



AIR SCIENCES INC.

DENVER • PORTLAND

**Baseline
Meteorological,
Upper Air, and Air
Quality Data Report
Resolution Copper
Mining Project
January 1 - March 31, 2015**

PREPARED FOR:
RESOLUTION COPPER
A MEMBER OF RIO TINTO
GROUP

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1.0 INTRODUCTION

This report summarizes the meteorological, upper air, nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), and particulate matter (PM) data collected at the Resolution Copper Project near Superior, Arizona for the first quarter, January 1 – March 31, 2015. Monitoring was performed in accordance with the *Resolution Copper Mining Monitoring Plan, November 2011* (approved by the Pinal County Air Quality Control District [PCAQCD] on November 15, 2011).

Resolution Copper Mining LLC (RCML) has implemented a meteorological and air quality monitoring program to support several efforts during the pre-feasibility and other mine development phases: environmental assessments, impact analyses, and documents required by the National Environmental Policy Act (NEPA); meteorological and air quality data to be processed and used as input for AERMOD (American Meteorological Society/Environmental Protection Agency Regulatory Model) dispersion modeling; and air quality baseline data and AERMOD analyses to be used to support RCML's application to the PCAQCD for air permit(s).

1.1 Location

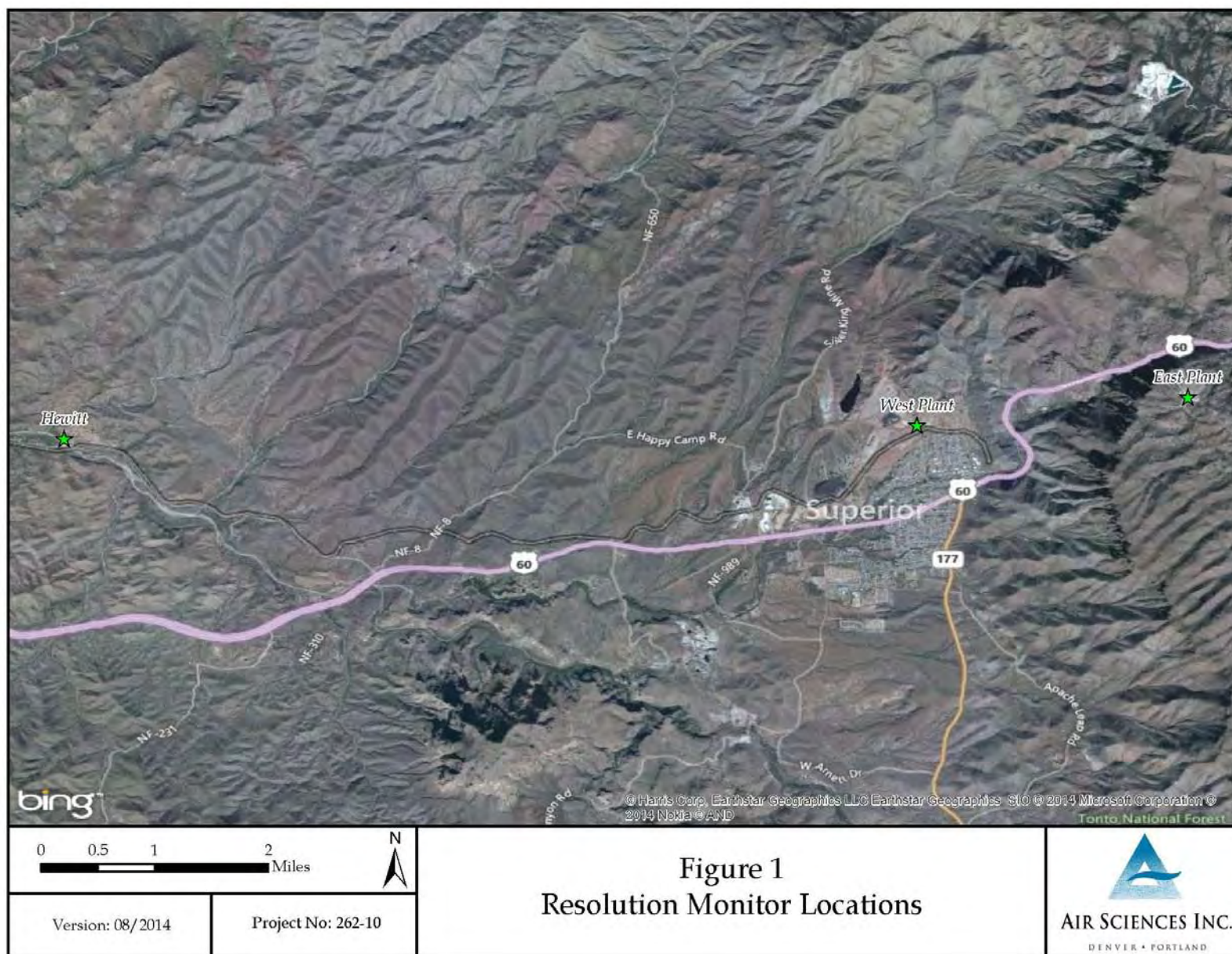
The Resolution Copper Project is located near Superior, Arizona. Currently there are three monitoring stations. The East Plant station is located at the main project site, east of Superior. The West Plant station is located at RCML's facilities directly north of Superior, Arizona. The Hewitt station is located approximately six miles west of Superior, Arizona. The topography ranges from hilly to mountainous.

The monitoring station locations are shown in Figure 1 and listed by coordinates in Table 1.

Table 1. Monitoring Station Locations

Station	Location	Latitude (Deg)	Longitude (Deg)	Elevation (ft)	Method of Determination
East Plant	S32 T1S R13E	33.3030	-111.0676	4,199	GPS
West Plant	S35 T1S R12E	33.2994	-111.1021	2,949	GPS
Hewitt Meteorological	S35 T1S R11E	33.2978	-111.2109	2,235	GPS
Hewitt SoDAR	S35 T1S R11E	33.2981	-111.2114	2,236	GPS

Figure 1. Resolution Monitoring Stations Locations



1.2 Monitoring Program Description

Meteorological sensors and air quality instrumentation at the East Plant and West Plant stations are mounted on 10-meter, open-lattice towers or housed in climate-controlled insulated shelters.

Meteorological sensors at the Hewitt station are mounted on a 20-meter, open-lattice tower, and the SoDAR is housed within a weatherproof enclosure. Instrumentation for all three sites are listed by height, from ground level, in Table 2.

Table 2. Sensors and Heights

		Height (m)	East Plant	West Plant	Hewitt
AERMOD Meteorological Data	Horizontal wind speed (meters per second [m/s])	20			✓
	Horizontal wind direction (degrees [°])	20			✓
	Horizontal wind direction standard deviation (sigma theta)	20			✓
	Horizontal wind speed (meters per second [m/s])	10	✓	✓	✓
	Horizontal wind direction (degrees [°])	10	✓	✓	✓
	Horizontal wind direction standard deviation (sigma theta)	10	✓	✓	✓
	Air temperature (degrees Celsius [°C])	2	✓	✓	✓
	Vertical temperature difference (ΔT , Delta T, [°C])	2,10	✓	✓	✓
	Relative humidity (percent [%])	2	✓	✓	✓
	Solar radiation (watts per square meter [W/m ²])	2	✓	✓	✓
	Barometric pressure (millimeters of mercury [mmHg])	1	✓	✓	✓
	Precipitation (inches [in])	Ground	✓	✓	
Upper -Air	Wind speed by vector component (u,v,w; [m/s])	1			✓
	Wind direction by sub hourly scalar mean (degrees [°])	1			✓
	Standard deviation of vector component (u, v, w)	1			✓
Ambient Air Data	FEM* Particulate matter less than 10 microns (PM ₁₀)	2,3	✓	✓	
	FEM* Particulate matter less than 2.5 microns (PM _{2.5})	2,3	✓	✓	
	Sulfur dioxide (SO ₂)	3	✓		
	Ozone (O ₃)	3	✓		
	Nitrogen dioxide (NO ₂)	3	✓		

*Federal Equivalent Method

1.2.1 Meteorological and Upper Air Data

Meteorological data are recorded by a digital data acquisition systems equipped with broadband modems for data transfer. The meteorological parameters are sampled on-site at one-second intervals and are digitally processed into 15-minute averages. The 15-minute averages are transmitted to Air Sciences Inc. (Air Sciences) for quality assurance checks and are used as input for the calculation of one-hour averages.

Upper-air data are computed and recorded as 15-minute averages using the SoDAR computer and internally programmed algorithms. These averages are temporarily stored on the SoDAR computer and securely transmitted every 24 hours via cellular broadband Internet, to the Air Sciences server.

Appendix A lists hourly meteorological and upper-air data from January 1 through March 31, 2015.

Meteorological and upper-air parameters are collected in support of air quality data. All sensors are audited and data undergo quality control procedures according to the guidelines outlined in the Quality Assurance Project Plan.

1.2.2 NO₂ Data

NO₂ is measured at the East Plant using the Teledyne T200 Chemiluminescence NO₂ Analyzer, which holds an Environmental Protection Agency (EPA) equivalency designation as a Reference Method (RFNA-1194-099). This instrument is designed to measure oxides of nitrogen (NO_x) (with nitrogen dioxide, NO₂, as an indicator) at trace levels in ambient air. The instrument is operated continuously to collect hourly NO, NO₂, and NO_x concentrations. Data are transferred via FTP script every hour to the Air Sciences server and made available to authorized persons via a data web-portal. Appendix C lists hourly NO₂ data for the East Plant from January 1 through March 31, 2015.

Level 1 zero and span calibrations and Level 2 zero and span verifications are conducted by the site operator every two weeks or as needed. Second-party audits, adjustments, and general maintenance on the NO₂ monitor are performed according to the guidelines outlined in the Quality Assurance Project Plan.

1.2.3 SO₂ Data

SO₂ is measured at the East Plant using the Teledyne T100 UV Fluorescence SO₂ Analyzer, which holds an EPA designation as an Automated Equivalent Method (EQSA-0495-100). The instrument is operated continuously to collect hourly SO₂ concentrations. Data are transferred via FTP script every hour to the Air Sciences server and made available to authorized persons via a data web-portal. Appendix C lists hourly SO₂ data for the East Plant from January 1 through March 31, 2015.

Level 1 zero and span calibrations and Level 2 zero and span verifications are conducted by the site operator every two weeks or as needed. Second-party audits, adjustments, and general maintenance on the SO₂ monitor are performed according to the guidelines outlined in the Quality Assurance Project Plan.

1.2.4 O₃ Data

O₃ is measured at the East Plant using the Teledyne T400 UV Absorption O₃ Analyzer, which holds an EPA designation as an Automated Equivalent Method (EQOA-0992-087). The instrument is operated continuously to collect hourly O₃ concentrations. Data are transferred via FTP script every hour to the

Air Sciences server and made available to authorized persons via a data web-portal. Appendix C lists hourly and rolling 8-hour average O₃ data for the East Plant from January 1 through March 31, 2015.

Level 1 zero and span calibrations and Level 2 zero and span verifications are conducted by the site operator every two weeks or as needed. Second-party audits, adjustments, and general maintenance on the O₃ monitor are performed according to the guidelines outlined in the Quality Assurance Project Plan.

1.2.5 PM Data

PM₁₀ and PM_{2.5} are measured at both the East Plant and West Plant using Met One Instruments' Beta Attenuation Monitors (BAM). At each site, one BAM is configured as a PM_{2.5} Federal Equivalent Method (FEM), which holds the EPA designation (EQPM-0308-170), and the other BAM is configured as a PM₁₀ FEM, which holds the EPA designation (EQPM-0798-122). The instruments are operated continuously to collect hourly PM_{2.5} and PM₁₀ concentrations. Data are transferred via FTP script every hour to the Air Sciences server and made available to authorized persons via a data web-portal. Appendix B lists hourly PM_{2.5} and PM₁₀ data from January 1 through March 31, 2015.

The accuracy of the monitor is assessed through monthly audits of the flow rate by using a certified flow transfer standard.

Second-party audits, adjustments, and general maintenance on the PM monitors are performed according to the guidelines outlined in the Quality Assurance Project Plan.

2.0 DATA RECOVERY RATES

Data recovery rates for all parameters are presented in Table 3. Meteorological data recoveries are calculated by dividing the amount of valid hourly averages by the available hourly periods in the quarter. Air quality and particulate data recoveries are calculated by dividing the amount of valid 24-hour averages (for PM₁₀, PM_{2.5}), valid 24-hour maximum value (for SO₂, NO₂), or valid daily rolling 8-hour maximum (O₃) values by the number of days in the quarter. Particulate and air quality 24-hour averages or maximums are valid if greater than 75 percent of the hourly readings are valid for that day (at least 18 out of 24 hours).

**Table 3. Data Recovery Rates, East Plant and West Plant
January 1 – March 31, 2015
(percent)**

Parameter*	East Plant		West Plant		Hewitt		Minimum Required Recovery Rate
	Recorded Observations	Recovery Rate	Recorded Observations	Recovery Rate	Recorded Observations	Recovery Rate	
Meteorological							
Wind speed (10 m)	2,157	99.9	2,157	99.9	2,150	99.5	90
Wind direction (10 m)	2,157	99.9	2,157	99.9	2,150	99.5	90
Temperature (2 m)	2,157	99.9	2,157	99.9	2,150	99.5	90
Delta temperature	2,157	99.9	2,157	99.9	2,150	99.5	90
Relative humidity	2,157	99.9	2,157	99.9	2,150	99.5	90
Barometric pressure	2,157	99.9	2,157	99.9	2,150	99.5	90
Precipitation	2,157	99.9	2,157	99.9	2,150	99.5	90
Solar radiation	2,157	99.9	2,157	99.9	2,150	99.5	90
SoDAR							
Wind speed (3 - 190 m)					2,110 - 2,135	96.6 - 97.8	90
Wind direction (3 - 190 m)					2,110 - 2,135	96.6 - 97.8	90
NO ₂	83	92.2	--	--			75
O ₃	89	98.9	--	--			75
SO ₂	89	98.9	--	--			75
PM ₁₀	88	97.8	90	100			75
PM _{2.5}	88	97.8	89	98.9			75

*Meteorological parameters are observed hourly (2,160 hours in this period).

NO₂, O₃, SO₂, and PM parameters are observed every 24 hours (90 days in this period).

2.1 Data Loss

2.1.1 Meteorological Data Loss

2.1.1.1 East Plant

An audit performed by Air Sciences on January 27, 2015 resulted in two invalid hours of data. One additional hour of data from March 8, 2015 is missing.

2.1.1.2 West Plant

An audit performed by Air Sciences on January 26, 2015 resulted in two invalid hours of data. One additional hour of data from March 8, 2015 is missing.

2.1.2 NO₂ Data Loss

NO₂ 24-hour maximum data were invalidated for January 27, 2015, due to maintenance, and an audit performed by Air Sciences, and from March 20, 2015 through March 25, 2015 due to an out of tolerance Level 1 zero/span check.

Additional invalid hourly NO₂ data were due to maintenance, Level 1 and Level 2 zero/span checks.

2.1.3 SO₂ Data Loss

SO₂ 24-hour maximum data were invalidated for January 27, 2015, due to maintenance, and an audit performed by Air Sciences.

Additional invalid hourly SO₂ data were due to Level 1 and Level 2 zero/span checks.

2.1.4 O₃ Data Loss

O₃ rolling 8-hour maximum data were invalidated for January 27, 2015, due to maintenance, and an audit performed by Air Sciences.

Additional invalid hourly O₃ data were due to Level 1 and Level 2 zero/span checks.

2.1.5 PM Data Loss

2.1.5.1 East Plant

Hourly and 24-hour average PM₁₀ data were invalidated for March 1 and March 2, 2015 due to a tape break error. Three hours of PM₁₀ data were invalidated on January 27, 2015, due to maintenance and an audit performed by Air Sciences.

Hourly and 24-hour average PM_{2.5} data were invalidated for March 1 and March 2, 2015 due to a tape break error. Three hours of PM_{2.5} data were invalidated on January 27, 2015, due to maintenance and an audit performed by Air Sciences.

Additional invalid hourly PM data at the East Plant were due to monthly flow verifications, regularly scheduled maintenance, power outages, and internal instrument errors.

2.1.5.2 West Plant

No 24-hour average PM₁₀ data were invalidated for this quarter. Two hours of PM₁₀ data were invalidated on January 26, 2015, due to maintenance and an audit performed by Air Sciences.

Hourly and 24-hour average PM_{2.5} data were invalidated on March 26, 2015, due to a tape break error. Two hours of PM_{2.5} data were invalidated on January 26, 2015, due to maintenance and an audit performed by Air Sciences.

Additional invalid hourly PM data at the West Plant were due to monthly flow verifications, regularly scheduled maintenance, power outages, and internal instrument errors.

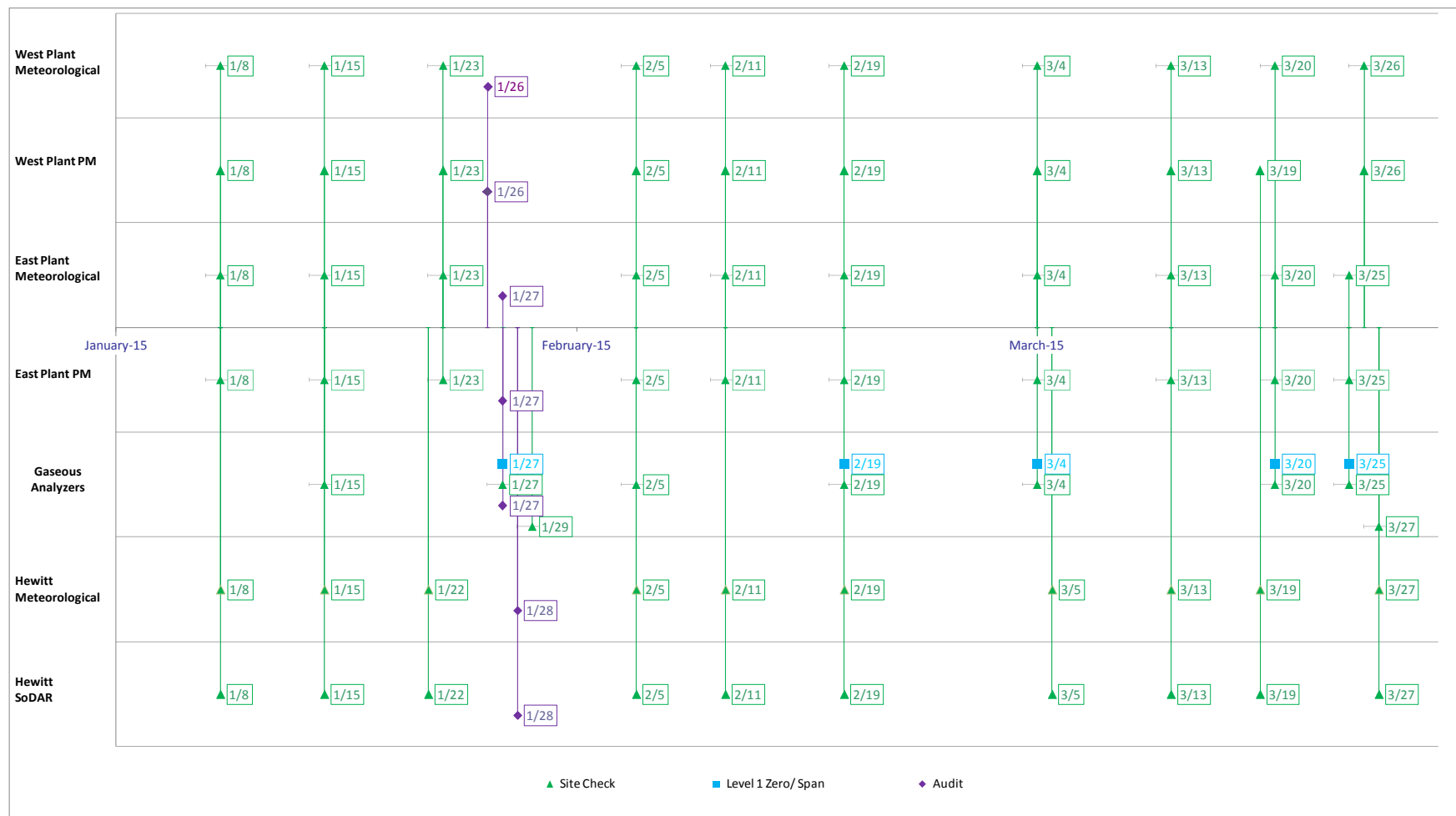
2.2 Quality Control

Quality assurance, equipment calibration, and audit procedures are conducted in accordance with the following documents:

- Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Quality Monitoring Program (EPA-454/B-13-003, May 2013)
- Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements (EPA-454/B-08-002, March 2008)
- Transfer Standards for the Calibration of Ambient Air Monitoring Analyzers for Ozone (EPA-454/B-13-004, October 2013)
- Code of Federal Regulations (40 CFR Parts 50 and 58)
- Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD) (EPA-450/4-87-007, May 1987)
- Meteorological Monitoring Guidance for Regulatory Modeling Applications (EPA-454/R-99-005, February 2000)

Audits and/or calibrations of meteorological instrumentation are required every six months. Audits of the meteorological stations occurred on January 26, and January 27, 2015. Audits and/or calibrations of the ambient air quality monitors and analyzers are required every three months. At the East and West Plant, Air Sciences performed audits of the particulate monitors on January 26, and January 27, 2015, and audits of the air quality analyzers on January 27, 2015. Site checks on the meteorological sensors, particulate instruments, and gas analyzers continue to be conducted on a weekly basis. Copies of the audit/calibration report, flow verifications, and site check forms can be found in Appendices D-I.

