 1118421.84977675252236341557 3 1122988722086341557 3 1123988720887208634157 3 11304 6	125.084887862061848825170152     4       125.00397789261848825170152     4       11101     31     1239247073431554       12311454     1	169.97.50 99.99.199.615.28942.577.50 127.12.89.87.8.87.11.182.28 171.12.89.87.8.171.182.28 171.12.89.12.128 11.182.28 11.182.28 12.128	4074838937372493855782578 11117989074676222755 11117989074676222755	40.1	15887222402558960748876883649083 122121258996774887683649083 11788257893649083 1221212589677488257893668 11788257893649083		140783827106532071340759357877 281943711168480528833149 211168480528833149 24551	80891826529406898377044960075 1892182619808809330888222330 154880889330888222330	7991579692349760431057964015 131123532 1119657964015 288632780819657964015 288111	<b>0195284050820451351440803230</b> 22 <b></b>

NUMBER OF GOOD HOURS =	672	HIGHEST HOURLY VALUE =	84.5
NUMBER OF MISSING HOURS=	0	2nd HIGH HOURLY VALUE =	81.4
DATA CAPTURE (PERCENT) =	100.0	MINIMUM REPORTED VALUE=	3.9
STANDARD DEVIATION =	14.7		

NOTE: MISSING VALUE INDICATOR IS----

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* DA'	TA VALIDATED BY	*
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#### MONTHLY SUMMARY REPORT \* MIRANT POTOMAC DATA FOR FEB 2007 RUN DATE:03714707 (DEGF) LOCATION: SOUTHEAST FENCELINE TMP2m HOURS(EST) 10 11 1 11 12 1 20 21 22 23 23 24 10 11 $13 \\ 14$ 16 17 17 18 $\frac{18}{19}$ 19 20 21 22 **0**8 09 09 12 13 14 15 15 16 05 06 06 07 07 HR-BEG00 HR-END01 01 02 02 03 03 04 04 05 Ø8 10 $\begin{array}{c} 36.9 & 31.2 & 31.1 & 31.6 & 31.6 & 31.9 & 32.7 & 32.8 & 32.9 & 33.2 & 32.3 & 31.8 & 32.2 & 33.0 & 33.2 & 33.9 & 34.6 & 35.1 & 34.9 & 35.0 & 34.5 & 33.7 & 33.4 & 33.2 \\ 33.2 & 1.2 & 33.2 & 33.4 & 33.2 & 33.4 & 33.2 & 33.0 & 34.4 & 35.3 & 36.5 & 37.7 & 37.5 & 36.6 & 37.2 & 37.8 \\ 33.2 & 1.3 & 33.4 & 33.2 & 33.6 & 33.2 & 33.6 & 33.2 & 33.9 & 34.6 & 35.1 & 34.9 & 35.0 & 34.5 & 37.7 & 37.5 & 36.6 & 36.1 & 37.3 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.5 & 36.1 & 37.5 & 36.5 & 36.5 & 36.1 & 37.5 & 36.5$ AVG DAY 32.9 35.3 32.8 29.5 18.7 18.7 23.4 22.5 25.6 27.5 10 28.1 34.6 30.5 28.1 12345678901234567 20.2 21.9 27.7 29.3 27.1 44.0 45.5 34.0 32.6 32.5 35.8 42.0 30.6 28 30.0 30.9 28 672 672 TOTAL AVERAGE = HIGHEST HOURLY VALUE = 2nd HIGH HOURLY VALUE = MINIMUM REPORTED VALUE= 30.9 TOTAL HOURS Ξ. 55.4 53.5 NUMBER OF GOOD HOURS = NUMBER OF MISSING HOURS = DATA CAPTURE (PERCENT) = STANDARD DEVIATION = 0 100<u>.</u>0 10.5 8.7 NOTE: MISSING VALUE INDICATOR IS----

2

3

4

5

6 7 8

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*	DATA VALIDATED BY	*
*	ENSR	*
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	MONTHLY SUMM	ARY REPORT	*	*
	MIRANT POTO	MAC	DAT	A FOR FEB 2007
LOCATION:SOUTHEAST FENCELINE	DT2M	(DEGF )	RUN	DATE:03/14/07
HR-BEG00 01 02 03 04 05 06 HR-END01 02 03 04 05 06 07 DAY	HOURS(E 07 08 09 10 11 08 09 10 11 12		7 18 19 20 8 19 20 21	21 22 23 22 23 24 AVG
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
AVG 0.5 0.6 0.6 0.6 0.5 0.4 0.5 HOURS 28 28 28 28 28 28 28 28	0.4 0.2 -0.1 -0.3 -0. 28 28 28 28 28 28	4 -0.5 -0.5 -0.4 -0.2 -0.1 0 3 28 28 28 28 28 28 28	0.2 0.4 0.5 0.6 28 28 28 28 28	0.6 0.6 0.6 0.2 28 28 28 672
NUMBER OF MISSING HOURS= 0 2nd HIG	AVERAGE = 0.2 T HOURLY VALUE = 3.3 GH HOURLY VALUE = 2.7 M REPORTED VALUE = -3.2			
NOTE: MISSING VALUE INDICATOR IS				

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*	DATA VALTDATED	BY *
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										•	THLY			PORT										<b>-</b> -	
LOCAT	ION:S	OUTHE	AST F	ENCEL	INE				vws					PH )							DAT RUN	A FOR DATE	FEB :03/1	2007 4/07	
HR-BE HR-EN Day	GØØ DØ1	01 02	02 03	03 04	04 05	05 06	06 07	07 08	08 09	09 10	HOU 10 11	RS(ES 11 12	T) 12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	AVG
234567891111111112222222	3032737615500160118710140314 -000000000001001100140314	2130656216604 510068808630313 0000000000 000 0000000000000000000	30015206113507 90003511750000	4213559003523191104610350200	4542732081327   811105910261100 00000100000   000000000000000000000	3563626941329142922769931209 	5253424979209132153430851999 9000000000000000000000000000000000	4321536159411 32951531932210 -00000000001 000000000000000000000000	7625549453312166959349242101 	- - - - - - - - - - - - - - - - - - -	80337668572089681726928511115	- - - - - - - - - - - - - - - - - - -	62222256966414597922361864254 900010000000200010000000000000000000000	- - - - - - - - - - - - - - - - - - -	000375777911131982550050148016 	000574875822 478102157757158 000000000000000000000000000000000000	113581787810~208264120766247 	0013536444111 376253125545433 - 0000000110000000000000000000000000000	00000000000000000000000000000000000000	113752202734 951042312610060 -00000000 0000000000000000000000000	312641203518 853184600533034 	- - - - - - - - - - - - - - - - - - -	-0000040441215511156005303042 -00000000010010001000	00000000000000000000000000000000000000	- 000000000000000000000000000000000000
AVG HOURS	0.2 27	0.2 27	0.2 27	0.2 27	0.3 27	0.2 27	0.2 27	0.2 27	0.3 27	0.4 27	0.4 28	0.5 28	0.5 28	0.5 28	0.5 28	0.5 27	0.5 27	0.3 27	0.3 27	0.3 27	0.3 27	0.3 27	0.3 27	0.3 27	Ø.3 653
TOTAL HOURS = 672 TOTAL AVERAGE = 0.3 NUMBER OF GOOD HOURS = 653 HIGHEST HOURLY VALUE = 2.4 NUMBER OF MISSING HOURS= 19 2nd HIGH HOURLY VALUE = 2.3 DATA CAPTURE (PERCENT) = 97.2 MINIMUM REPORTED VALUE= -0.9 STANDARD DEVIATION = 0.4																									
NOTE:	NOTE: MISSING VALUE INDICATOR IS																								

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*	DATA VALIDATED BY	*
*	ENSR	*
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			SUMMARY REPORT POTOMAC		* *				
LOCATION: SOUTHEAST FENCELINE		SW	(%FR )		DATA FOR FEB 2007 RUN DATE:03/14/07				
HR-BEG00 01 02 03 04 HR-END01 02 03 04 05 DAY	05 06 07 06 07 08	HOU 08 09 10 09 10 11	URS(EST) 11 12 13 14 12 13 14 15	15 16 17 18 19 16 17 18 19 20	20 21 22 23 21 22 23 24 AVG				
	1.4   0.4   0.99   9.53     1.1   8.4   10.99   9.53   5.76     1.1   8.4   10.99   9.53   5.77     1.1   1.1.0   0.0.3   1.1.0   0.1.0     1.1.0   0.1.0   0.1.0   0.1.1   1.40   0.0.1     1.1.0   0.1.0   0.1.0   0.1.1   1.40   0.452   1.1.1     1.1.0   0.1.0   0.1.1   1.0.49   0.2.09   0.2.2   1.1.7   9.00   0.0.3   0.0.3   0.1.1   0.1.1   0.1.1   0.0.2   0.2.2   0.2.3   1.1.3   0.0.2   0.2.4   0.1.3   0.1.1   0.1.7   9.2   0.2.2   1.1.7   0.2.4   0.1.3	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c} 1.4 \\ 1.7 \\ 0.5 \\ 0.8 \\$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$				
HOURS 27 27 27 27 27	27 27 27 27	-		21 21 21 21 21 2	27 27 27 27 27 655				
TOTAL HOURS = 672 TOTAL AVERAGE = 1.0 NUMBER OF GOOD HOURS = 653 HIGHEST HOURLY VALUE = 2.8 NUMBER OF MISSING HOURS= 19 2nd HIGH HOURLY VALUE = 2.8 DATA CAPTURE (PERCENT) = 97.2 MINIMUM REPORTED VALUE= 0.1 STANDARD DEVIATION = 0.6									
NOTE: MISSING VALUE INDICAT	R IS								