Figure 2. Dates of Site Checks, Audits, and Calibrations
January 1- March 31, 2015



3.0 METEOROLOGICAL DATA SUMMARY AND DISCUSSION

3.1 Meteorological Data Summary

Meteorological and upper-air data from the first quarter have been compiled and summarized in graphical and tabular form. Meteorological and upper-air summary sheets (Figure 3 through Figure 4) are comprised of the following:

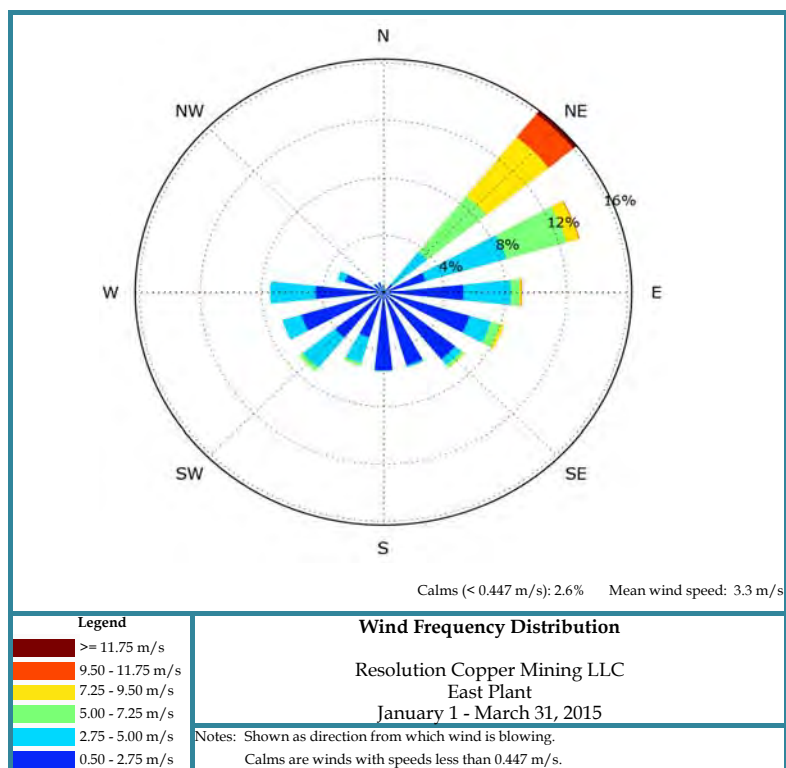
Wind Rose – Graphically depicts the percentage of winds that come from each of the 16 directions for the reported period. Wind speeds are divided into six subcategories ranging from less than 0.5 m/s (the measurement threshold of the instrument) to greater than 11.75 m/s.

Wind Frequency Table – The Wind Frequency Table shows the percentage of occurrence of winds for each of the 16 directions that occur in each of the six Wind Speed Class Intervals.

Meteorology Charts – Graphically summarize recorded hourly meteorological parameters by month. Chart types include stock-ticker charts (with high, low, and average hourly values for each month) and bar charts.

Figure 3: East Plant Meteorological Data Summary

Meteorological Data: January 1 - March 31, 2015



Direction	Speed Class Intervals (m/s) (percent of occurrence)						All	Mean Speed
	0.5 < 1.5	1.5 < 3	3 < 5	5 < 7	7 < 10	>= 10		
N	0.2	0.3	0.0	0.0	0.0	0.0	0.6	1.7
NNE	0.1	0.1	0.0	0.1	0.0	0.0	0.4	3.4
NE	0.3	0.6	2.7	4.1	6.9	1.6	16.3	6.9
ENE	0.7	2.5	5.2	3.8	1.3	0.0	13.4	4.4
E	1.6	4.0	2.7	0.6	0.1	0.0	9.1	2.9
ESE	2.7	3.4	1.2	0.6	0.2	0.0	8.2	2.5
SE	3.7	2.6	0.3	0.2	0.1	0.0	6.8	1.8
SSE	3.8	1.6	0.0	0.0	0.0	0.0	5.5	1.3
S	3.9	1.6	0.0	0.0	0.0	0.0	5.5	1.2
SSW	1.6	2.0	1.5	0.2	0.0	0.0	5.4	2.5
SW	0.7	4.2	1.8	0.3	0.0	0.0	7.1	2.7
WSW	1.3	4.9	0.7	0.0	0.0	0.0	6.9	2.1
W	1.2	3.9	2.3	0.0	0.0	0.0	7.4	2.5
WNW	1.1	1.8	0.3	0.0	0.0	0.0	3.2	1.9
NW	0.4	0.4	0.1	0.0	0.0	0.0	0.8	1.7
NNW	0.4	0.3	0.0	0.0	0.0	0.0	0.8	1.6
All	23.8	34.2	19.1	9.9	8.7	1.6	97.4	3.3

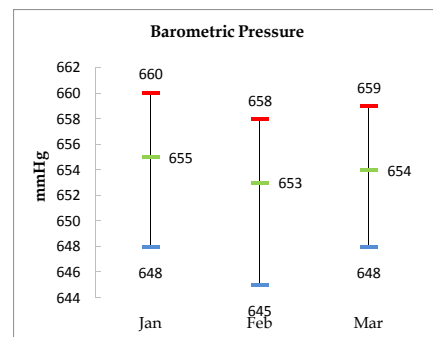
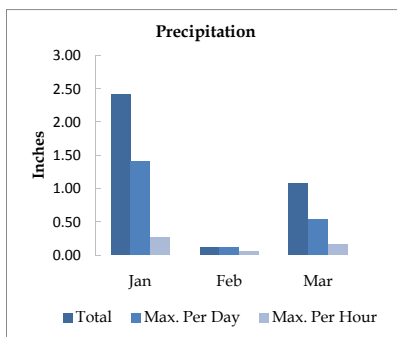
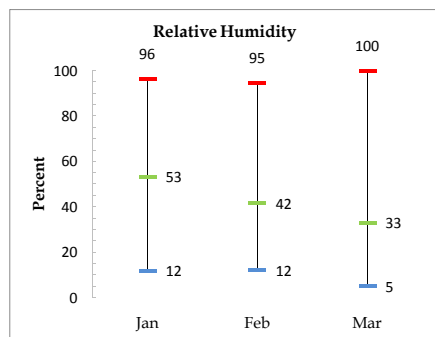
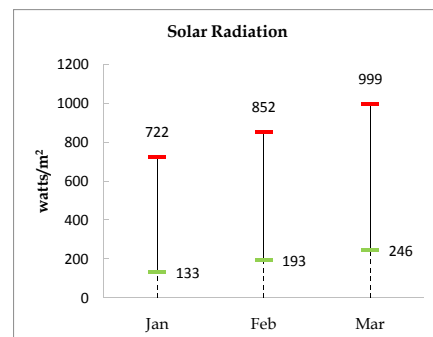
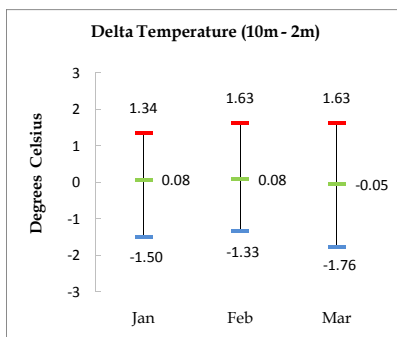
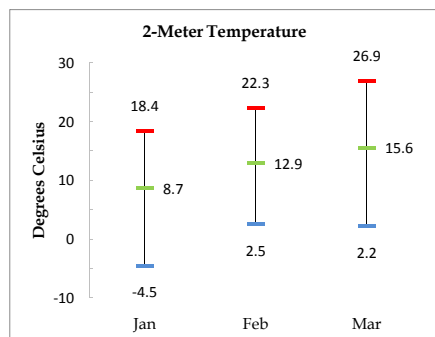
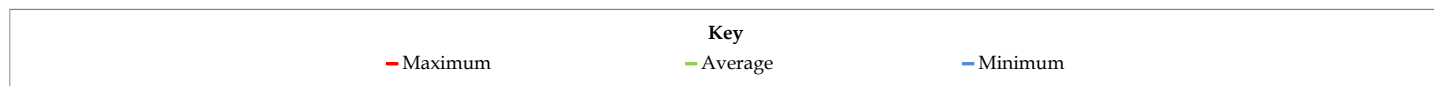
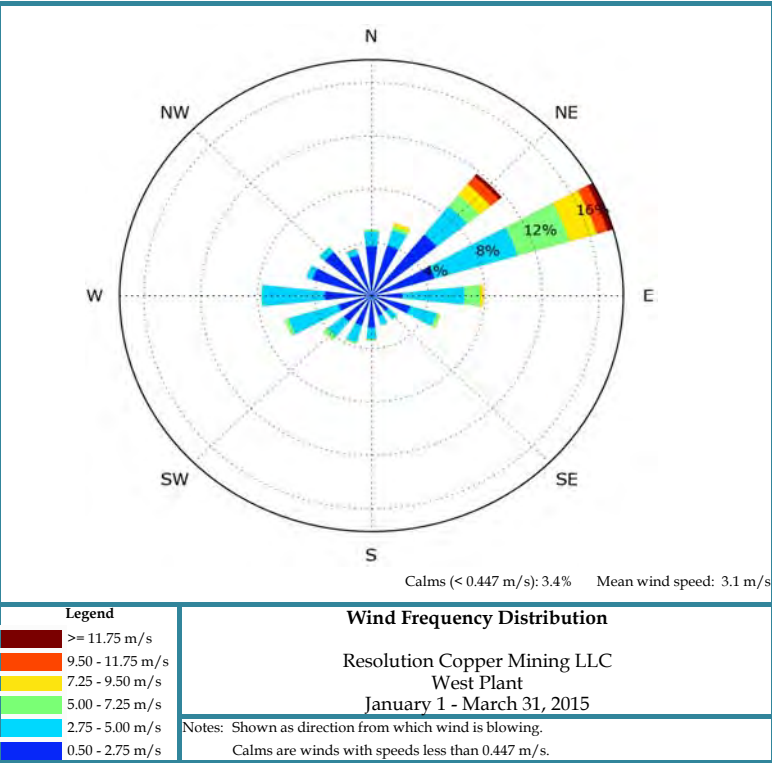


Figure 4: West Plant Meteorological Data Summary

Meteorological Data: January 1 - March 31, 2015



Direction	Speed Class Intervals (m/s) (percent of occurrence)						All	Mean Speed
	0.5 <1.5	1.5 <3	3 <5	5 <7	7 <10	>=10		
N	3.0	1.0	0.8	0.1	0.0	0.0	5.0	1.7
NNE	2.8	1.4	0.9	0.3	0.3	0.0	5.7	2.3
NE	2.6	3.6	2.4	1.1	1.3	0.7	11.8	4.0
ENE	1.8	3.5	5.4	3.5	2.6	0.9	17.7	4.8
E	0.8	1.8	4.0	1.1	0.3	0.0	7.9	3.6
ESE	0.9	2.3	1.5	0.2	0.0	0.0	5.1	2.7
SE	0.5	1.4	0.4	0.0	0.0	0.0	2.4	2.3
SSE	0.8	0.9	0.6	0.0	0.0	0.0	2.4	2.3
S	1.2	1.4	0.7	0.0	0.0	0.0	3.4	2.2
SSW	1.2	1.6	0.9	0.1	0.0	0.0	3.8	2.4
SW	0.7	1.9	1.3	0.3	0.0	0.0	4.3	2.7
WSW	0.7	2.0	3.3	0.3	0.0	0.0	6.4	3.1
W	0.8	3.0	3.8	0.0	0.0	0.0	7.7	2.9
WNW	2.3	2.1	0.3	0.0	0.0	0.0	4.8	1.6
NW	3.3	1.1	0.2	0.0	0.0	0.0	4.7	1.4
NNW	2.9	0.4	0.4	0.0	0.0	0.0	3.7	1.5
All	26.4	29.5	27.1	7.2	4.6	1.7	96.6	3.1

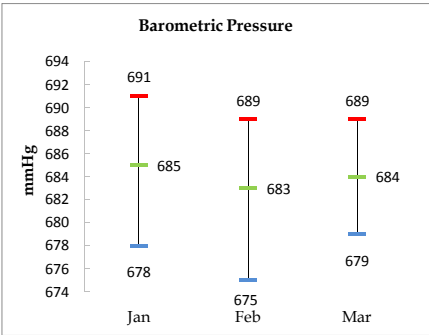
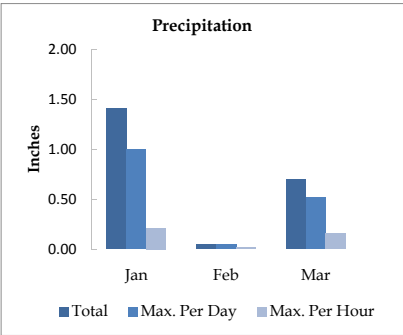
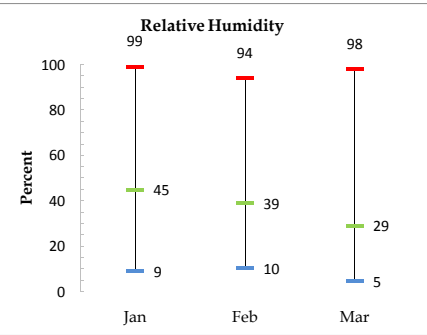
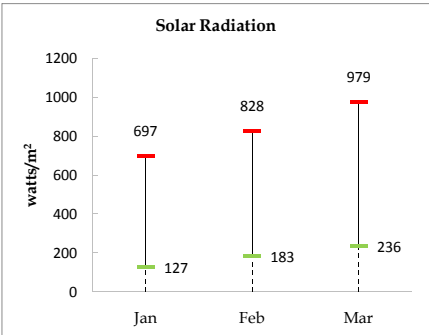
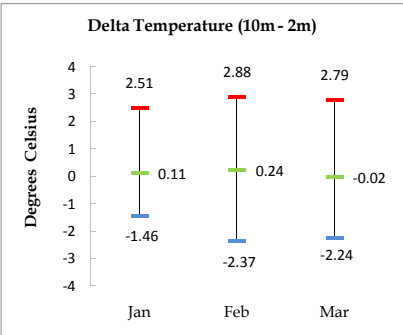
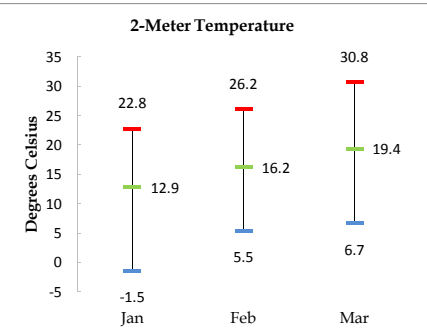
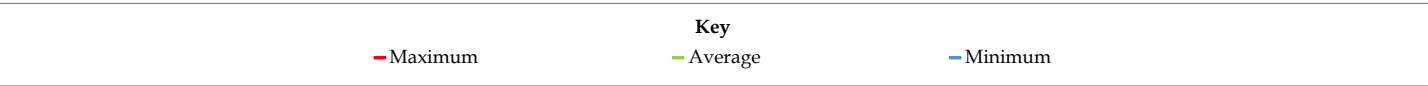
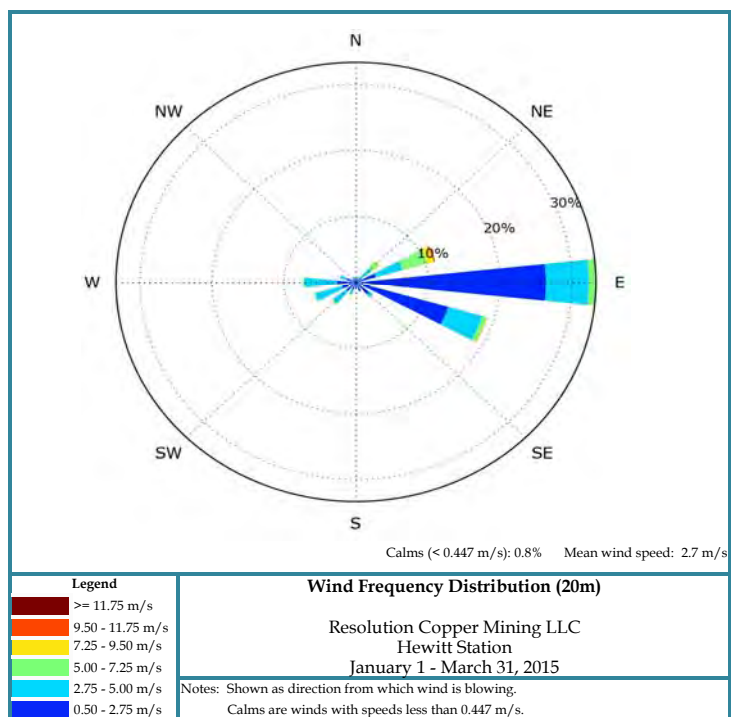


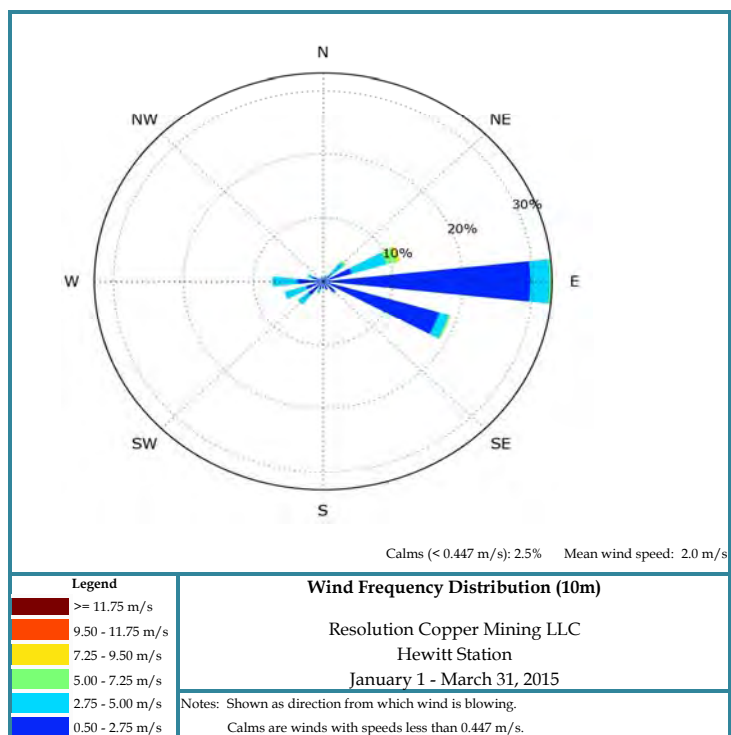
Figure 5: Hewitt Station Meteorological Data Summary

Meteorological Data: January 1 - March 31, 2015



20 Meters

Direction	Speed Class Intervals (m/s) (percent of occurrence)						All	Mean Speed
	0.5 <1.5	1.5 <3	3 <5	5 <7	7 <10	>=10		
N	0.3	0.4	0.0	0.0	0.0	0.0	0.8	1.9
NNE	0.3	0.4	0.2	0.1	0.0	0.0	1.0	2.4
NE	0.4	0.6	1.7	1.4	0.1	0.0	4.2	4.1
ENE	1.6	1.5	3.6	3.5	1.1	0.1	11.5	4.4
E	10.8	16.5	5.1	0.8	0.2	0.0	33.3	2.1
ESE	6.1	8.5	3.7	0.5	0.2	0.0	19.0	2.3
SE	1.4	1.2	0.4	0.0	0.0	0.0	3.0	1.9
SSE	0.9	0.5	0.1	0.0	0.0	0.0	1.5	1.6
S	0.4	0.6	0.1	0.1	0.0	0.0	1.2	2.1
SSW	0.4	1.0	0.6	0.1	0.0	0.0	2.0	2.6
SW	0.4	1.6	2.0	0.3	0.0	0.0	4.4	3.1
WSW	0.5	1.8	3.7	0.0	0.0	0.0	6.0	3.0
W	0.5	3.0	3.7	0.1	0.0	0.0	7.3	3.1
WNW	0.6	1.0	0.8	0.0	0.0	0.0	2.3	2.4
NW	0.3	0.3	0.0	0.0	0.0	0.0	0.7	1.7
NNW	0.4	0.4	0.1	0.0	0.0	0.0	0.9	1.9
All	25.3	39.2	26.0	7.0	1.6	0.1	99.2	2.7

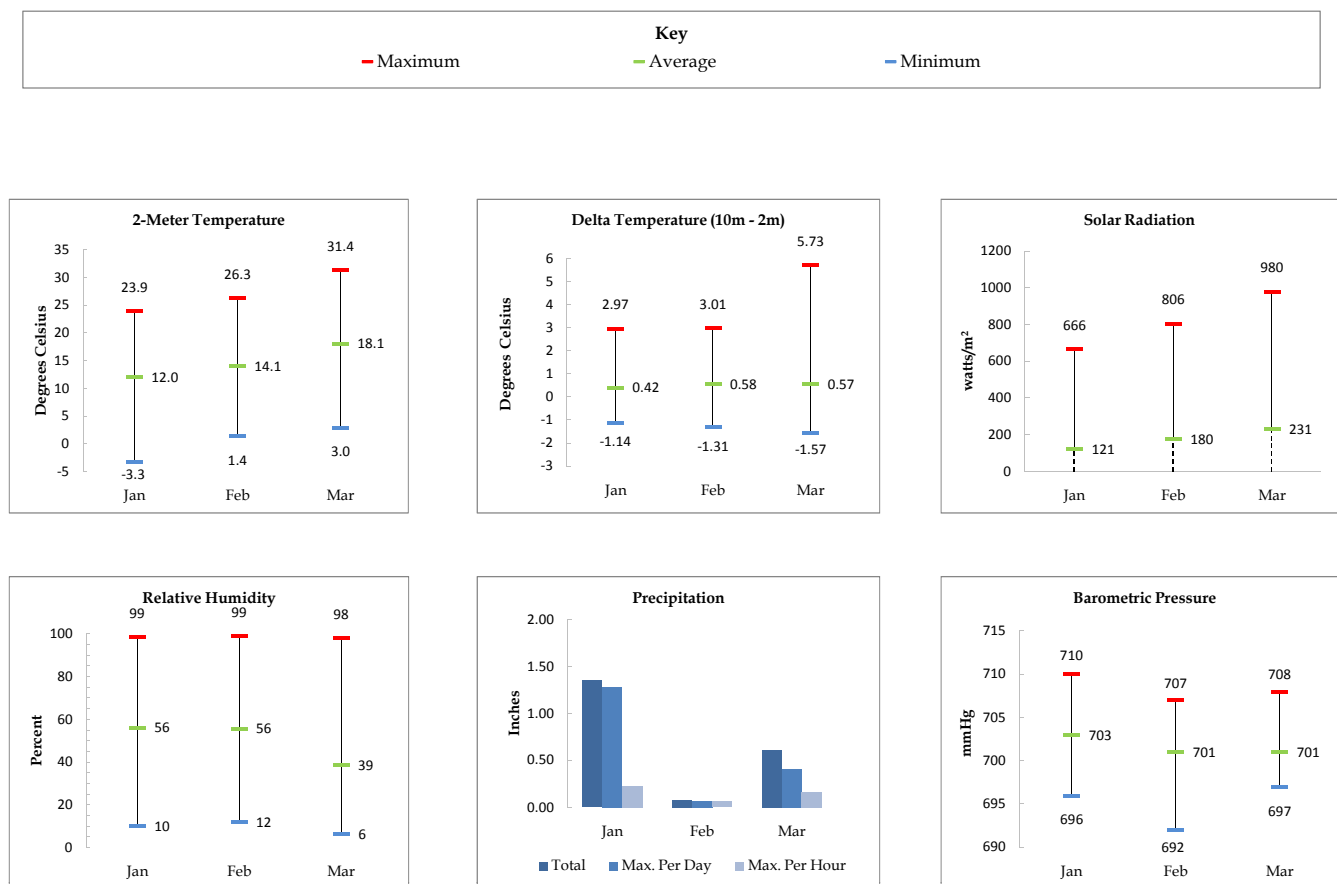


10 Meters

Direction	Speed Class Intervals (m/s) (percent of occurrence)						All	Mean Speed
	0.5 <1.5	1.5 <3	3 <5	5 <7	7 <10	>=10		
N	0.3	0.3	0.0	0.0	0.0	0.0	0.6	1.8
NNE	0.5	0.4	0.2	0.0	0.0	0.0	1.1	1.8
NE	0.5	1.2	2.0	0.5	0.0	0.0	4.2	3.3
ENE	2.0	2.8	4.7	1.5	0.5	0.0	11.4	3.5
E	24.6	5.8	2.0	0.3	0.0	0.0	32.7	1.4
ESE	11.1	6.6	1.0	0.3	0.0	0.0	19.0	1.5
SE	1.2	1.1	0.1	0.0	0.0	0.0	2.4	1.6
SSE	1.0	0.4	0.0	0.0	0.0	0.0	1.4	1.3
S	0.7	0.5	0.1	0.0	0.0	0.0	1.3	1.7
SSW	0.5	0.9	0.5	0.0	0.0	0.0	1.9	2.3
SW	0.9	2.1	1.5	0.1	0.0	0.0	4.7	2.5
WSW	0.7	2.9	2.1	0.0	0.0	0.0	5.8	2.6
W	0.7	3.7	2.8	0.0	0.0	0.0	7.3	2.7
WNW	0.9	0.9	0.6	0.0	0.0	0.0	2.3	2.0
NW	0.4	0.2	0.0	0.0	0.0	0.0	0.6	1.5
NNW	0.3	0.4	0.1	0.0	0.0	0.0	0.8	1.7
All	46.3	30.0	17.9	2.8	0.5	0.0	97.5	2.0

Figure 5: Hewitt Station Meteorological Data Summary (Continued)

Meteorological Data: January 1 - March 31, 2015



3.2 Meteorological and Upper-Air Data Discussion

The meteorological and upper-air data collected at the East Plant, West Plant, and Hewitt sites for the first quarter of 2015 met all data recovery objectives.

3.2.1 Upper-Air and Anemometer Data Comparison

Data from the 20-meter upper-air parameter and the 20-meter anemometer have been compared as an additional quality control check and general gauge of sensor accuracy.

Bivariate scatter plots with linear regressions compare the wind speed, u , and v components. The plots show a linear relation between the 20-meter upper-air parameter and the 20-meter anemometer, with a few outliers.

Figure 6. Wind Speed Comparison
January 1 – March 31, 2015

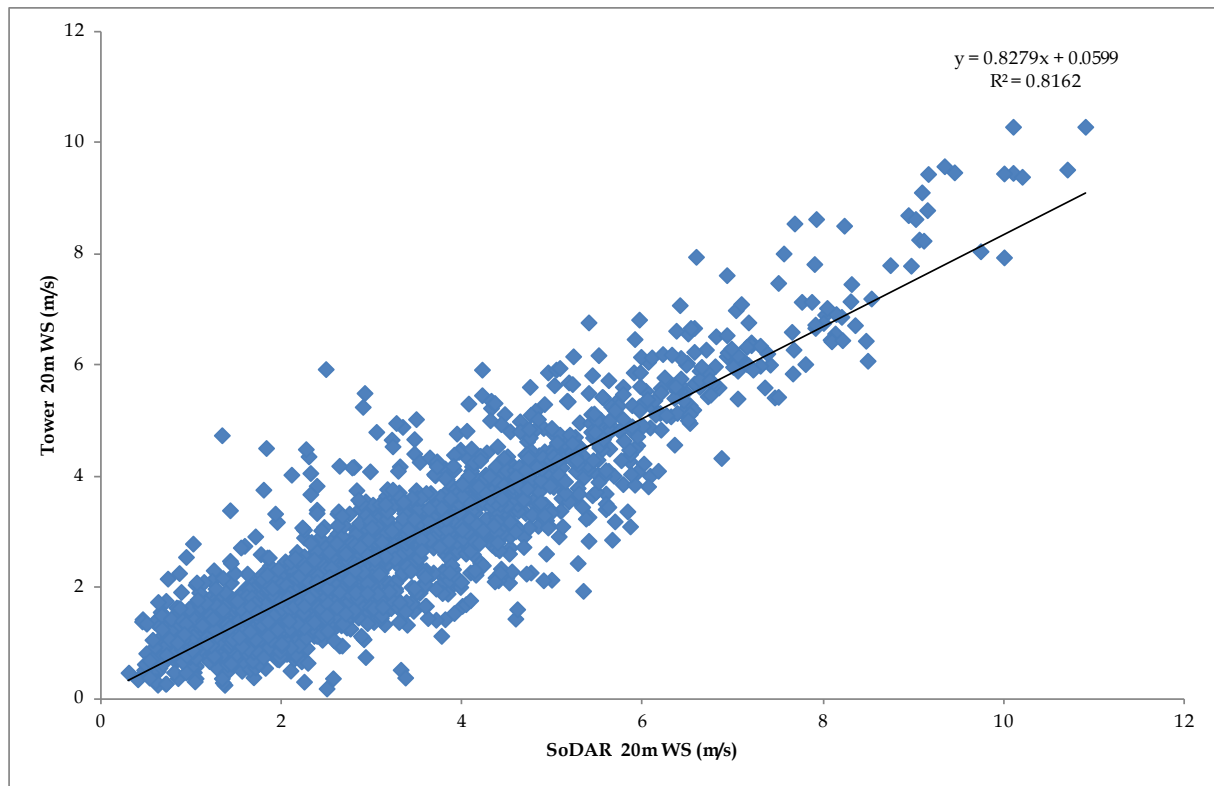


Figure 7. Zonal Component (u) Comparison
January 1 – March 31, 2015

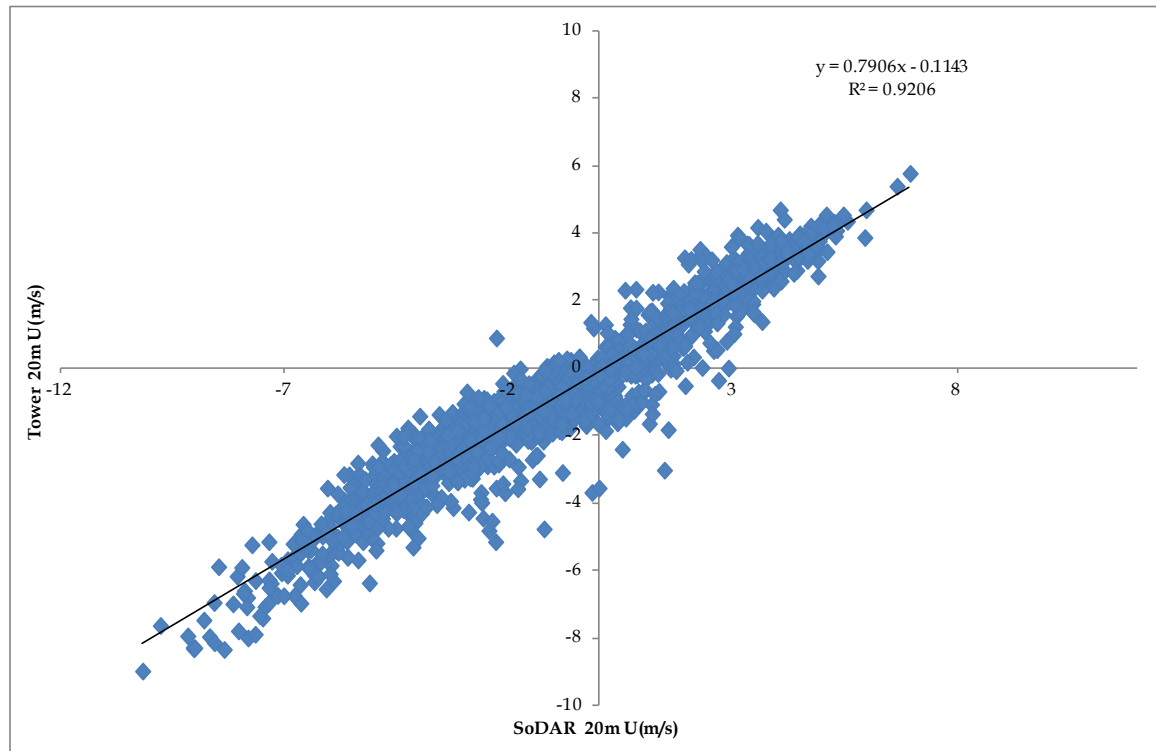
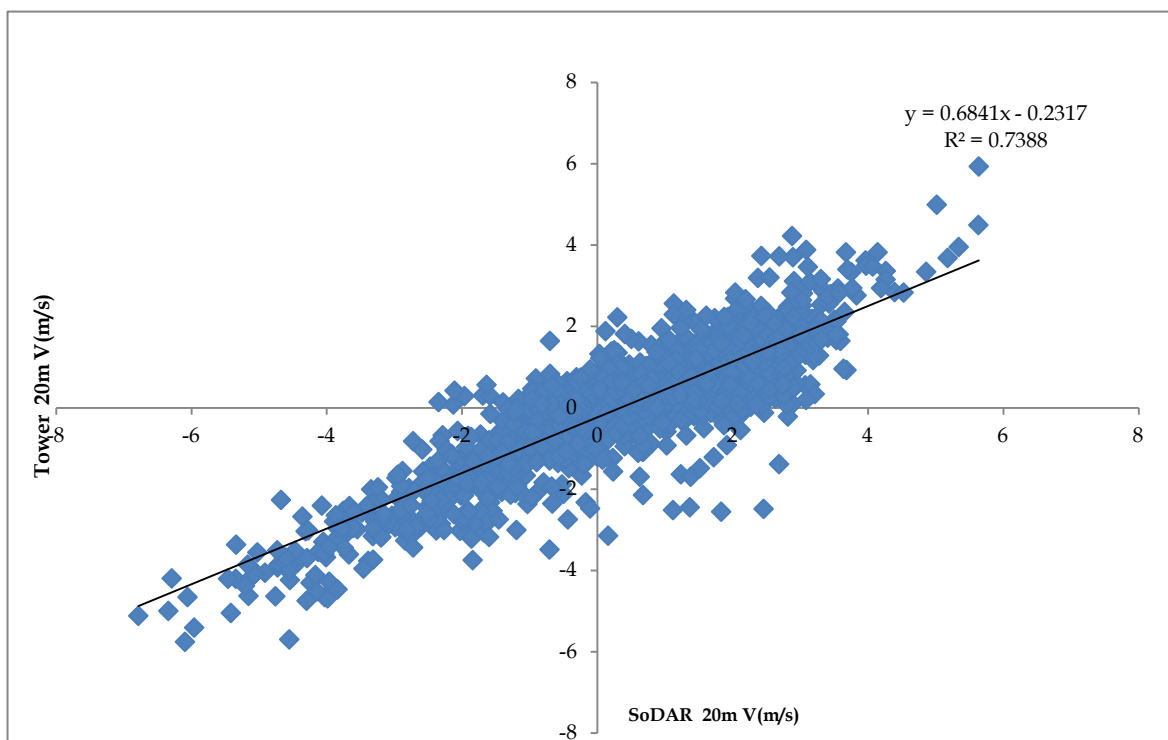


Figure 8. Meridional Component (v) Comparison
January 1 – March 31, 2015

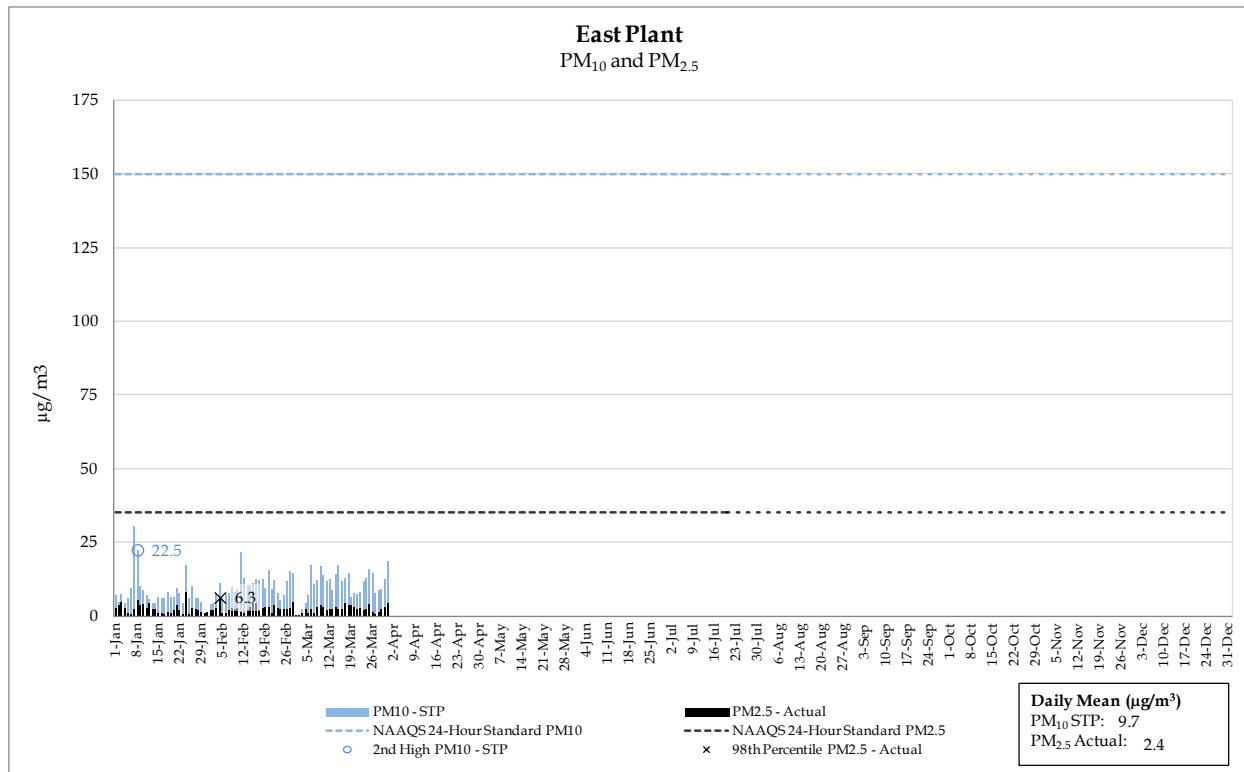


4.0 PM DATA SUMMARY AND DISCUSSION

4.1 East Plant PM Data Summary

Figure 9 presents the PM₁₀ and PM_{2.5} data collected at the East Plant site for 2015 (YTD), and compares the data to the PM₁₀ and PM_{2.5} NAAQS. The second-high 24-hour average for PM₁₀, and the 98th percentile for PM_{2.5} are labeled. The daily mean value for PM₁₀ and PM_{2.5} are shown in the lower-right corner.