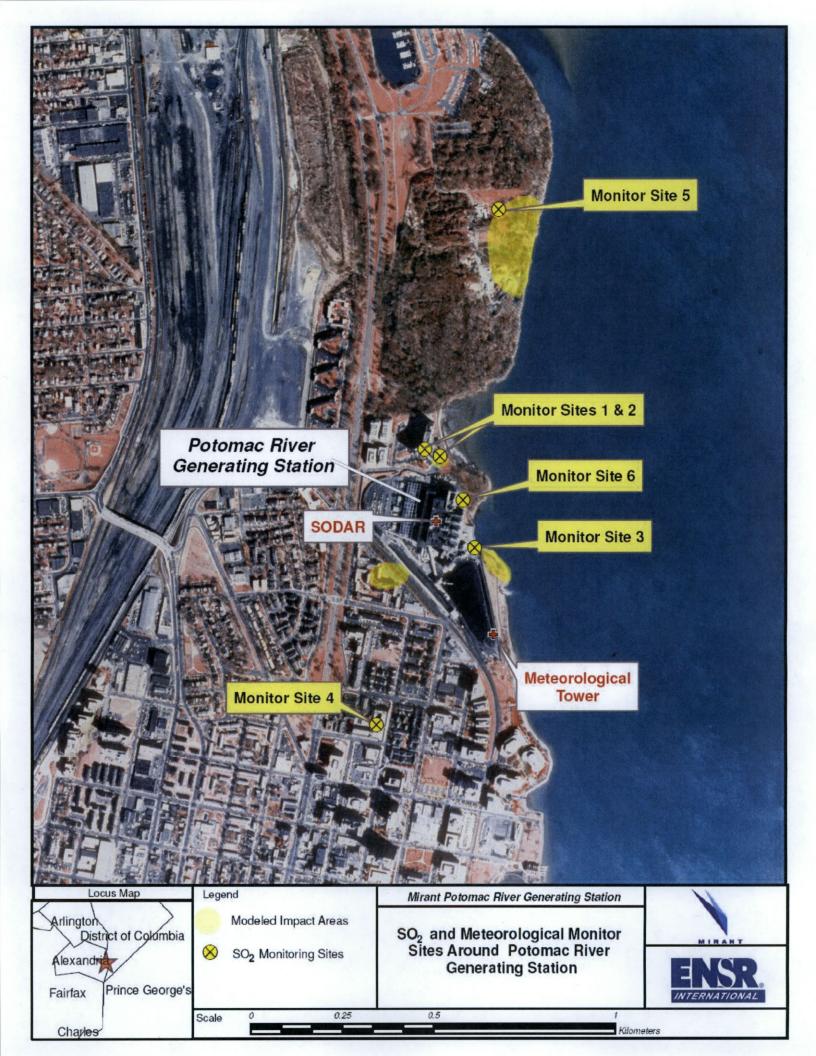
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*	DATA VALIDATED BY	*
*	THED	*
********	0000 *********************************	*******