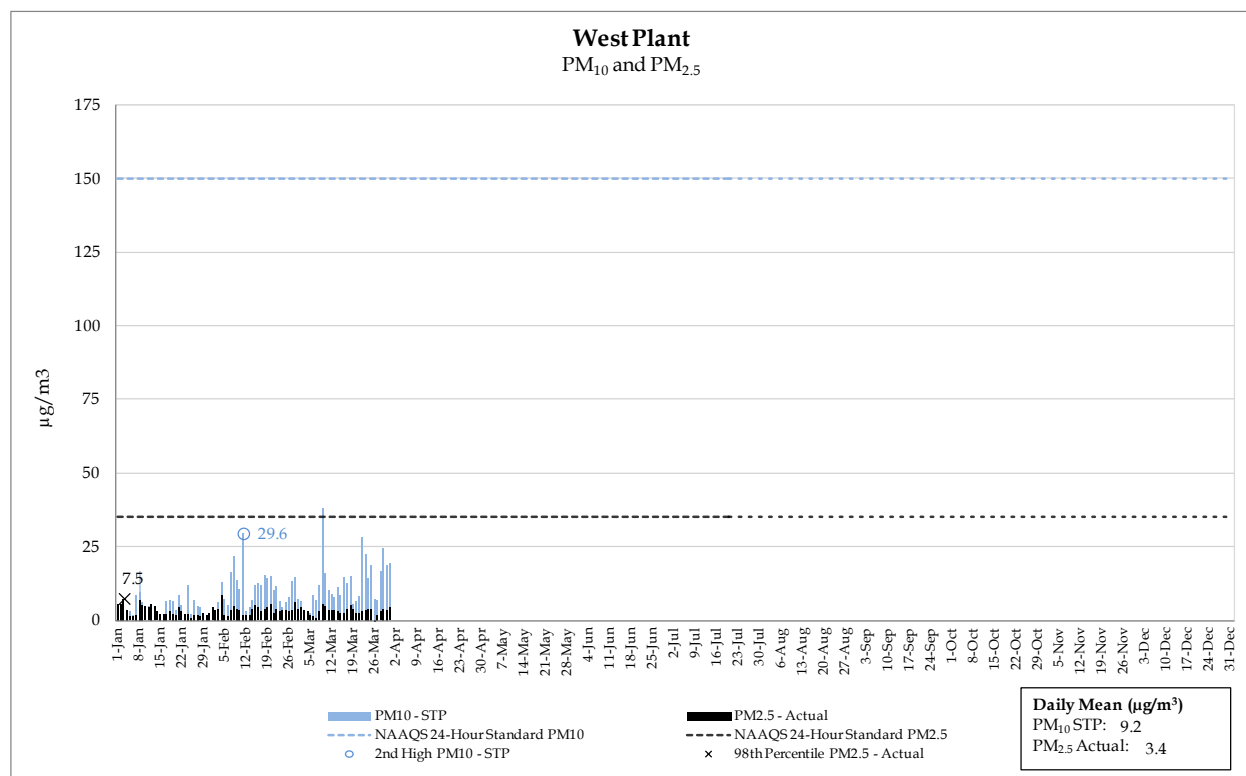
Figure 9. East Plant Particulate Data



4.2 West Plant PM Data Summary

Figure 10 presents the PM₁₀ and PM_{2.5} data collected at the West Plant site for 2015 (YTD), and compares the data to the PM₁₀ and PM_{2.5} NAAQS. The second-high 24-hour average for PM₁₀, and the 98th percentile for PM_{2.5} are labeled. The daily mean value for PM₁₀ and PM_{2.5} are shown in the lower-right corner.

Figure 10. West Plant Particulate Data



4.3 PM Data Discussion

4.3.1 PM₁₀

The National Ambient Air Quality Standard (NAAQS) for PM₁₀ is 150 µg/m³ for a 24-hour average concentration. The standard is met when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one (second-high value).

As shown in Figure 9 and Figure 10, the second-high PM₁₀ concentrations recorded at the East and West Plants are 22.5 µg/m³ and 29.6 µg/m³, respectively. Both the East and West Plants' second-high values are below the NAAQS of 150 µg/m³.

4.3.2 PM_{2.5}

The annual primary and secondary PM_{2.5} standards are met when the annual arithmetic mean concentration is less than or equal to 12.0 µg/m³. The 24-hour primary and secondary PM_{2.5} standards are met when the 98th percentile 24-hour concentration is less than or equal to 35 µg/m³.

As shown in Figure 9 and Figure 10, arithmetic mean concentrations for the East and West Plants are 2.4 and 3.4 µg/m³, respectively. Both the East and West Plants' arithmetic mean values are below the NAAQS of 12 µg/m³.

Figure 9 and Figure 10 also show the 98th percentile concentrations at the East and West Plants, which were 6.3 and 7.5 µg/m³, respectively. The 98th percentiles of both the East and West Plants' 24-hour concentrations are also below 35 µg/m³.

5.0 NO₂ DATA SUMMARY AND DISCUSSION

5.1 NO₂ Data Summary

Figure 11 and Figure 12 present the NO₂ maximum hourly concentrations for each calendar day, and hourly data collected at the East Plant site for 2015 (YTD). Figure 11 shows the 98th percentile compared to the one-hour NO₂ standard. Figure 12 shows the mean hourly NO₂ concentration compared with the annual NO₂ standard.

Figure 11. NO₂ Maximum Hourly Concentration for Each Calendar Day

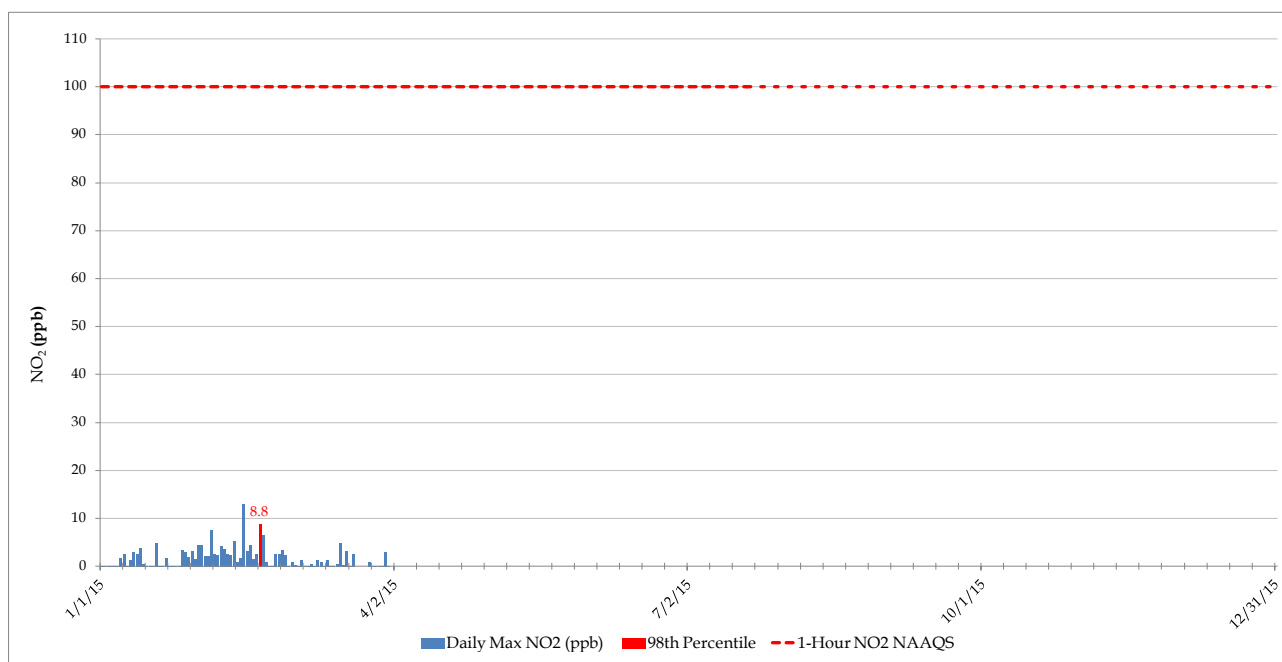
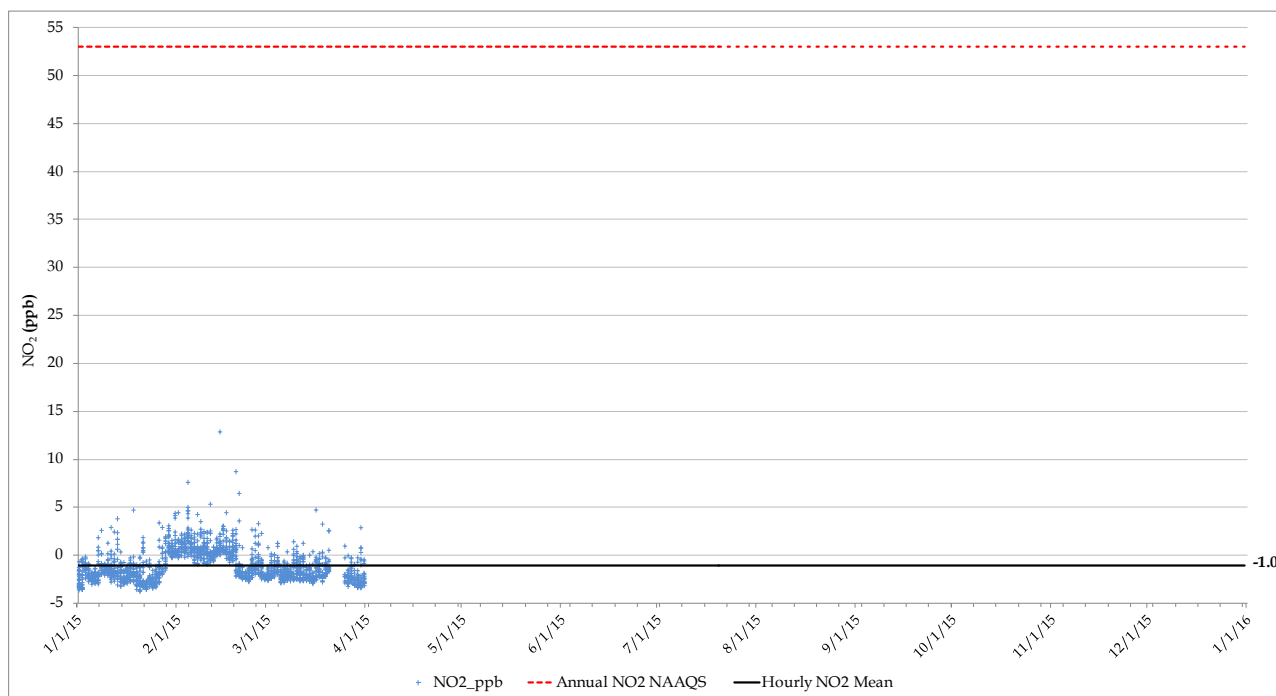


Figure 12. NO₂ Mean Hourly Concentrations



5.2 NO₂ Data Discussion

The level of the annual NAAQS for oxides of nitrogen is 53 parts per billion (ppb), measured in the ambient air as NO₂. The annual NAAQS is met when the annual average concentration in a calendar year is less than or equal to 53 ppb.

The level of the 1-hour NAAQS for oxides of nitrogen is 100 ppb, measured in the ambient air as NO₂. The 1-hour NAAQS is met when the three-year average of the annual 98th percentile of the daily maximum 1-hour average concentration is less than or equal to 100 ppb.

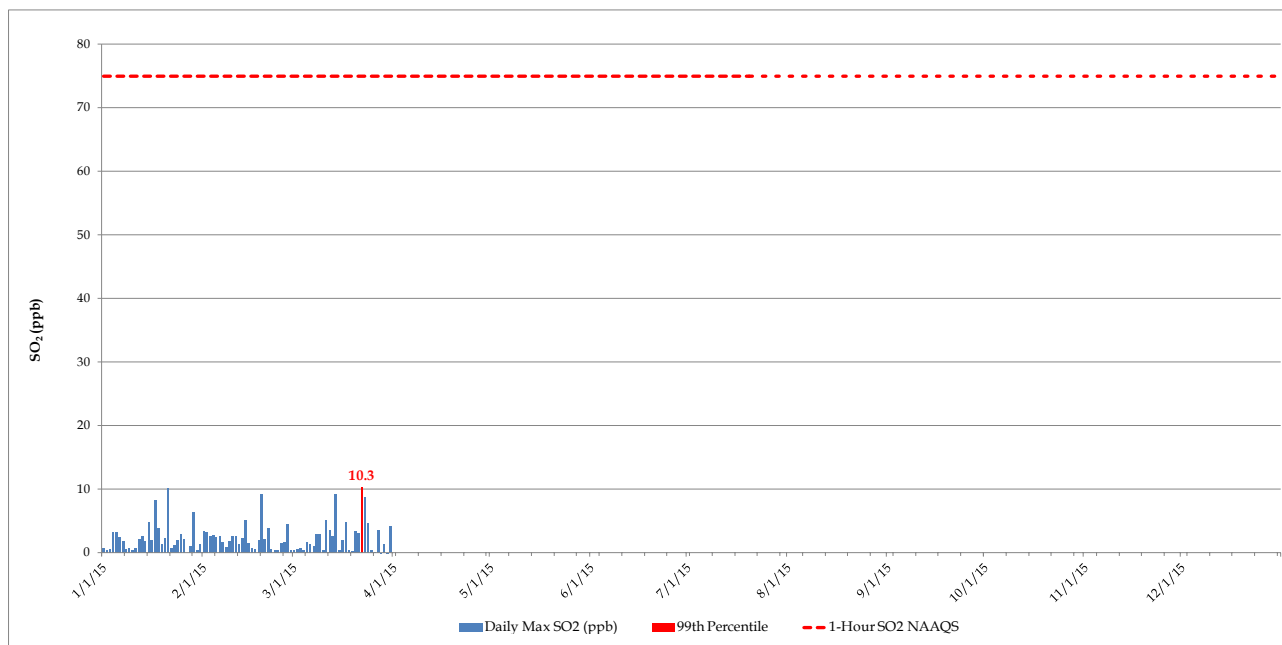
As shown in Figure 11, the 98th percentile of the daily maximum 1-hour average NO₂ concentration for 2015 (YTD) is 8.8 ppb, which is less than the NAAQS 1-hour primary standard of 100. As shown in Figure 12, the 2015 (YTD) hourly NO₂ average is -1.0 ppb, which is below the annual NO₂ NAAQS of 53 ppb. Slight, negative concentrations are normal when the analyzer is operating near the zero calibration set point.

6.0 SO₂ DATA SUMMARY AND DISCUSSION

6.1 SO₂ Data Summary

Figure 13 presents the maximum hourly SO₂ concentrations for each calendar day collected at the East Plant site for 2015 (YTD), and it shows the 99th percentile (labeled) compared to the one-hour SO₂ standard.

Figure 13. SO₂ Maximum Hourly Concentration for Each Calendar Day



6.2 SO₂ Data Discussion

The level of the primary 1-hour NAAQS for oxides of sulfur is 75 ppb measured in the ambient air as sulfur dioxide (SO₂). The 1-hour primary standard is met at an ambient air quality monitoring site when the three-year average of the annual (99th percentile) daily maximum 1-hour average concentrations is less than or equal to 75 ppb.

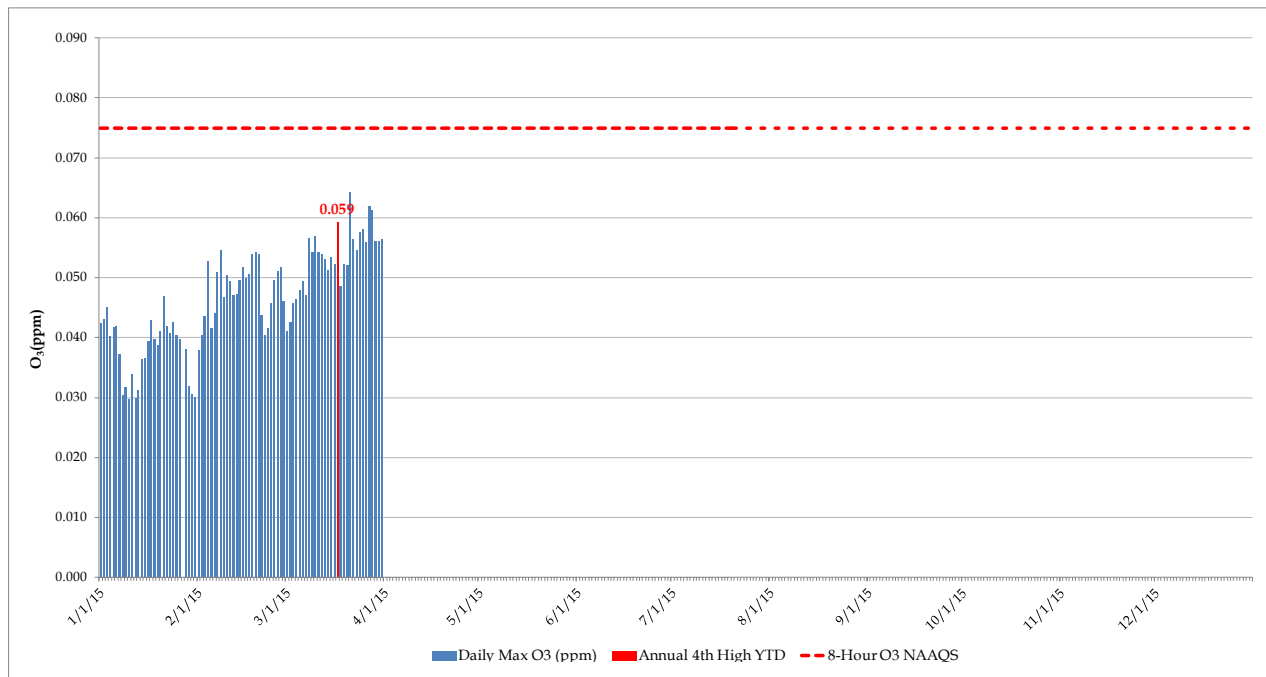
As shown in Figure 13, the 99th percentile 1-hour maximum concentration for 2015 (YTD) is 10.3 ppb, which is below the annual SO₂ NAAQS of 75 ppb.

7.0 O₃ DATA SUMMARY AND DISCUSSION

7.1 O₃ Data Summary

Figure 14 presents the daily rolling 8-hour maximum O₃ data collected at the East Plant site for 2015 (YTD), and it shows the fourth-highest rolling 8-hour average compared to the eight-hour O₃ standard.

Figure 14. O₃ Daily Rolling 8-Hour Maximum



7.2 O₃ Data Discussion

The level of the primary and secondary 8-hour NAAQS for ozone is 0.075 parts per million, daily maximum average. The 8-hour primary and secondary standard is met at an ambient air quality monitoring site when the three-year average of the annual fourth-highest daily maximum 8-hour average O₃ concentration is less than or equal to 0.075 ppm.

Figure 14 shows that the averaged fourth-high maximum recorded at the East Plant is 0.059 ppm. This concentration is below the NAAQS 8-hour O₃ standard of 0.075 ppm.

Parts of Pinal County and adjacent Maricopa County have been designated as non-attainment areas for 8-hour ozone by the Arizona Department of Environmental Quality (ADEQ).

Appendix A: Meteorological Data - Hourly

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, WS_ms_10m"
Month: Jan 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	3.3	2.2	3.1	2.9	1.3	1.6	1.1	0.4	0.7	0.7	0.8	1.5	1.3	0.7	0.7	1.7	1.8	0.6	0.7	0.6	0.8	1.6	1.7	2.5	1.4	3.3	0.4
2	3.4	6.9	7.4	7.4	8.6	9.2	9.0	8.5	7.9	6.2	3.9	3.5	2.5	1.6	2.6	3.2	3.5	2.8	2.7	1.0	1.8	1.5	1.4	1.8	4.5	9.2	1.0
3	1.1	1.1	0.6	1.4	1.4	0.9	0.4	0.3	0.4	0.9	1.3	2.0	2.1	2.0	2.3	1.8	1.6	2.4	1.6	0.9	0.8	1.0	1.4	1.5	1.3	2.4	0.3
4	1.7	1.9	2.0	2.8	3.7	3.9	4.5	4.1	5.8	6.4	5.7	5.5	6.1	5.4	5.6	4.7	5.0	2.8	3.1	3.4	4.2	5.6	4.6	4.4	4.3	6.4	1.7
5	3.7	3.8	5.4	5.6	5.2	5.0	5.5	5.5	5.3	6.8	8.2	8.3	8.5	7.7	7.5	7.4	5.4	4.2	4.2	4.7	4.5	4.0	4.1	5.3	5.7	8.5	3.7
6	5.1	6.0	5.0	4.6	4.7	5.1	7.9	6.7	7.9	6.7	6.5	7.6	6.2	6.7	6.7	6.4	6.6	3.9	3.2	3.2	3.1	3.9	4.9	4.6	5.6	7.9	3.1
7	7.4	8.6	9.0	9.3	10.2	10.6	9.8	9.7	8.7	9.5	8.8	8.9	7.6	6.5	6.9	8.0	7.2	7.0	6.4	5.7	5.6	6.9	7.8	8.4	8.1	10.6	5.6
8	8.6	8.0	8.0	9.4	9.5	10.0	10.1	8.9	6.7	7.0	7.5	6.0	5.3	6.0	4.5	3.7	3.6	3.7	3.4	3.8	3.9	4.0	4.0	4.5	6.3	10.1	3.4
9	4.3	4.0	4.5	4.3	4.5	4.4	4.7	5.3	6.5	6.6	7.0	7.3	7.6	8.0	7.8	6.8	7.0	6.7	6.1	6.1	6.0	7.2	7.1	6.7	6.1	8.0	4.0
10	6.1	6.4	6.1	5.2	5.3	6.1	5.9	4.6	5.8	6.7	6.6	7.1	5.5	4.9	2.7	2.6	2.0	2.3	1.4	1.1	1.5	1.3	1.2	1.4	4.2	7.1	1.1
11	1.3	1.3	1.1	1.6	1.4	1.4	1.4	1.6	2.1	2.1	2.0	2.6	2.6	2.2	1.7	2.7	3.4	1.9	2.4	1.8	1.3	1.7	1.2	1.4	1.8	3.4	1.1
12	1.2	1.4	1.8	1.5	1.7	1.1	1.6	1.9	2.4	2.4	2.1	1.3	1.6	2.8	1.7	1.5	1.6	1.2	0.8	1.1	1.0	0.7	1.0	0.5	1.5	2.8	0.5
13	0.4	0.3	0.6	1.5	0.6	0.5	0.6	0.9	0.8	1.3	1.9	3.4	2.9	2.7	2.5	1.5	0.5	0.8	1.0	1.0	1.2	1.3	0.7	0.6	1.2	3.4	0.3
14	1.1	1.5	2.0	2.3	3.2	4.0	2.4	3.8	5.6	3.9	4.3	4.7	4.5	4.1	4.9	4.1	3.7	3.0	2.8	2.4	3.1	2.4	2.5	4.5	3.4	5.6	1.1
15	5.2	4.7	4.5	7.0	4.0	4.6	8.0	7.3	5.7	8.7	8.0	8.2	8.0	8.3	8.1	5.8	4.3	3.9	2.8	4.1	5.5	7.4	8.6	8.5	6.3	8.7	2.8
16	9.6	10.0	9.3	9.3	10.0	7.9	8.0	5.6	5.7	6.8	6.7	6.6	7.0	4.9	3.0	3.4	3.7	2.9	2.3	1.8	1.8	2.4	2.5	2.4	5.6	10.0	1.8
17	1.8	1.4	1.5	1.6	1.3	1.7	1.6	1.7	2.0	4.3	4.4	4.1	3.0	2.1	3.6	4.1	4.2	3.8	1.9	0.7	1.4	2.2	2.3	1.8	2.4	4.4	0.7
18	1.3	1.6	2.5	2.1	2.5	2.2	4.0	2.9	3.3	3.8	5.0	5.1	4.4	3.7	2.0	2.2	1.8	2.1	1.4	1.1	1.3	2.1	2.2	1.9	2.6	5.1	1.1
19	1.8	1.8	1.5	2.2	3.1	2.7	1.9	1.6	2.2	2.1	1.4	1.5	2.5	2.2	2.3	2.0	1.8	1.5	1.5	1.4	0.6	0.3	0.6	0.2	1.7	3.1	0.2
20	0.2	0.5	0.6	0.9	1.3	2.0	2.3	2.8	2.5	2.2	3.1	2.6	2.1	1.9	1.4	1.4	1.8	2.0	0.9	0.9	0.9	0.7	0.7	0.2	1.5	3.1	0.2
21	0.2	0.1	0.6	0.8	0.5	0.4	1.1	2.8	3.8	2.0	2.0	2.3	2.6	2.3	2.2	2.3	3.1	2.3	8.3	7.4	8.2	5.0	8.6	7.9	3.2	8.6	0.1
22	7.8	11.3	11.3	8.8	6.6	7.4	8.3	10.7	13.9	13.3	11.3	10.1	8.4	6.2	5.2	5.7	5.9	5.1	5.9	7.9	8.8	5.6	4.5	4.0	8.1	13.9	4.0
23	5.0	4.5	5.7	4.4	4.7	5.8	5.6	5.7	6.3	6.6	7.3	7.5	7.5	5.0	2.6	2.0	2.7	3.3	5.9	5.8	5.6	6.4	4.9	9.3	5.4	9.3	2.0
24	10.5	10.6	11.0	10.5	11.3	11.7	11.0	8.0	10.6	14.1	13.3	11.9	11.6	11.9	11.2	7.9	6.9	4.6	5.0	4.4	8.4	9.6	7.6	7.6	9.6	14.1	4.4
25	5.9	7.2	8.4	8.2	8.1	5.1	4.8	5.3	9.1	8.4	8.8	9.2	7.0	7.1	7.4	7.5	6.8	4.0	3.5	4.5	3.6	4.0	4.2	4.7	6.4	9.2	3.5
26	4.0	6.2	5.4	7.3	4.4	7.2	7.1	7.5	5.8	6.5	7.1	6.7	3.1	4.7	4.6	4.9	5.5	4.6	3.1	2.1	2.6	1.4	3.9	2.4	4.9	7.5	1.4
27	4.4	3.3	2.0	1.4	1.8	2.6	2.6	1.7	2.5	--	--	3.3	3.4	2.4	1.1	2.2	2.0	1.3	1.2	1.7	1.2	0.8	1.0	0.7	2.0	4.4	0.7
28	0.7	1.4	1.3	1.9	1.9	2.1	1.5	2.1	1.8	1.6	1.4	1.6	2.3	1.8	2.4	3.1	3.7	3.6	1.6	0.8	1.4	1.6	1.3	1.6	1.8	3.7	0.7
29	1.6	1.7	1.5	2.1	2.4	1.9	2.6	3.0	3.6	4.7	5.2	4.6	3.1	2.8	3.5	3.3	3.2	2.2	1.9	2.4	6.6	6.7	6.0	5.5	3.4	6.7	1.5
30	5.8	6.3	6.6	6.0	6.4	5.9	6.0	4.9	4.5	4.2	5.2	6.4	6.4	6.5	4.0	3.6	2.4	3.0	3.6	2.6	2.4	2.1	2.1	2.7	4.6	6.6	2.1
31	2.3	1.3	2.2	2.4	3.1	3.3	3.2	3.3	3.2	4.1	4.1	3.7	3.8	2.1	1.0	1.1	1.8	1.9	1.5	1.3	1.3	1.5	1.4	0.6	2.3	4.1	0.6
Avg	3.8	4.1	4.3	4.4	4.3	4.5	4.7	4.5	4.9	5.4	5.4	5.3	4.9	4.4	4.0	3.8	3.7	3.1	3.0	2.8	3.2	3.3	3.4	3.6	4.1	--	--
Max	10.5	11.3	11.3	10.5	11.3	11.7	11.0	10.7	13.9	14.1	13.3	11.9	11.6	11.9	11.2	8.0	7.2	7.0	8.3	7.9	8.8	9.6	8.6	9.3	--	14.1	--
Min	0.2	0.1	0.6	0.8	0.5	0.4	0.4	0.3	0.4	0.7	0.8	1.3	1.3	0.7	0.7	1.1	0.5	0.6	0.7	0.6	0.6	0.3	0.6	0.2	--	--	0.1

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, WS_ms_10m"
Month: Feb 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	1.7	1.2	0.9	1.2	1.0	2.0	5.9	7.9	7.5	6.8	5.4	4.8	4.0	2.6	4.6	4.0	4.3	3.7	2.3	0.6	0.8	1.4	3.2	3.4	3.4	7.9	0.6
2	3.0	3.2	3.3	4.1	1.8	3.7	4.2	2.3	2.5	3.1	3.8	4.7	4.1	2.9	2.4	1.3	2.9	3.1	2.2	0.9	1.3	1.7	1.4	1.6	2.7	4.7	0.9
3	1.9	2.2	1.9	1.7	1.9	2.3	1.9	1.6	2.3	2.9	2.3	1.8	3.3	3.5	3.3	3.5	3.5	3.2	1.7	1.1	0.6	1.1	0.6	0.3	2.1	3.5	0.3
4	1.0	1.2	1.1	1.1	0.7	0.8	0.6	0.6	0.9	0.9	0.5	3.1	3.3	3.2	4.0	4.2	3.5	2.9	3.1	1.8	1.5	0.8	0.9	1.2	1.8	4.2	0.5
5	1.6	1.8	2.3	2.3	2.0	1.5	2.8	2.6	3.1	4.5	3.9	5.6	4.9	3.9	3.0	2.5	3.0	3.1	2.3	2.5	1.8	1.5	1.9	2.2	2.8	5.6	1.5
6	2.7	2.3	2.6	2.6	2.5	2.6	2.6	2.6	3.4	3.6	3.8	3.3	2.5	1.4	1.7	1.4	1.8	1.3	1.0	1.2	0.7	0.5	0.2	0.3	2.0	3.8	0.2
7	0.7	0.6	0.8	1.0	1.3	0.6	0.9	0.4	0.7	0.7	1.8	2.4	2.6	3.0	3.3	2.0	1.8	1.6	1.5	1.6	2.2	1.5	1.2	0.9	1.5	3.3	0.4
8	0.4	0.4	0.6	1.1	0.8	1.3	1.3	2.0	1.8	2.5	2.3	2.0	3.1	3.6	3.9	3.9	4.0	4.1	3.8	3.2	0.7	1.2	0.8	0.3	2.0	4.1	0.3
9	0.6	0.7	0.9	1.7	1.8	1.9	2.1	2.5	3.1	3.5	2.4	1.2	1.8	2.7	3.0	3.1	2.8	3.2	2.8	1.1	0.9	0.4	0.7	0.5	1.9	3.5	0.4
10	0.8	0.3	0.6	1.5	1.9	1.6	1.6	1.3	1.3	2.0	1.2	3.1	3.0	2.8	2.6	2.5	2.4	2.3	2.1	2.4	1.7	2.4	2.0	1.3	1.9	3.1	0.3
11	0.5	0.7	1.5	1.7	3.0	5.7	4.2	8.2	9.5	10.0	9.4	9.9	7.7	7.7	9.5	9.4	9.8	6.3	5.9	7.9	6.8	6.3	5.8	3.4	6.3	10.0	0.5
12	5.3	9.0	8.9	8.6	3.7	4.9	4.3	5.6	6.2	5.6	6.3	7.2	6.6	6.7	7.1	6.2	4.8	3.1	4.2	3.6	2.2	3.5	7.0	5.8	5.7	9.0	2.2
13	6.3	5.5	7.3	7.5	9.1	6.9	7.4	7.4	7.1	7.3	9.0	8.5	7.2	4.5	3.9	6.0	4.6	3.4	1.1	1.5	5.4	4.9	3.1	2.4	5.7	9.1	1.1
14	3.1	5.8	6.5	5.8	4.9	6.1	6.4	6.6	6.7	7.2	6.1	6.2	3.9	2.3	2.4	4.0	3.7	2.6	1.5	1.2	1.0	1.1	1.1	1.0	4.0	7.2	1.0
15	0.7	0.7	0.2	0.4	0.4	0.3	0.8	0.6	0.6	0.5	1.3	1.9	2.1	1.9	2.3	2.1	2.6	1.9	1.6	1.6	2.2	2.4	2.3	1.7	1.4	2.6	0.2
16	1.7	1.2	0.5	0.7	0.5	0.5	0.6	0.1	0.5	1.5	2.4	2.1	2.7	3.6	3.8	2.9	3.1	2.6	2.5	1.6	1.6	1.1	1.8	1.5	1.7	3.8	0.1
17	1.4	1.6	4.4	5.5	6.9	8.5	8.4	5.6	6.6	5.5	6.6	5.3	2.2	2.1	3.1	2.7	2.1	2.2	2.0	2.8	2.2	1.0	0.8	1.2	3.8	8.5	0.8
18	1.3	0.6	1.2	1.3	1.1	1.2	1.5	1.7	1.2	1.3	1.2	3.3	2.4	2.0	3.5	3.5	4.1	3.4	2.8	1.9	0.5	0.5	0.8	1.0	1.8	4.1	0.5
19	1.1	0.9	1.8	1.8	1.5	1.9	1.6	1.2	1.0	0.9	0.6	1.4	2.3	2.0	2.3	1.8	1.9	1.6	1.7	1.1	0.5	0.9	1.1	0.3	1.4	2.3	0.3
20	0.2	0.3	0.5	0.4	0.8	0.6	0.5	0.4	0.4	0.8	1.1	1.4	2.1	2.5	2.1	2.5	2.2	2.0	2.9	2.1	0.8	0.3	0.5	2.0	1.2	2.9	0.2
21	2.7	2.3	2.4	1.2	0.7	1.2	0.8	0.6	0.7	2.4	2.9	3.6	3.8	2.1	2.0	2.6	3.5	1.5	1.0	2.7	3.9	2.7	2.9	3.4	2.2	3.9	0.6
22	2.8	3.0	1.9	2.5	2.0	3.4	3.2	3.8	3.9	2.5	2.7	2.6	3.4	4.1	3.4	3.9	3.4	1.8	1.7	2.1	2.8	3.8	3.6	2.9	3.0	4.1	1.7
23	2.4	3.6	4.5	3.8	3.9	2.8	2.9	2.3	2.7	3.8	3.8	4.9	3.8	4.0	3.0	2.8	2.5	1.8	1.7	0.8	0.9	1.5	2.8	2.4	2.9	4.9	0.8
24	1.1	2.2	2.1	1.5	1.2	1.5	1.8	1.4	2.7	1.2	2.0	1.9	3.3	2.7	1.8	2.2	3.9	1.2	1.1	0.8	0.7	1.1	1.7	1.5	1.8	3.9	0.7
25	1.5	0.8	1.2	1.8	1.1	0.5	0.8	0.5	0.8	2.4	2.4	4.0	2.6	2.8	3.1	2.7	2.6	2.9	2.1	1.3	0.9	0.8	3.8	1.7	1.9	4.0	0.5
26	0.7	0.8	1.1	1.5	1.5	1.0	1.1	1.8	2.1	2.4	2.1	2.0	2.8	3.2	3.2	2.4	3.1	2.2	1.7	1.4	1.6	2.1	1.7	0.7	1.8	3.2	0.7
27	0.3	0.4	0.5	0.8	0.6	0.9	0.6	1.0	1.3	1.8	3.2	4.0	4.5	4.2	4.3	5.7	5.2	3.8	6.8	5.6	5.0	5.9	6.1	5.3	3.3	6.8	0.3
28	4.2	4.0	2.7	2.5	2.9	3.2	3.2	3.3	3.1	3.8	3.8	4.4	5.7	4.2	6.1	5.7	4.5	3.2	2.6	2.8	3.2	2.0	1.6	3.1	3.6	6.1	1.6
Avg	1.9	2.1	2.3	2.4	2.2	2.5	2.6	2.7	3.0	3.3	3.4	3.8	3.6	3.3	3.5	3.5	3.5	2.7	2.4	2.1	1.9	1.9	2.2	1.9	2.7	--	--
Max	6.3	9.0	8.9	8.6	9.1	8.5	8.4	8.2	9.5	10.0	9.4	9.9	7.7	7.7	9.5	9.4	9.8	6.3	6.8	7.9	6.8	6.3	7.0	5.8	--	10.0	--
Min	0.2	0.3	0.2	0.4	0.4	0.3	0.5	0.1	0.4	0.5	0.5	1.2	1.8	1.4	1.7	1.3	1.8	1.2	1.0	0.6	0.5	0.3	0.2	0.3	--	--	0.1

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, WS_ms_10m"
Month: Mar 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	2.5	1.6	2.6	2.2	2.5	0.9	1.0	0.4	1.1	3.3	4.3	3.9	4.2	3.9	3.7	2.6	2.0	3.1	2.0	1.4	2.2	2.6	2.7	3.7	2.5	4.3	0.4
2	2.8	2.2	2.2	2.2	2.3	3.3	4.6	4.2	5.3	4.9	7.1	4.9	2.5	2.2	2.3	3.5	2.8	2.6	1.7	0.7	1.1	1.2	0.3	0.4	2.8	7.1	0.3
3	0.9	0.8	0.5	0.8	0.7	1.0	1.2	1.1	1.2	1.2	1.3	1.9	2.1	3.2	2.3	2.3	1.7	1.7	2.3	2.9	1.7	0.8	0.6	1.3	1.5	3.2	0.5
4	1.2	1.3	1.3	1.2	1.4	1.3	1.6	1.5	1.3	4.2	3.8	1.8	2.1	3.0	2.8	2.7	2.0	2.5	1.8	2.4	0.7	0.9	3.3	4.0	2.1	4.2	0.7
5	3.8	3.6	4.7	8.0	6.8	7.6	7.5	7.5	5.5	7.8	7.8	7.8	7.1	5.3	5.0	4.3	4.7	4.9	2.1	2.5	4.5	6.3	4.7	5.2	5.6	8.0	2.1
6	4.9	7.5	7.7	7.3	11.3	10.9	9.7	10.3	11.0	10.9	11.6	9.8	9.6	8.3	8.7	7.8	7.5	7.3	6.4	4.8	4.9	5.0	5.8	9.7	8.3	11.6	4.8
7	7.2	5.3	6.6	6.2	4.5	4.1	4.2	4.8	6.4	7.6	6.4	4.7	3.0	2.3	2.2	2.1	2.0	1.6	0.8	3.4	2.7	1.1	1.1	0.9	3.8	7.6	0.8
8	2.6	4.4	--	1.4	1.6	1.4	2.0	1.9	1.1	1.8	2.2	3.1	3.2	3.4	3.3	2.4	2.9	1.9	2.4	2.2	2.6	2.6	1.4	1.6	2.3	4.4	1.1
9	1.4	1.8	1.2	0.9	0.2	0.4	0.8	0.7	0.8	0.8	2.5	2.6	2.8	2.9	2.7	3.4	2.2	2.3	2.1	2.4	1.5	1.3	1.3	1.0	1.7	3.4	0.2
10	2.1	1.1	2.1	2.1	2.2	2.3	1.4	2.1	2.7	3.7	3.8	3.6	3.0	3.1	2.9	2.4	2.6	2.9	2.4	2.5	1.8	1.3	0.7	1.7	2.3	3.8	0.7
11	1.2	1.6	1.8	2.6	2.6	2.2	2.3	2.4	3.3	4.0	4.7	4.8	3.8	2.8	1.9	1.8	1.4	1.1	0.9	0.8	1.4	1.1	1.0	0.8	2.2	4.8	0.8
12	1.3	2.2	1.5	1.3	0.9	1.3	1.5	1.1	1.6	4.3	4.9	4.3	4.2	4.2	1.8	2.2	1.6	2.8	4.2	5.3	6.6	7.8	7.4	7.3	3.4	7.8	0.9
13	7.1	6.9	5.9	6.4	4.7	7.6	8.2	7.7	8.0	7.6	7.2	7.3	5.3	2.9	2.6	3.8	7.0	4.9	3.7	7.0	5.7	4.9	3.8	3.1	5.8	8.2	2.6
14	2.8	5.4	5.7	4.1	6.1	5.5	5.8	5.9	7.7	8.1	6.4	6.1	4.8	5.4	5.7	4.9	2.9	2.3	1.6	0.7	0.6	0.7	1.1	3.1	4.3	8.1	0.6
15	4.3	3.8	3.9	3.0	2.3	2.1	2.3	3.1	5.0	5.5	6.0	6.2	7.1	7.6	7.3	6.0	5.3	4.7	3.9	2.3	2.0	4.7	6.5	2.2	4.5	7.6	2.0
16	2.9	2.3	3.6	2.9	4.1	5.4	7.4	7.5	6.1	7.6	7.2	6.3	4.8	3.7	2.7	3.1	2.6	3.4	3.3	1.6	1.1	1.4	1.6	1.8	3.9	7.6	1.1
17	2.3	2.3	1.8	2.2	2.0	2.4	2.2	2.9	3.7	3.4	2.8	2.0	2.1	1.6	2.6	1.9	1.7	1.6	2.0	2.1	1.9	1.3	1.7	1.4	2.2	3.7	1.3
18	1.6	0.5	1.5	1.6	1.9	3.5	1.3	0.3	0.5	1.1	1.7	1.8	1.8	2.1	2.4	1.7	4.4	3.4	3.1	1.8	0.9	1.8	1.1	1.3	1.8	4.4	0.3
19	1.2	0.6	0.7	1.2	1.0	2.0	1.8	1.8	1.4	1.4	1.4	2.6	2.2	2.2	2.4	2.5	3.0	2.3	1.4	0.9	1.4	1.0	1.9	1.4	1.7	3.0	0.6
20	0.8	0.3	0.9	1.3	1.3	1.1	1.3	1.8	2.5	3.2	1.7	1.9	2.9	2.1	2.3	3.0	1.1	3.3	3.0	1.7	2.0	1.9	1.9	2.0	1.9	3.3	0.3
21	1.9	1.8	2.0	2.4	1.7	1.4	1.7	1.5	1.0	1.9	2.1	2.7	2.3	3.0	2.9	2.7	3.0	2.0	2.4	2.8	2.4	2.1	0.6	1.0	2.1	3.0	0.6
22	0.6	0.6	0.5	0.1	0.1	0.4	0.6	0.9	1.3	1.4	2.5	2.3	2.5	2.6	2.0	3.0	2.5	1.9	1.2	0.9	0.4	0.5	0.2	0.2	1.2	3.0	0.1
23	0.4	1.6	2.3	0.9	0.5	0.7	0.6	0.8	1.4	1.1	2.1	2.5	2.3	3.1	3.0	2.9	2.8	2.0	2.5	1.7	1.7	1.6	0.8	0.6	1.7	3.1	0.4
24	0.9	1.0	1.1	0.8	0.8	0.9	1.3	1.0	1.0	2.2	2.1	3.2	3.0	2.8	2.6	2.6	2.6	2.3	1.8	1.5	0.8	1.2	0.8	0.6	1.6	3.2	0.6
25	0.4	0.6	0.7	0.7	0.4	0.9	0.6	0.5	0.7	1.2	2.7	3.3	2.9	2.9	3.2	3.3	2.9	2.4	2.4	3.3	2.9	2.0	1.8	0.9	1.8	3.3	0.4
26	3.2	5.0	8.3	10.3	11.6	11.4	10.3	10.5	10.0	9.7	8.3	7.3	5.4	3.4	1.8	1.4	1.4	1.5	0.8	0.8	0.5	0.7	1.2	1.4	5.3	11.6	0.5
27	1.8	1.9	1.6	2.6	2.4	2.4	2.7	3.6	4.5	4.3	4.2	3.2	1.8	2.3	2.3	2.4	2.0	2.1	2.9	3.8	2.8	1.2	0.4	1.1	2.5	4.5	0.4
28	0.4	0.3	0.7	1.2	1.1	1.4	1.7	1.2	1.5	1.7	2.2	2.8	2.7	2.6	2.9	2.7	2.4	1.7	1.4	0.5	0.5	0.4	0.7	0.3	1.5	2.9	0.3
29	0.5	0.9	1.7	2.0	1.8	1.9	1.7	1.6	2.0	1.7	1.7	2.1	2.2	2.5	2.6	2.7	2.6	2.3	1.2	0.5	0.6	0.8	0.5	0.9	1.6	2.7	0.5
30	0.9	0.9	0.6	0.8	0.7	1.1	1.6	1.0	1.5	1.9	1.7	2.1	2.3	3.3	3.2	2.3	3.0	2.7	3.1	1.9	1.8	0.9	0.8	0.8	1.7	3.3	0.6
31	0.8	0.6	1.2	0.8	0.9	0.7	1.0	0.5	1.1	1.9	2.7	2.6	2.9	3.1	2.8	2.5	2.7	2.5	1.9	1.4	1.0	1.1	1.7	1.6	1.7	3.1	0.5
Avg	2.1	2.3	2.6	2.6	2.7	2.9	3.0	3.0	3.3	3.9	4.1	3.9	3.5	3.3	3.1	3.0	2.9	2.7	2.3	2.2	2.0	2.0	1.9	2.0	2.8	--	--
Max	7.2	7.5	8.3	10.3	11.6	11.4	10.3	10.5	11.0	10.9	11.6	9.8	9.6	8.3	8.7	7.8	7.5	7.3	6.4	7.0	6.6	7.8	7.4	9.7	--	11.6	--
Min	0.4	0.3	0.5	0.1	0.1	0.4	0.6	0.3	0.5	0.8	1.3	1.8	1.8	1.6	1.8	1.4	1.1	1.1	0.8	0.5	0.4	0.4	0.2	0.2	--	--	0.1