		SUMMARY REPORT	***		- * -
LOCATION: SOUTHEAST FENCELINE	RTMP	(DEGF )	DA' RUI	TA FOR FEB 2007 N DATE:03/14/07	
HR-BEG00 01 02 03 04 05 HR-END01 02 03 04 05 06 DAY	HO 06 07 08 09 10 07 08 09 10 11	DURS(EST) 11 12 13 14 15 1 12 13 14 15 16 1	6 17 18 19 20 7 18 19 20 21	21 22 23 22 23 24	AVG
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c} 64.7\\ 64.5\\ 64.4\\ 64.8\\ 64.8\\ 64.8\\ 64.8\\ 64.8\\ 64.3\\ 64.2\\ 64.4\\ 63.0\\ 26.2\\ 64.4\\ 63.0\\ 26.2\\ 64.4\\ 64.8\\ 64.8\\ 64.8\\ 64.8\\ 64.8\\ 64.3\\ 64.3\\ 96.3\\ 26.2\\ 64.3\\ 64.3\\ 26.2\\ 26.2\\ 64.3\\ 26.2\\ 26.2\\ 64.3\\ 26.2\\$	$\begin{array}{c} 66.7 & 67.8 & 68.5 & 69.7 & 70.1 & 69.3 \\ 66.7 & 69.4 & 65.5 & 566.2 & 66.4 & 66.6 \\ 66.8 & 65.2 & 66.7 & 65.1 & 66.6 & 67.0 & 68.5 \\ 66.7 & 66.7 & 65.1 & 66.6 & 68.5 & 68.9 \\ 66.7 & 66.2 & 67.3 & 68.5 & 68.9 & 68.8 \\ 66.7 & 66.2 & 67.3 & 68.5 & 68.9 & 68.8 \\ 66.7 & 67.8 & 69.6 & 70.1 & 72.0 & 72.0 \\ 70.1 & 70.2 & 67.3 & 68.5 & 68.1 & 70.2 \\ 66.7 & 67.8 & 69.6 & 70.1 & 72.0 & 69.8 \\ 66.7 & 68.0 & 68.9 & 70.1 & 72.0 & 69.8 \\ 66.7 & 68.0 & 68.9 & 70.1 & 70.6 & 68.9 \\ 66.6 & 64.0 & 67.6 & 69.6 & 64.9 & 64.5 & 64.9 \\ 66.6 & 64.0 & 64.8 & 60.9 & 64.0 & 64.5 & 66.8 \\ 66.2 & 64.0 & 64.9 & 65.6 & 66.7 & 3 & 67.6 \\ 66.2 & 66.7 & 69.8 & 70.3 & 68.7 & 69.8 \\ 66.4.9 & 66.7 & 67.9 & 69.3 & 68.4 & 69.8 \\ 66.5 & 66.8 & 69.8 & 70.3 & 68.7 & 69.8 \\ 66.5 & 66.8 & 69.8 & 70.3 & 68.7 & 69.8 \\ 66.7 & 68.9 & 68.9 & 55.6 & 64.4 & 68.9 \\ 66.6 & 68.9 & 69.3 & 69.8 & 70.3 & 68.7 & 69.8 \\ 66.7 & 68.9 & 68.9 & 55.6 & 64.8 & 64.5 \\ 66.7 & 68.9 & 68.9 & 55.6 & 64.4 & 68.7 \\ 66.7 & 68.9 & 68.4 & 69.3 & 68.8 & 64.5 \\ 66.7 & 66.7 & 68.9 & 56.8 & 4 & 69.8 \\ 66.6 & 64.9 & 66.7 & 69.8 & 70.3 & 68.7 & 69.8 \\ 66.7 & 68.9 & 68.9 & 55.6 & 64.4 & 64.5 \\ 66.7 & 68.9 & 68.4 & 64.5 & 64.3 \\ 67.0 & 68.9 & 69.5 & 568.4 & 64.5 \\ 67.0 & 68.4 & 768.5 & 68.4 & 64.5 \\ 67.7 & 68.5 & 68.4 & 68.4 & 64.5 \\ 75.66 & 74.6 & 64.7 & 68.5 & 68.4 & 64.5 \\ 75.66 & 74.6 & 64.7 & 68.5 & 68.4 & 64.5 \\ 75.66 & 74.6 & 64.7 & 68.8 & 64.8 & 64.5 \\ 75.66 & 74.6 & 64.7 & 68.8 & 64.8 & 64.5 \\ 75.66 & 74.6 & 64.7 & 68.8 & 64.8 & 64.5 \\ 75.66 & 74.6 & 64.7 & 68.8 & 64.8 & 64.8 \\ 75.66 & 74.6 & 64.7 & 68.8 & 64.8 & 64.8 & 64.8 \\ 75.66 & 74.6 & 64.7 & 68.8 & 64.8 & 64.8 & 64.8 \\ 75.66 & 74.6 & 64.7 & 68.8 & 64.8 & 64.8 & 64.8 \\ 75.66 & 74.6 & 64.7 & 68.8 & 64.8 & 64.8 & 64.8 & 64.8 & 64.8 & 64.8 & 64.8 \\ 75.66 & 74.6 & 64.7 & 68.8 & 64.8 &$	$\begin{array}{c} }   \textbf$	049   042     049   042     049   042     049   042     049   042     049   042     049   042     049   042     049   042     049   042     049   042     0649   042     06413   0642     06413   0643     065517   0643     065517   0643     065517   0643     065517   0643     065517   0643     065517   0643     065517   0643     065517   0643     065517   0643     06439   06643     065337   06643     06439   06643     06439   06643     06439   06643     065537   06643     066537   06643     0665592   06643	66666666666666666666666666666666666666
AVG 64.7 64.6 64.5 64.3 64.3 64. HOURS 28 28 28 28 28 28 2	2 64.2 64.1 64.3 64.7 65.5 8 28 28 28 28 28 28	5 66.2 66.5 67.3 68.0 68.3 68 3 28 28 28 28 28 28	8.0 67.1 66.3 65.9 65.4 28 28 28 28 28 28	65.2 64.9 65.0 28 28 28 28	65.6 672
TOTAL HOURS = 672 NUMBER OF GOOD HOURS = 672 NUMBER OF MISSING HOURS = 0 DATA CAPTURE (PERCENT) = 100.0 STANDARD DEVIATION = 2.1	HIGHEST HOURLY VALUE = 7 2nd HIGH HOURLY VALUE = 7	65.6 72.1 72.0 60.7			
NOTE: MISSING VALUE INDICATOR IS-					

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*	ENSR	*
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# Appendix F

Satellite View of the Ambient Air Quality and Meteorological Network



### **U.S. Locations**

AK, Anchorage (907) 561-5700

AL, Birmingham (205) 980-0054

AL, Florence (256) 767-1210

CA, Alameda (510) 748-6700

CA, Camarillo (805) 388-3775

CA, Orange (714) 973-9740

CA, Sacramento (916) 362-7100

CO, Ft. Collins (970) 493-8878

CO, Ft. Collins Tox Lab. (970) 416-0916

CT, Stamford (203) 323-6620

CT, Willington (860) 429-5323

FL, St. Petersburg (727) 577-5430

FL, Tallahassee (850) 385-5006

GA, Norcross (770) 381-1836

IL, Chicago (630) 836-1700

IL, Collinsville (618) 344-1545

LA, Baton Rouge (225) 751-3012

MA, Harvard Air Lab. (978) 772-2345

MA, Sagamore Beach (508) 888-3900

MA, Westford (978) 589-3000

MA, Woods Hole (508) 457-7900

MD, Columbia (410) 884-9280

ME, Portland (207) 773-9501

MI, Detroit (269) 385-4245

MN, Minneapolis (952) 924-0117

NC, Charlotte (704) 529-1755

NC, Raleigh (919) 872-6600

NH, Belmont (603) 524-8866

NJ, Piscataway (732) 981-0200

NY, Albany (518) 453-6444

NY, Rochester (585) 381-2210

NY, Syracuse (315) 432-0506

NY, Syracuse Air Lab. (315) 432-0506

OH, Cincinnati (513) 772-7800

PA, Langhorne (215) 757-4900

PA, Pittsburgh (412) 261-2910

RI, Providence (401) 274-5685

SC, Columbia (803) 216-0003 TX, Dallas (972) 509-2250

TX, Houston (713) 520-9900

TX, San Antonio (210) 296-2125

VA, Chesapeake (757) 312-0063

VA, Glen Allen (804) 290-7920

WA, Redmond (425) 881-7700

WI, Milwaukee (262) 523-2040

### Headquarters MA, Westford (978) 589-3000

### Worldwide Locations

Azerbaijan Belgium Bolivia Brazil China England France Germany Ireland Italy Japan Malaysia Netherlands Philippines Scotland Singapore Thailand Turkey Venezuela

www.ensr.aecom.com

### About ENSR

ENSR, an AECOM company, is a leading worldwide environmental services firm. Founded in 1968, ENSR serves industrial companies and government agencies with consulting, engineering, remediation, and environmental health and safety solutions. ENSR is a recipient of the BP HSSE Diamond Award, Textron Environmental Remediation Partner in Excellence Award, and Environmental Business Journal awards. As an AECOM company, ENSR is part of a global design and management company with 24,000 employees worldwide serving the transportation, facilities, and environmental markets.

#### **ENSR Locations**

Azerbaijan

Belgium

Bolivia

Brazil

China

England

France

Ireland

Japan

Malaysia

Scotland

Netherlands Philippines

Italy

Germany

Alabama Alaska California Colorado Connecticut Florida Georgia Illinois Louisiana Maine Maryland Massachusetts Michigan Minnesota New Hampshire New Jersey New York North Carolina Ohio Pennsylvania Rhode Island South Carolina Texas Virginia Washington

Wisconsin

Singapore Thailand Turkey Venezuela Headquarters

Westford Massachusetts USA