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, WD_10m"
Month: Jan 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	222	201	224	235	256	228	150	167	109	70	114	121	283	69	64	86	72	49	91	29	132	108	111	87	120	283	29
2	70	50	50	49	44	43	44	43	43	43	55	49	35	197	257	264	273	268	268	256	272	272	255	272	354	273	35
3	275	249	254	282	285	272	141	164	144	125	179	245	245	243	259	233	253	258	286	139	159	136	110	130	217	286	110
4	115	97	93	100	81	87	108	100	70	59	70	55	51	45	52	51	53	72	84	77	61	69	80	84	75	115	45
5	88	77	68	63	62	62	64	63	69	64	56	55	53	52	49	50	60	68	81	77	113	105	68	91	69	113	49
6	62	62	75	75	78	71	54	59	52	57	59	52	56	52	48	49	44	65	101	110	91	99	70	64	67	110	44
7	56	53	52	53	50	50	54	52	54	54	58	55	55	69	65	55	55	52	56	59	61	56	51	53	55	69	50
8	51	52	54	50	51	47	45	49	58	56	53	58	70	60	65	92	93	87	76	80	89	91	73	100	67	100	45
9	95	94	79	79	73	78	67	59	57	57	57	55	50	48	44	50	47	50	52	50	52	47	48	53	60	95	44
10	58	54	55	60	58	58	57	62	56	56	54	48	52	44	58	81	98	91	107	132	129	134	158	120	76	158	44
11	111	142	145	121	135	145	140	140	101	118	122	71	67	57	86	48	48	69	70	104	57	103	106	98	100	145	48
12	138	138	110	122	78	95	92	87	69	74	71	111	126	128	207	261	273	270	106	158	156	157	233	111	125	273	69
13	140	266	199	259	140	139	116	150	98	128	130	151	152	289	344	84	155	295	348	182	154	111	127	123	145	348	84
14	151	121	77	71	59	58	82	59	42	58	53	45	46	55	45	55	50	59	47	70	105	101	99	67	68	151	42
15	55	80	74	50	72	72	58	60	71	56	56	54	55	54	53	79	84	53	47	51	51	50	52	54	60	84	47
16	54	54	54	50	53	55	54	60	66	59	61	53	49	72	107	43	40	50	69	84	98	69	63	66	62	107	40
17	105	137	159	161	137	148	157	162	121	66	56	64	47	318	274	266	269	272	283	126	158	116	111	158	138	318	47
18	157	139	133	108	90	83	66	71	68	63	59	53	52	50	68	14	270	284	315	180	167	143	132	137	92	315	14
19	124	104	163	152	127	159	181	167	111	105	117	139	259	250	235	249	242	255	254	262	262	141	194	150	181	262	104
20	163	177	167	164	159	121	95	106	93	89	65	62	136	129	126	275	257	264	121	155	140	129	111	89	131	275	62
21	111	141	171	99	99	73	214	141	266	146	134	254	236	256	245	248	272	96	36	46	43	71	52	43	125	272	36
22	38	40	48	53	57	58	58	43	40	39	39	35	38	42	37	45	45	36	44	48	54	63	61	66	47	66	35
23	63	83	98	78	76	68	63	86	73	68	53	50	54	62	100	113	73	55	53	54	63	51	66	50	69	113	50
24	47	51	53	53	51	51	52	62	54	48	48	49	53	55	55	67	62	67	66	70	52	49	58	54	55	70	47
25	59	53	48	47	49	68	74	80	49	49	50	50	52	50	47	47	52	81	83	83	76	78	90	64	62	90	47
26	66	55	58	51	66	53	53	53	61	55	53	54	94	48	51	56	49	55	69	84	89	60	286	84	60	286	48
27	54	63	95	106	112	87	79	112	85	--	--	68	59	43	58	53	352	279	172	197	190	210	210	284	92	352	43
28	175	194	163	173	186	193	187	175	131	104	84	351	139	189	270	261	275	275	278	91	162	114	187	135	176	351	84
29	146	145	152	96	107	117	101	78	64	59	58	56	70	81	73	90	59	68	89	63	46	45	65	82	82	152	45
30	82	106	109	106	110	103	113	104	82	86	108	111	112	115	109	86	94	83	62	90	79	88	109	68	97	115	62
31	84	104	103	85	59	58	57	61	70	61	61	117	121	116	99	133	106	111	113	104	126	97	80	129	94	133	57
Avg	94	97	100	87	84	84	87	89	74	71	72	64	68	64	62	59	48	47	66	94	102	94	95	88	80	--	--
Max	275	266	254	282	285	272	214	175	266	146	179	351	283	318	344	275	352	295	348	262	272	272	286	284	--	352	--
Min	38	40	48	47	44	43	44	43	40	39	39	35	35	42	37	14	40	36	36	29	43	45	48	43	--	--	14

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, WD_10m"
Month: Feb 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	291	299	173	176	170	190	39	43	43	46	55	54	42	3	267	264	264	274	272	87	162	153	98	103	80	299	3
2	113	113	127	99	116	95	71	101	99	73	59	47	47	53	62	4	269	271	273	150	177	179	154	173	102	273	4
3	151	137	144	186	163	156	142	146	154	100	88	275	265	255	262	268	272	266	260	291	216	308	153	107	197	308	88
4	314	264	276	253	201	220	179	148	137	119	40	285	260	264	269	271	275	273	275	279	290	165	179	161	242	314	40
5	167	147	119	121	126	144	111	118	129	97	76	51	46	51	64	109	84	60	84	73	98	112	105	91	99	167	46
6	77	87	78	82	72	81	86	82	79	65	59	80	122	47	324	150	242	285	263	202	169	172	142	128	99	324	47
7	180	172	180	165	196	179	176	176	137	106	240	252	250	241	252	259	248	255	259	284	283	297	242	159	219	297	106
8	135	102	183	195	153	153	142	127	125	99	92	12	266	261	263	260	268	269	277	275	137	191	191	105	180	277	12
9	301	335	180	185	186	169	150	154	110	90	100	348	242	257	245	262	265	268	267	279	27	127	239	90	216	348	27
10	187	149	173	188	179	183	148	138	152	115	122	246	256	250	240	273	245	241	222	264	275	289	283	244	214	289	115
11	82	224	177	117	71	51	69	46	41	40	43	48	48	43	36	46	38	31	57	63	64	53	53	89	58	224	31
12	62	52	50	56	89	94	70	67	71	68	64	65	130	135	132	126	110	96	45	67	101	62	51	70	80	135	45
13	66	85	60	56	49	58	59	56	58	61	54	52	53	97	102	46	50	47	90	92	51	70	70	84	65	102	46
14	65	60	55	55	69	57	53	52	53	51	52	44	57	91	118	46	45	44	76	102	131	123	134	135	72	135	44
15	211	184	36	333	210	50	178	76	137	108	253	234	281	233	254	273	262	255	259	286	280	251	272	272	250	333	36
16	273	276	235	153	176	149	188	120	104	195	257	233	236	223	226	198	203	178	329	308	275	329	273	276	228	329	104
17	306	301	54	50	41	40	40	53	46	50	42	47	67	232	231	236	223	250	256	279	276	198	201	174	338	306	40
18	183	145	152	155	139	177	149	169	172	108	142	267	259	251	267	275	272	274	275	296	139	195	199	165	197	296	108
19	186	159	179	134	150	123	95	100	131	103	123	303	259	272	265	277	262	236	274	258	246	285	278	173	209	303	95
20	152	184	179	174	210	172	163	150	136	134	133	259	237	238	263	222	208	191	220	239	269	79	210	222	196	269	79
21	226	238	235	165	175	154	133	148	128	191	217	226	227	210	202	197	205	170	205	231	216	223	225	219	200	238	128
22	224	226	234	208	217	205	222	227	210	208	234	217	227	200	222	213	211	214	240	204	209	223	233	227	219	240	200
23	233	233	224	222	222	213	219	214	221	219	204	201	207	223	229	211	215	228	245	236	231	267	271	261	227	271	201
24	211	282	291	272	274	228	197	156	233	159	231	236	225	224	246	60	302	295	302	153	183	164	121	120	224	302	60
25	175	94	173	167	170	159	177	178	132	235	244	265	232	246	260	261	269	253	240	91	329	5	314	42	218	329	5
26	138	166	163	157	117	128	110	122	109	108	117	153	147	201	240	217	195	220	350	254	306	303	296	54	161	350	54
27	360	162	169	151	167	154	162	60	88	118	200	195	209	207	207	214	198	201	217	221	219	219	219	218	188	360	60
28	208	207	227	202	218	227	217	217	209	219	220	216	206	206	213	219	215	199	203	221	217	229	239	227	216	239	199
Avg	181	173	168	157	159	148	136	122	120	109	115	272	231	230	241	240	243	246	262	244	221	204	209	152	184	--	--
Max	360	335	291	333	274	228	222	227	233	235	257	348	281	272	324	277	302	295	350	308	329	329	314	276	--	360	--
Min	62	52	36	50	41	40	39	43	41	40	40	12	42	3	36	4	38	31	45	63	27	5	51	42	--	--	3

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, WD_10m"
Month: Mar 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	215	231	221	220	229	254	192	131	109	182	208	205	194	193	199	216	186	217	198	224	217	205	204	223	205	254	109	
2	259	257	265	267	211	217	204	202	203	204	207	204	178	251	219	286	210	221	269	90	124	83	102	118	211	286	83	
3	104	135	189	109	155	166	183	160	106	145	254	216	216	220	245	285	256	184	263	293	294	238	194	178	199	294	104	
4	193	188	183	185	195	163	194	168	128	53	50	247	262	253	256	237	240	241	254	270	111	116	54	74	196	270	50	
5	77	82	101	50	53	50	48	49	59	51	53	47	44	38	37	49	42	48	60	68	62	83	86	59	58	101	37	
6	87	59	62	69	48	51	53	53	50	55	54	68	88	75	107	109	123	128	125	85	66	80	78	56	76	128	48	
7	63	66	58	56	72	69	64	61	56	50	50	85	99	107	132	122	172	206	258	119	87	108	166	124	92	258	50	
8	236	276	--	291	153	174	187	169	144	67	261	256	262	239	242	232	222	222	272	284	275	299	292	299	244	299	67	
9	293	258	253	233	346	182	175	162	113	75	267	258	249	241	277	235	263	235	251	283	308	315	328	339	261	346	75	
10	344	182	125	119	126	123	107	111	94	67	61	64	66	342	214	265	249	224	250	269	284	162	125	169	138	344	61	
11	119	98	121	133	137	143	102	88	65	59	97	106	126	141	124	178	67	80	61	85	131	95	125	110	108	178	59	
12	83	90	67	63	59	116	125	148	95	46	43	43	50	36	328	51	69	358	20	20	34	33	35	36	54	358	20	
13	40	52	52	52	73	48	43	39	39	48	51	49	63	131	103	76	41	38	57	47	47	51	99	82	58	131	38	
14	115	56	55	60	48	54	53	58	55	53	93	122	94	64	59	86	82	109	131	84	111	102	100	123	82	131	48	
15	123	112	102	88	88	51	61	72	121	97	71	91	74	86	111	76	117	131	119	93	105	108	116	84	96	131	51	
16	76	81	73	70	68	57	54	57	62	96	122	118	118	115	160	192	61	48	42	60	94	100	96	80	85	192	42	
17	75	81	93	89	79	77	78	72	61	64	109	144	124	145	251	305	260	234	279	293	282	302	283	243	85	305	61	
18	228	239	249	255	233	233	227	115	148	180	176	210	259	235	224	221	287	246	267	303	124	126	135	95	216	303	95	
19	143	71	128	126	286	236	229	222	202	110	228	237	245	270	254	256	295	296	249	239	249	262	242	265	238	296	71	
20	9	86	138	132	128	128	123	87	79	54	99	133	128	177	161	350	49	356	324	64	36	135	119	100	95	356	9	
21	109	145	155	135	155	169	130	135	152	256	293	247	249	252	260	253	250	241	259	281	283	290	207	280	223	293	109	
22	173	186	202	160	125	151	154	139	137	258	248	250	280	266	232	254	251	246	187	219	79	184	146	113	195	280	79	
23	117	211	224	249	212	163	184	133	113	183	208	233	197	237	207	209	229	202	205	251	290	335	193	166	205	335	113	
24	159	188	174	236	174	149	139	130	100	237	192	140	223	248	247	252	227	225	193	336	40	211	122	173	190	336	40	
25	117	135	223	166	152	195	158	124	92	13	255	246	234	232	251	254	260	248	266	283	285	320	344	134	224	344	13	
26	87	54	47	43	40	36	41	41	42	41	48	59	53	45	65	77	67	55	310	169	155	159	154	135	65	310	36	
27	122	127	147	137	137	140	126	117	81	67	52	51	10	273	311	268	219	250	263	272	267	302	316	284	190	316	10	
28	196	145	149	194	183	203	190	155	115	122	251	252	234	239	259	250	231	229	265	354	286	346	314	307	226	354	115	
29	355	171	194	199	192	186	175	127	88	99	285	266	243	254	196	191	145	230	183	114	179	169	180	177	185	355	88	
30	171	175	168	174	147	185	183	148	118	124	127	183	254	234	261	279	300	279	282	303	333	90	106	129	187	333	90	
31	181	161	212	196	235	179	136	120	98	106	264	238	234	266	258	261	224	215	213	276	315	326	181	220	216	326	98	
Avg	122	133	147	139	134	145	136	116	98	85	129	178	191	225	223	240	225	227	249	311	17	105	133	129	148	--	--	
Max	355	276	265	291	346	254	229	222	203	258	293	266	280	342	328	350	300	358	324	354	333	346	344	339	--	358	--	
Min	9	52	47	43	40	36	41	39	39	13	43	43	10	36	37	49	41	38	20	20	34	33	35	36	--	--	9	

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, DeltaTemp_C"
Month: Jan 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	-0.04	-0.07	-0.05	-0.02	0.07	0.07	0.34	0.49	0.11	-0.19	-0.23	-0.26	-0.20	-0.27	-0.01	-0.17	0.08	0.38	0.51	0.72	0.72	0.54	0.40	0.41	0.14	0.72	-0.27
2	0.47	0.62	0.61	0.65	0.56	0.50	0.48	0.46	0.28	0.00	-0.34	-0.51	-0.64	-0.47	-0.24	-0.11	0.04	0.07	0.04	0.09	0.31	0.23	0.66	0.34	0.17	0.66	-0.64
3	0.75	0.78	0.90	0.39	0.44	0.93	0.75	0.60	0.04	-0.37	-0.49	-0.38	-0.45	-0.38	-0.33	-0.41	0.00	0.32	0.31	0.54	0.85	0.59	0.71	0.70	0.28	0.93	-0.49
4	0.44	0.49	0.41	0.36	0.37	0.39	0.36	0.29	0.03	-0.13	-0.34	-0.40	-0.38	-0.34	-0.27	-0.16	0.26	0.39	0.48	0.51	0.53	0.49	0.40	0.42	0.19	0.53	-0.40
5	0.42	0.38	0.40	0.41	0.43	0.46	0.45	0.37	-0.02	-0.25	-0.38	-0.52	-0.52	-0.54	-0.36	-0.17	0.12	0.46	0.48	0.39	0.35	0.49	0.48	0.47	0.16	0.49	-0.54
6	0.49	0.45	0.43	0.41	0.36	0.40	0.42	0.36	0.11	-0.26	-0.56	-0.65	-0.78	-0.73	-0.51	-0.27	0.20	0.48	0.48	0.46	0.66	0.53	0.45	0.41	0.14	0.66	-0.78
7	0.42	0.42	0.39	0.39	0.38	0.36	0.36	0.32	0.06	-0.15	-0.29	-0.64	-0.73	-0.68	-0.50	-0.09	0.10	0.30	0.36	0.34	0.27	0.25	0.25	0.22	0.09	0.42	-0.73
8	0.16	0.16	0.12	0.05	0.02	0.03	0.03	0.01	-0.04	-0.13	-0.21	-0.30	-0.45	-0.63	-0.33	-0.20	-0.08	0.05	0.07	0.07	0.10	0.10	0.13	0.13	-0.05	0.16	-0.63
9	0.18	0.21	0.18	0.16	0.14	0.14	0.13	0.10	0.06	-0.32	-0.83	-0.95	-1.03	-0.67	-0.66	-0.49	-0.13	0.14	0.20	0.24	0.22	0.17	0.17	0.13	-0.11	0.24	-1.03
10	0.12	0.12	0.11	0.13	0.16	0.15	0.15	0.05	-0.08	-0.43	-0.66	-0.92	-0.75	-0.90	-0.30	0.03	-0.03	0.04	0.16	0.29	0.32	0.18	0.66	0.31	-0.04	0.66	-0.92
11	0.32	0.41	0.26	0.17	0.21	0.29	0.20	0.34	0.09	-0.33	-0.43	-0.49	-0.71	-1.50	-0.95	-0.77	-0.14	0.07	0.12	0.15	0.27	0.16	0.36	0.43	-0.06	0.43	-1.50
12	0.32	0.14	0.06	0.12	0.13	0.22	0.06	0.09	-0.04	-0.51	-0.51	-0.38	-0.26	-0.21	-0.17	-0.16	-0.08	0.18	0.34	0.46	0.33	0.40	0.34	0.74	0.07	0.74	-0.51
13	0.44	0.57	0.50	0.43	0.54	0.43	0.35	0.37	0.00	-0.25	-0.37	-0.53	-0.14	0.02	-0.02	-0.11	-0.09	0.23	0.32	0.38	0.21	0.24	0.15	0.00	0.15	0.57	-0.53
14	0.14	0.20	0.16	0.17	0.24	0.23	0.10	0.22	0.01	-0.57	-0.87	-0.90	-1.07	-1.09	-0.92	-0.68	-0.19	0.47	0.66	0.44	0.32	0.31	0.31	0.44	-0.08	0.66	-1.09
15	0.37	0.30	0.31	0.34	0.23	0.21	0.22	0.17	-0.20	-0.41	-0.62	-0.76	-0.78	-0.73	-0.55	-0.35	-0.07	0.45	0.86	0.65	0.52	0.42	0.35	0.29	0.05	0.86	-0.78
16	0.27	0.25	0.25	0.29	0.28	0.31	0.36	0.30	-0.11	-0.44	-0.70	-0.88	-0.94	-0.95	-0.80	-0.76	-0.13	0.46	0.46	0.62	0.56	0.49	0.58	0.61	0.02	0.62	-0.95
17	0.68	0.55	1.00	1.10	1.12	1.02	1.15	0.95	-0.12	-0.53	-0.71	-0.92	-1.19	-0.84	-0.39	-0.31	-0.11	0.15	0.36	0.99	0.83	0.78	0.75	1.00	0.30	1.15	-1.19
18	1.01	0.77	0.64	0.69	0.60	0.44	0.41	0.35	-0.13	-0.53	-0.74	-0.99	-1.15	-1.14	-0.69	-0.60	-0.06	0.39	0.75	0.91	1.32	1.08	0.67	0.73	0.20	1.32	-1.15
19	0.66	0.67	1.19	0.90	0.40	0.59	0.75	1.14	-0.24	-0.60	-0.82	-0.81	-0.51	-0.68	-0.78	-0.55	-0.33	0.28	0.85	0.66	1.04	0.70	0.94	0.83	0.26	1.19	-0.82
20	0.77	1.23	1.34	1.31	1.06	0.53	0.49	0.33	-0.25	-0.67	-0.81	-1.05	-1.06	-0.93	-0.82	-0.44	-0.13	0.31	0.63	0.60	0.60	0.63	0.83	0.73	0.22	1.34	-1.06
21	0.51	0.59	0.77	0.80	0.61	0.87	0.78	0.66	0.13	-0.71	-0.88	-0.79	-0.86	-0.79	-0.82	-0.64	-0.35	0.41	0.35	0.15	0.25	0.20	0.29	0.32	0.08	0.87	-0.88
22	0.34	0.27	0.23	0.27	0.34	0.27	0.24	0.18	-0.07	-0.32	-0.55	-0.67	-0.85	-1.04	-0.99	-0.68	-0.29	0.24	0.30	0.26	0.16	0.15	0.14	0.16	-0.08	0.34	-1.04
23	0.18	0.20	0.15	0.16	0.17	0.17	0.22	0.08	-0.29	-0.59	-0.88	-1.02	-1.01	-0.73	-0.57	-0.54	-0.25	0.22	0.24	0.30	0.29	0.34	0.27	0.21	-0.11	0.34	-1.02
24	0.16	0.13	0.16	0.19	0.21	0.19	0.20	0.15	-0.18	-0.38	-0.53	-0.69	-0.75	-0.67	-0.53	-0.34	-0.05	0.26	0.31	0.35	0.36	0.32	0.30	0.31	-0.02	0.36	-0.75
25	0.32	0.37	0.36	0.34	0.29	0.30	0.32	0.32	0.19	-0.05	-0.30	-0.50	-0.58	-0.78	-0.54	-0.11	0.07	0.22	0.38	0.28	0.32	0.41	0.35	0.40	0.10	0.41	-0.78
26	0.35	0.34	0.34	0.33	0.28	0.27	0.25	0.23	0.12	-0.40	-0.54	-0.57	-0.32	-0.44	-0.48	-0.30	-0.10	0.09	0.15	0.22	0.24	0.41	0.16	0.34	0.04	0.41	-0.57
27	0.19	0.13	0.17	0.29	0.32	0.12	0.11	0.32	-0.06	--	--	-0.51	-0.65	-1.07	-0.75	-0.64	-0.39	0.09	0.61	0.71	0.42	0.70	0.86	0.92	0.09	0.92	-1.07
28	0.84	0.70	0.78	0.76	0.69	0.80	0.79	0.73	-0.35	-0.59	-0.88	-0.74	-1.06	-0.96	-0.74	-0.30	-0.13	-0.01	0.25	0.60	0.86	0.43	0.59	0.47	0.15	0.86	-1.06
29	0.33	0.26	0.47	0.22	0.25	0.34	0.32	0.25	0.17	0.03	-0.24	-0.40	-0.33	-0.35	-0.27	0.20	0.22	0.32	0.23	0.28	0.34	0.27	0.16	0.14	0.13	0.47	-0.40
30	0.13	0.12	0.07	0.01	0.06	0.04	0.03	0.01	-0.04	-0.04	-0.01	-0.05	0.00	0.00	-0.01	-0.05	-0.04	-0.01	0.04	0.04	0.00	0.00	-0.02	0.07	0.02	0.13	-0.05
31	0.05	-0.01	0.01	0.02	0.03	0.02	0.07	0.07	-0.04	-0.22	-0.27	-0.27	-0.24	-0.29	-0.40	-0.34	-0.23	-0.14	-0.09	-0.02	0.06	0.24	0.29	0.33	-0.06	0.33	-0.40
Avg	0.38	0.38	0.41	0.38	0.35	0.36	0.35	0.33	-0.03	-0.34	-0.53	-0.63	-0.66	-0.67	-0.51	-0.34	-0.07	0.24	0.36	0.41	0.44	0.40	0.42	0.42	0.08	--	--
Max	1.01	1.23	1.34	1.31	1.12	1.02	1.15	1.14	0.28	0.03	-0.01	-0.05	0.00	0.02	-0.01	0.20	0.26	0.48	0.86	0.99	1.32	1.08	0.94	1.00	--	1.34	--
Min	-0.04	-0.07	-0.05	-0.02	0.02	0.02	0.03	0.01	-0.35	-0.71	-0.88	-1.05	-1.19	-1.50	-0.99	-0.77	-0.39	-0.14	-0.09	-0.02	0.00	0.00	-0.02	0.00	--	--	-1.50

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, DeltaTemp_C"
Month: Feb 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.25	0.40	0.67	0.42	0.67	0.67	0.57	0.34	-0.04	-0.36	-0.82	-1.00	-1.11	-0.98	-0.55	-0.44	-0.25	-0.04	0.19	0.44	0.76	1.05	0.55	0.57	0.08	1.05	-1.11
2	0.54	0.51	0.55	0.41	0.55	0.44	0.39	0.45	-0.21	-0.70	-1.00	-1.20	-1.31	-0.99	-1.07	-0.78	-0.24	0.07	0.26	0.85	0.88	1.01	1.09	1.12	0.07	1.12	-1.31
3	0.84	0.75	0.60	1.10	1.09	0.65	0.66	0.78	-0.09	-0.56	-0.89	-0.72	-0.52	-0.67	-0.62	-0.38	-0.15	0.07	0.26	0.67	1.24	1.04	0.92	1.11	0.30	1.24	-0.89
4	1.33	1.01	0.97	0.83	1.01	1.34	1.05	0.99	0.13	-0.57	-0.75	-0.47	-0.67	-0.68	-0.50	-0.39	-0.26	0.02	0.14	0.39	1.28	1.12	1.23	1.11	0.40	1.34	-0.75
5	1.63	1.08	0.51	0.58	0.79	0.85	0.53	0.53	-0.07	-0.34	-0.67	-0.90	-1.10	-1.20	-1.04	-0.63	-0.32	0.33	0.40	0.63	0.81	0.77	0.94	0.77	0.20	1.63	-1.20
6	0.72	0.87	0.70	0.69	0.57	0.48	0.48	0.44	-0.13	-0.66	-1.07	-1.10	-1.10	-0.89	-0.92	-0.78	-0.45	0.09	0.64	0.99	0.76	0.79	0.72	1.01	0.12	1.01	-1.10
7	0.91	0.96	1.10	1.01	1.09	1.37	1.22	0.58	0.14	-0.55	-0.42	-0.63	-0.76	-0.94	-0.74	-0.73	-0.46	0.00	0.20	0.25	0.39	0.60	0.97	1.06	0.28	1.37	-0.94
8	0.91	0.74	0.96	0.94	0.95	0.98	1.17	0.58	-0.26	-0.61	-0.87	-0.74	-0.55	-0.69	-0.60	-0.54	-0.27	0.01	0.10	0.45	0.97	1.30	0.69	0.72	0.26	1.30	-0.87
9	1.32	1.24	1.26	1.40	1.26	1.11	0.82	0.57	-0.23	-0.51	-0.86	-0.97	-0.96	-0.81	-0.90	-0.64	-0.34	0.01	0.19	0.36	0.56	0.83	1.15	0.87	0.28	1.40	-0.97
10	1.24	0.91	0.93	1.11	1.50	1.39	1.10	0.53	-0.16	-0.70	-0.70	-0.63	-0.71	-0.80	-0.85	-0.64	-0.46	-0.01	0.15	0.15	0.25	0.20	0.28	0.76	0.20	1.50	-0.85
11	1.20	1.08	0.85	0.73	0.77	0.53	0.38	0.29	-0.11	-0.38	-0.69	-0.84	-1.08	-1.00	-0.72	-0.58	-0.26	0.19	0.33	0.22	0.19	0.29	0.30	0.26	0.08	1.20	-1.08
12	0.25	0.21	0.22	0.19	0.25	0.13	0.25	0.05	-0.29	-0.59	-0.67	-0.93	-0.99	-0.99	-0.82	-0.58	-0.33	0.11	0.37	0.30	0.32	0.43	0.29	0.21	-0.11	0.43	-0.99
13	0.20	0.21	0.24	0.26	0.25	0.22	0.20	0.10	-0.32	-0.64	-0.85	-1.06	-1.23	-1.20	-1.02	-0.86	-0.53	0.26	0.53	0.70	0.44	0.37	0.53	0.59	-0.11	0.70	-1.23
14	0.56	0.39	0.32	0.28	0.27	0.29	0.31	0.14	-0.31	-0.65	-0.95	-1.04	-1.32	-1.20	-1.04	-0.75	-0.13	0.16	0.30	0.40	0.60	0.50	0.43	0.35	-0.09	0.60	-1.32
15	0.62	0.83	0.42	0.43	0.45	0.56	0.55	0.51	0.10	-0.29	-0.40	-0.55	-0.72	-0.52	-0.42	-0.29	-0.21	-0.03	0.10	0.14	0.12	0.12	0.17	0.34	0.08	0.83	-0.72
16	0.43	0.29	0.81	0.88	0.56	0.65	0.77	0.33	-0.41	-0.47	-0.55	-0.83	-1.04	-0.97	-0.80	-0.52	-0.39	-0.07	0.08	0.12	0.15	0.26	0.15	0.18	-0.02	0.88	-1.04
17	0.18	0.22	0.33	0.28	0.27	0.23	0.24	0.08	-0.33	-0.76	-0.97	-1.33	-1.22	-1.17	-1.14	-0.88	-0.59	-0.12	0.14	0.14	0.19	0.87	0.76	1.24	-0.14	1.24	-1.33
18	1.16	0.68	0.86	1.10	1.16	1.09	0.97	0.57	-0.26	-0.72	-0.80	-0.49	-0.80	-0.80	-0.61	-0.54	-0.25	-0.05	0.15	0.26	0.82	0.93	0.92	1.18	0.27	1.18	-0.80
19	0.79	0.98	1.42	0.82	0.77	0.63	0.50	0.49	-0.10	-0.68	-0.64	-0.70	-0.59	-0.76	-0.59	-0.40	-0.39	-0.08	0.23	0.25	0.69	1.08	0.83	1.15	0.24	1.42	-0.76
20	0.87	0.88	0.87	1.03	1.22	0.87	1.15	0.98	0.34	-0.42	-0.53	-0.53	-0.72	-0.86	-0.76	-0.46	-0.25	-0.08	0.11	0.18	0.25	0.54	0.69	0.72	0.25	1.22	-0.86
21	0.42	0.37	0.35	0.72	1.06	0.90	0.90	0.64	-0.51	-0.62	-0.84	-0.95	-0.91	-0.85	-0.78	-0.63	-0.42	-0.05	0.20	0.31	0.23	0.26	0.21	0.25	0.01	1.06	-0.95
22	0.17	0.21	0.37	0.43	0.49	0.38	0.33	0.10	-0.14	-0.57	-0.79	-0.94	-1.02	-0.97	-0.54	-0.55	-0.22	-0.12	0.06	0.24	0.16	0.02	-0.04	0.17	-0.12	0.49	-1.02
23	0.02	-0.02	-0.04	-0.08	-0.10	-0.10	-0.12	-0.11	-0.19	-0.47	-0.51	-0.59	-0.52	-0.59	-0.84	-0.48	-0.46	-0.14	0.01	0.12	0.29	0.08	0.03	0.07	-0.20	0.29	-0.84
24	0.07	-0.01	0.03	0.14	0.11	-0.02	-0.09	-0.07	0.03	-0.15	-0.38	-0.75	-1.02	-0.43	-0.33	0.21	0.00	-0.07	0.36	0.57	0.58	0.64	0.36	0.49	0.01	0.64	-1.02
25	0.72	1.10	1.04	0.75	1.03	0.63	1.06	0.44	-0.41	-0.54	-0.67	-0.52	-1.03	-0.85	-0.81	-0.69	-0.45	-0.16	0.07	0.24	0.40	0.70	0.24	0.47	0.12	1.10	-1.03
26	0.76	0.98	0.82	0.82	0.85	0.72	0.57	0.23	-0.47	-0.85	-1.18	-1.26	-1.31	-1.12	-0.98	-0.81	-0.53	-0.15	0.17	0.22	0.22	0.34	0.23	0.53	-0.05	0.98	-1.31
27	1.01	0.73	0.59	0.83	0.92	0.75	0.44	0.66	-0.49	-0.82	-1.00	-1.22	-1.18	-1.08	-0.96	-0.71	-0.44	-0.08	0.05	0.10	0.11	0.07	0.09	0.08	-0.06	1.01	-1.22
28	0.06	-0.01	0.01	0.00	0.00	-0.02	-0.03	-0.06	-0.08	-0.12	-0.14	-0.11	-0.15	-0.11	-0.08	-0.09	-0.05	-0.03	-0.01	-0.01	-0.02	0.02	0.04	0.02	-0.04	0.06	-0.15
Avg	0.68	0.63	0.64	0.65	0.71	0.63	0.58	0.40	-0.17	-0.55	-0.74	-0.82	-0.92	-0.86	-0.75	-0.55	-0.32	0.00	0.21	0.35	0.49	0.58	0.53	0.62	0.08	--	--
Max	1.63	1.24	1.42	1.40	1.50	1.39	1.22	0.99	0.34	-0.12	-0.14	-0.11	-0.15	-0.11	-0.08	0.21	0.00	0.33	0.64	0.99	1.28	1.30	1.23	1.24	--	1.63	--
Min	0.02	-0.02	-0.04	-0.08	-0.10	-0.10	-0.12	-0.11	-0.51	-0.85	-1.18	-1.33	-1.32	-1.20	-1.14	-0.88	-0.59	-0.16	-0.01	-0.01	-0.02	0.02	-0.04	0.02	--	--	-1.33

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, DeltaTemp_C"
Month: Mar 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	0.06	0.03	0.04	0.03	0.01	0.03	0.22	-0.03	-0.64	-0.91	-0.98	-0.98	-0.99	-0.93	-0.78	-0.62	-0.29	-0.11	-0.02	0.14	0.45	0.30	0.33	0.06	-0.23	0.45	-0.99	
2	0.03	-0.03	-0.01	-0.02	0.00	-0.04	-0.06	-0.05	-0.19	-0.21	-0.35	-0.37	-0.18	-0.18	-0.16	-0.10	-0.12	-0.11	0.12	0.15	0.14	0.17	0.34	0.23	-0.04	0.34	-0.37	
3	0.21	0.01	0.15	0.30	0.46	0.50	0.41	0.13	-0.47	-0.72	-0.13	-0.58	-1.01	-1.14	-0.69	-0.60	-0.66	-0.28	-0.05	0.01	0.12	0.37	0.80	0.63	-0.09	0.80	-1.14	
4	0.72	0.67	0.63	0.79	0.70	0.94	0.85	0.15	-0.56	-1.01	-1.36	-0.62	-0.64	-0.84	-0.46	-0.63	-0.54	-0.20	0.14	0.20	0.65	0.84	0.70	0.46	0.07	0.94	-1.36	
5	0.37	0.36	0.26	0.37	0.37	0.40	0.41	0.06	-0.46	-0.76	-1.01	-1.15	-1.32	-1.37	-1.25	-1.05	-0.72	-0.03	0.55	0.56	0.50	0.28	0.33	0.41	-0.16	0.56	-1.37	
6	0.29	0.28	0.24	0.24	0.24	0.23	0.23	-0.02	-0.34	-0.62	-0.77	-0.79	-0.75	-0.85	-0.66	-0.52	-0.29	0.04	0.25	0.41	0.52	0.45	0.34	0.28	-0.07	0.52	-0.85	
7	0.27	0.37	0.39	0.40	0.32	0.31	0.33	0.00	-0.45	-0.81	-1.18	-1.18	-1.13	-1.32	-1.23	-1.24	-0.84	-0.24	0.26	0.45	0.39	0.63	1.04	0.61	-0.16	1.04	-1.32	
8	0.60	0.33	–	0.50	0.35	0.57	0.76	0.21	-0.48	-0.86	-0.62	-0.85	-0.83	-1.02	-0.95	-0.82	-0.60	-0.23	0.06	0.13	0.17	0.13	0.30	0.28	-0.12	0.76	-1.02	
9	0.44	0.55	0.83	0.93	0.66	0.91	1.04	0.88	-0.56	-0.71	-0.51	-0.76	-0.99	-1.07	-0.94	-0.83	-0.62	-0.25	0.10	0.17	0.19	0.33	0.40	0.68	0.04	1.04	-1.07	
10	0.63	0.96	0.51	0.44	0.37	0.52	0.63	0.04	-0.42	-0.94	-1.31	-1.57	-1.51	-1.19	-1.20	-0.91	-0.67	-0.26	0.12	0.14	0.47	0.63	0.70	1.15	-0.11	1.15	-1.57	
11	0.91	0.86	0.80	0.62	0.55	0.68	0.65	0.13	-0.28	-0.86	-0.84	-0.95	-1.19	-0.96	-1.05	-0.63	-0.91	-0.24	0.25	0.49	0.43	0.32	0.29	0.42	-0.02	0.91	-1.19	
12	0.52	0.60	0.66	0.65	0.77	0.61	0.51	0.44	-0.08	-0.59	-0.81	-0.74	-1.06	-1.24	-1.17	-0.42	-0.38	-0.14	0.08	0.12	0.10	0.13	0.18	0.18	-0.04	0.77	-1.24	
13	0.23	0.22	0.25	0.26	0.23	0.26	0.23	-0.07	-0.46	-0.86	-1.17	-1.35	-1.49	-0.75	-0.44	-0.89	-0.42	0.02	0.33	0.18	0.24	0.32	0.22	0.50	-0.18	0.50	-1.49	
14	0.42	0.39	0.31	0.38	0.40	0.34	0.33	-0.12	-0.49	-0.85	-0.97	-1.13	-1.34	-1.36	-1.26	-0.85	-0.61	-0.22	0.36	0.59	0.45	0.53	0.46	0.69	-0.15	0.69	-1.36	
15	0.46	0.40	0.38	0.37	0.56	0.76	0.69	-0.07	-0.50	-0.78	-1.13	-1.11	-1.19	-1.07	-0.97	-0.91	-0.52	-0.13	0.23	0.55	0.76	0.46	0.26	0.60	-0.08	0.76	-1.19	
16	0.60	0.62	0.45	0.33	0.39	0.34	0.28	-0.15	-0.53	-0.68	-0.90	-1.05	-1.28	-1.26	-1.28	-1.28	-1.07	-0.45	0.34	0.50	0.37	0.45	0.59	0.71	-0.17	0.71	-1.28	
17	0.62	0.52	0.66	0.49	0.50	0.50	0.55	-0.16	-0.65	-0.81	-1.13	-1.26	-1.34	-0.93	-0.64	-0.23	-0.22	-0.11	0.01	0.06	0.09	0.14	0.11	0.10	-0.13	0.66	-1.34	
18	0.08	0.16	0.15	0.10	0.17	0.11	0.16	0.13	-0.01	-0.35	-0.63	-0.47	-0.46	-0.58	-0.47	-0.22	-0.13	-0.17	-0.12	-0.04	-0.07	-0.06	0.03	-0.08	-0.12	0.17	-0.63	
19	-0.03	0.04	-0.03	-0.09	-0.07	-0.09	-0.08	-0.08	-0.11	-0.36	-0.43	-0.86	-0.86	-0.87	-0.84	-0.53	-0.16	-0.02	0.06	0.06	0.10	0.13	0.01	0.01	-0.21	0.13	-0.87	
20	0.15	0.23	0.37	0.42	0.36	0.48	0.23	-0.05	-0.50	-1.11	-1.18	-1.20	-1.37	-1.24	-0.81	-0.04	0.63	0.55	0.46	0.41	0.43	0.37	0.56	0.39	-0.06	0.63	-1.37	
21	0.46	0.51	0.49	0.82	0.63	0.77	0.43	-0.25	-0.45	-0.46	-0.54	-0.71	-0.88	-0.95	-0.86	-0.80	-0.60	-0.27	0.10	0.09	0.15	0.21	0.83	0.90	-0.02	0.90	-0.95	
22	0.91	0.74	0.83	0.65	0.69	0.73	0.80	0.19	-0.49	-0.57	-0.69	-0.89	-0.80	-1.05	-1.09	-0.72	-0.64	-0.26	0.19	0.68	0.51	0.74	0.74	0.82	0.09	0.91	-1.09	
23	0.79	0.89	0.71	0.65	1.08	0.98	0.86	0.03	-0.61	-0.65	-0.95	-0.97	-1.06	-0.93	-0.97	-0.86	-0.67	-0.31	0.14	0.21	0.22	0.40	0.84	1.34	0.05	1.34	-1.06	
24	0.99	1.07	1.09	1.39	1.23	1.06	0.97	-0.08	-0.64	-0.56	-0.97	-1.28	-1.18	-1.13	-1.00	-0.93	-0.66	-0.33	0.14	0.25	0.46	0.89	0.79	0.70	0.10	1.39	-1.28	
25	1.37	0.86	0.90	0.96	1.01	0.93	0.99	-0.10	-0.58	-0.90	-0.68	-0.98	-1.17	-1.24	-1.08	-0.87	-0.63	-0.35	0.05	0.06	0.09	0.27	0.60	0.64	0.01	1.37	-1.24	
26	0.51	0.50	0.35	0.27	0.24	0.23	0.19	-0.14	-0.49	-0.81	-1.13	-1.34	-1.66	-1.76	-1.38	-1.22	-0.81	-0.12	0.69	0.76	1.29	0.84	1.16	1.15	-0.11	1.29	-1.76	
27	0.73	0.77	0.58	0.61	0.70	0.59	0.49	-0.04	-0.51	-0.95	-1.44	-1.74	-1.65	-1.28	-1.14	-1.17	-0.77	-0.38	0.10	0.12	0.65	0.73	1.35	1.42	-0.09	1.42	-1.74	
28	1.33	0.99	1.23	0.98	1.09	1.31	1.43	0.40	-0.57	-0.80	-0.76	-0.85	-1.02	-1.07	-1.04	-0.89	-0.70	-0.32	0.08	0.81	0.92	0.77	1.00	1.31	0.24	1.43	-1.07	
29	1.45	0.90	1.22	1.19	1.58	1.41	1.20	-0.06	-0.64	-0.87	-0.62	-0.95	-1.12	-1.29	-1.14	-0.98	-0.73	-0.35	0.14	0.55	0.74	0.93	0.84	1.12	0.19	1.58	-1.29	
30	0.70	0.81	0.76	0.80	1.29	1.06	1.12	0.50	-0.39	-0.90	-1.18	-1.32	-0.91	-1.21	-1.00	-1.03	-0.63	-0.37	-0.01	0.12	0.35	0.74	1.13	0.82	0.05	1.29	-1.32	
31	0.76	0.55	0.88	0.83	1.63	0.70	0.81	0.06	-0.67	-0.95	-0.74	-1.10	-1.18	-1.14	-1.18	-0.98	-0.72	-0.37	0.04	0.18	0.33	0.48	0.22	0.21	-0.06	1.63	-1.18	
Avg	0.57	0.52	0.54	0.54	0.60	0.59	0.57	0.06	-0.46	-0.75	-0.88	-1.00	-1.08	-1.07	-0.94	-0.77	-0.54	-0.19	0.17	0.29	0.39	0.45	0.56	0.60	-0.05	--	--	
Max	1.45	1.07	1.23	1.39	1.63	1.41	1.43	0.88	-0.01	-0.21	-0.13	-0.37	-0.18	-0.18	-0.16	-0.04	0.63	0.55	0.69	0.81	1.29	0.93	1.35	1.42	--	1.63	--	
Min	-0.03	-0.03	-0.03	-0.09	-0.07	-0.09	-0.08	-0.25	-0.67	-1.11	-1.44	-1.74	-1.66	-1.76	-1.38	-1.28	-1.07	-0.45	-0.12	-0.04	-0.07	-0.06	0.01	-0.08	--	--	-1.76	

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, Temp_2m_C"
Month: Jan 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	-2.3	-2.6	-3.0	-3.5	-4.0	-3.9	-4.4	-4.5	-4.1	-3.4	-2.6	-2.2	-2.0	-1.6	-1.5	-0.9	-1.4	-2.2	-2.6	-2.8	-3.7	-4.0	-3.5	-3.3	-2.9	-0.9	-4.5
2	-3.4	-2.9	-2.8	-2.9	-3.0	-3.2	-3.4	-3.3	-2.6	-1.9	-1.0	-0.1	0.8	1.3	1.0	0.5	-0.1	-0.4	-0.5	-0.5	-0.9	-1.3	-1.9	-1.3	-1.4	1.3	-3.4
3	-1.7	-1.8	-2.2	-1.5	-1.8	-2.5	-3.4	-3.4	-2.9	-0.7	1.0	1.5	2.2	2.7	3.2	3.7	3.3	2.2	1.5	0.1	-0.1	-0.3	-0.1	-0.1	0.0	3.7	-3.4
4	0.2	0.1	-0.1	0.3	1.2	1.7	1.8	1.5	2.8	4.3	5.2	6.7	7.9	9.3	9.9	9.7	8.9	7.6	7.3	7.8	7.5	7.7	7.8	7.6	5.2	9.9	-0.1
5	7.3	7.5	7.7	7.4	7.3	7.5	7.3	7.2	8.0	9.4	10.7	12.0	13.1	13.9	14.7	14.1	13.5	12.6	12.4	11.4	10.3	10.7	11.5	10.6	10.3	14.7	7.2
6	10.8	10.7	10.6	10.5	9.7	9.4	9.4	9.7	11.6	12.7	12.9	14.0	15.6	16.5	16.6	16.5	16.2	15.1	13.8	12.4	12.7	12.5	12.2	12.2	12.7	16.6	9.4
7	12.3	12.4	12.1	11.8	11.8	11.5	11.0	10.9	11.5	12.4	13.3	15.3	17.4	18.0	17.9	16.7	16.7	15.5	14.7	14.2	13.2	12.3	11.4	10.4	13.5	18.0	10.4
8	9.4	8.5	7.5	6.6	6.2	5.7	5.4	5.4	5.1	4.9	5.1	6.1	7.7	9.4	9.1	9.0	8.2	7.1	6.5	6.7	7.2	6.9	7.3	6.8	7.0	9.4	4.9
9	6.8	6.4	5.9	5.8	5.6	5.2	4.8	4.4	5.0	6.8	9.1	10.2	11.1	11.0	12.0	12.2	11.0	9.5	8.7	8.7	8.3	8.0	7.1	6.4	7.9	12.2	4.4
10	5.9	5.5	5.6	5.4	5.1	5.0	5.0	5.2	5.9	6.9	8.1	9.5	10.3	10.9	10.5	8.7	9.0	8.4	8.0	8.1	7.8	7.6	8.4	7.7	7.4	10.9	5.0
11	7.6	6.9	6.5	6.7	7.1	7.1	6.3	6.8	7.1	8.5	10.2	11.1	12.0	14.3	15.0	14.5	12.9	11.9	11.6	11.1	9.2	8.9	9.3	8.8	9.6	15.0	6.3
12	8.2	8.1	7.9	7.9	7.9	8.3	7.8	7.6	8.4	9.7	10.3	10.5	10.3	10.9	10.9	10.9	10.6	10.3	9.1	8.4	8.2	8.8	9.1	8.4	9.1	10.9	7.6
13	8.6	8.8	8.5	9.3	7.9	7.8	7.2	7.3	7.4	8.2	9.0	10.0	9.1	7.9	7.4	6.6	7.1	7.4	6.8	5.7	5.5	5.0	5.0	5.2	7.4	10.0	5.0
14	4.1	3.5	4.0	4.0	4.0	3.9	3.8	3.8	5.1	5.9	7.0	7.6	8.7	9.6	9.9	10.0	9.7	8.5	7.0	6.2	6.5	5.3	5.5	5.9	6.2	10.0	3.5
15	5.8	5.3	5.0	5.5	3.9	3.7	4.2	4.2	5.1	6.6	8.1	9.1	10.5	11.4	12.4	13.0	12.1	10.0	9.2	9.2	8.9	9.0	8.9	8.6	7.9	13.0	3.7
16	8.1	7.5	7.1	6.8	6.6	6.6	6.8	7.0	8.2	9.6	11.2	12.2	12.8	14.2	15.1	14.8	13.8	12.0	10.6	10.1	9.8	10.0	9.8	9.4	10.0	15.1	6.6
17	8.3	7.1	6.6	5.5	6.9	6.1	5.3	5.1	7.6	10.7	12.9	15.2	16.4	17.1	16.2	15.6	15.0	14.1	13.3	11.6	10.9	11.6	12.1	10.6	10.9	17.1	5.1
18	10.4	10.3	9.1	10.5	9.9	10.2	10.1	9.8	11.4	12.8	14.0	14.9	16.6	18.1	18.4	18.1	17.3	15.6	15.0	13.1	12.7	12.4	12.2	12.0	13.1	18.4	9.1
19	12.5	12.8	11.2	9.9	10.3	10.1	10.0	9.0	10.6	13.6	16.3	17.6	17.5	17.9	18.2	17.6	17.3	15.6	14.1	13.8	12.7	11.7	11.4	10.9	13.4	18.2	9.0
20	11.1	9.9	9.5	9.1	7.2	8.1	7.9	7.9	9.6	12.4	14.7	16.1	17.1	17.3	17.6	17.2	16.4	14.7	13.1	12.0	11.6	11.8	11.8	12.2	12.3	17.6	7.2
21	12.4	12.3	11.7	11.4	10.8	10.7	9.9	9.8	10.6	12.3	13.2	13.3	13.8	13.7	13.8	13.6	12.8	9.2	9.1	8.2	8.0	7.0	7.0	6.8	10.9	13.8	6.8
22	6.6	6.4	5.8	4.9	4.2	3.9	3.4	2.9	2.9	3.2	4.0	5.3	6.7	7.9	8.5	8.6	7.9	6.7	5.9	5.1	4.5	3.9	2.4	1.9	5.1	8.6	1.9
23	1.9	2.1	1.9	1.5	1.2	1.0	0.8	1.0	2.3	4.2	5.3	6.6	8.1	8.9	9.6	10.1	9.9	8.2	7.1	7.0	6.7	7.3	6.8	6.5	5.2	10.1	0.8
24	6.5	6.3	6.4	6.3	6.1	5.7	5.1	5.3	6.0	6.4	8.4	9.8	11.5	12.8	13.8	15.3	15.3	12.9	10.9	10.7	11.1	10.9	10.5	10.2	9.3	15.3	5.1
25	9.8	9.5	9.7	9.7	8.6	8.8	9.0	9.2	9.5	10.2	11.2	12.4	13.8	15.7	16.1	15.7	15.1	13.6	12.3	11.9	11.0	12.1	12.1	12.3	11.6	16.1	8.6
26	12.2	12.3	11.9	11.9	11.6	11.4	11.1	11.4	11.6	13.2	14.5	15.1	15.4	14.6	14.8	14.9	14.7	14.1	13.6	13.2	13.0	12.5	11.5	11.2	13.0	15.4	11.1
27	12.2	11.6	11.1	10.7	10.0	10.5	10.4	9.6	10.7	--	--	12.8	13.3	14.9	16.1	16.1	15.7	14.2	12.0	11.3	12.0	12.6	11.7	12.8	12.4	16.1	9.6
28	11.0	10.9	10.1	9.4	9.2	9.1	9.1	8.4	10.5	13.2	15.8	16.5	17.8	18.3	17.4	16.1	15.4	14.8	14.3	13.3	12.5	13.5	13.5	12.7	13.0	18.3	8.4
29	12.5	12.5	12.2	12.2	12.1	11.9	11.9	12.9	13.1	13.2	13.7	15.0	15.8	16.7	16.3	14.8	12.8	12.1	10.9	10.4	10.3	10.1	10.0	9.8	12.6	16.7	9.8
30	9.5	10.2	9.3	8.7	8.7	8.6	8.5	8.3	7.7	7.4	8.5	8.7	8.6	8.3	8.1	7.5	7.3	7.3	6.9	7.1	7.0	7.0	7.3	7.2	8.1	10.2	6.9
31	7.0	7.0	7.1	7.0	6.9	6.7	6.6	6.7	7.2	7.9	8.3	8.8	8.2	8.0	8.8	9.0	8.8	8.2	7.8	7.5	7.6	7.7	8.0	8.0	7.7	9.0	6.6
Avg	7.5	7.3	6.9	6.7	6.4	6.3	6.1	6.0	6.9	8.0	9.3	10.4	11.2	11.9	12.2	12.0	11.4	10.2	9.4	8.8	8.5	8.4	8.3	8.0	8.7	--	--
Max	12.5	12.8	12.2	12.2	12.1	11.9	11.9	12.9	13.1	13.6	16.3	17.6	17.8	18.3	18.4	18.1	17.3	15.6	15.0	14.2	13.2	13.5	13.5	12.8	--	18.4	--
Min	-3.4	-2.9	-3.0	-3.5	-4.0	-3.9	-4.4	-4.5	-4.1	-3.4	-2.6	-2.2	-2.0	-1.6	-1.5	-0.9	-1.4	-2.2	-2.6	-2.8	-3.7	-4.0	-3.5	-3.3	--	--	-4.5

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, Temp_2m_C"
Month: Feb 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	7.7	7.1	6.0	6.0	6.0	6.3	7.1	7.4	8.1	9.0	10.2	11.7	12.9	13.8	11.8	11.8	11.2	10.6	9.9	9.1	8.6	8.5	10.4	10.5	9.2	13.8	6.0
2	9.9	9.4	9.0	9.0	7.9	7.6	7.2	8.1	9.4	11.5	13.0	13.6	14.8	15.6	16.1	16.4	15.3	14.4	13.2	11.4	11.3	10.4	10.3	10.2	11.5	16.4	7.2
3	9.8	10.0	10.2	9.4	8.8	8.7	8.6	8.7	10.0	13.3	15.5	16.9	16.5	16.7	16.9	16.7	16.0	14.8	13.6	13.0	12.5	13.6	12.5	12.2	12.7	16.9	8.6
4	12.2	12.3	12.0	11.5	9.8	9.8	8.8	8.6	10.0	12.9	15.7	15.5	16.4	17.1	17.3	17.1	16.7	15.6	14.5	13.8	13.3	12.5	13.2	12.8	13.3	17.3	8.6
5	11.3	11.3	11.4	11.1	10.4	9.8	9.8	10.0	12.4	14.9	17.0	18.5	19.9	21.2	21.9	21.9	21.0	18.4	17.0	16.3	15.4	14.8	14.6	14.1	15.2	21.9	9.8
6	14.4	13.8	13.9	13.5	13.4	13.1	12.8	12.7	14.3	16.0	18.1	19.9	21.1	21.7	22.3	22.2	21.4	19.9	18.2	15.9	14.8	15.3	15.8	14.6	16.6	22.3	12.7
7	14.3	13.9	13.6	12.7	12.0	11.5	11.2	12.1	13.1	15.8	17.6	18.1	18.7	19.4	19.3	19.1	18.4	16.9	15.8	15.4	15.0	15.3	14.6	12.8	15.3	19.4	11.2
8	13.1	12.5	12.3	12.0	10.9	10.1	10.4	11.0	13.2	15.6	18.0	19.4	19.3	20.1	20.0	20.1	19.5	18.4	17.3	16.5	15.0	14.9	15.7	15.6	15.4	20.1	10.1
9	15.2	14.8	13.6	12.0	11.5	11.2	11.3	11.7	14.2	17.2	20.4	21.3	22.1	22.1	22.1	21.3	20.7	19.5	18.4	18.2	17.6	16.8	17.2	15.5	16.9	22.1	11.2
10	15.4	15.2	14.2	13.2	11.6	11.5	10.9	11.1	13.1	16.5	19.0	19.7	19.6	19.9	20.2	19.5	18.9	17.6	16.6	16.2	15.6	15.7	15.5	14.5	15.9	20.2	10.9
11	13.4	12.7	11.0	11.0	11.4	12.3	10.8	12.1	12.6	13.0	14.2	15.5	16.6	17.0	17.0	17.1	16.7	16.1	15.2	14.3	13.3	12.6	11.8	11.9	13.7	17.1	10.8
12	10.9	9.9	9.5	9.0	9.0	8.2	8.2	8.8	10.2	11.8	12.7	14.3	15.4	16.0	16.5	16.8	16.6	15.3	13.5	12.7	11.8	11.2	10.9	10.8	12.1	16.8	8.2
13	10.2	10.5	10.4	9.8	9.7	9.0	8.6	9.0	10.4	12.3	13.6	14.6	16.2	17.9	18.7	18.6	18.2	16.7	15.7	13.9	14.7	14.4	13.7	13.1	13.3	18.7	8.6
14	13.1	13.7	13.5	13.1	12.5	12.4	12.3	12.5	13.7	15.4	17.3	18.5	19.9	20.7	21.2	20.5	19.3	18.2	16.9	16.0	15.1	14.7	14.4	14.3	15.8	21.2	12.3
15	14.8	14.1	13.6	13.8	13.5	12.9	12.3	12.3	12.8	14.2	15.2	15.6	15.8	15.4	15.5	15.5	15.4	14.8	14.1	13.7	13.5	13.2	12.9	12.8	14.1	15.8	12.3
16	12.6	12.7	11.4	10.0	9.9	9.4	9.3	9.2	10.8	12.7	13.0	13.9	15.3	15.9	15.7	15.2	15.3	14.8	14.2	13.7	13.6	13.5	13.7	13.6	12.9	15.9	9.2
17	13.1	12.2	10.3	9.1	8.5	8.2	7.8	7.7	8.9	10.3	11.7	13.2	14.2	15.3	15.9	15.9	15.4	14.3	13.3	12.9	12.7	10.8	10.2	9.6	11.7	15.9	7.7
18	9.4	9.9	8.8	8.6	8.2	8.4	7.4	7.8	10.3	13.6	16.3	16.0	17.6	19.0	18.9	18.1	16.5	15.7	15.2	14.5	12.7	12.7	12.6	12.3	12.9	19.0	7.4
19	12.8	11.4	11.3	11.0	10.8	10.4	10.8	10.4	12.4	15.5	17.4	18.3	18.4	19.2	19.3	18.8	18.8	17.7	16.2	15.5	15.1	14.4	14.6	12.9	14.7	19.3	10.4
20	12.6	12.2	11.9	10.7	11.2	10.0	10.5	10.7	11.8	14.5	15.9	16.8	17.5	18.0	18.1	17.8	16.9	16.3	15.4	14.9	14.7	13.8	13.9	14.3	14.2	18.1	10.0
21	14.1	13.5	13.1	11.8	10.0	9.7	8.4	10.0	12.0	14.8	15.6	16.4	16.6	16.9	17.5	17.5	16.9	16.0	15.3	15.3	15.0	14.7	14.7	14.0	14.2	17.5	8.4
22	13.2	12.6	12.1	12.2	11.9	11.8	11.8	11.8	12.0	12.5	13.2	13.5	14.3	14.9	14.2	14.8	13.9	13.0	12.4	12.3	12.2	11.9	11.3	9.9	12.7	14.9	9.9
23	9.7	9.7	9.6	9.2	8.7	8.3	8.0	7.9	7.9	8.8	9.6	10.4	10.6	11.3	12.5	12.5	12.4	11.0	10.2	10.0	9.7	9.6	9.0	8.3	9.8	12.5	7.9
24	7.9	7.5	7.5	7.3	7.1	6.7	6.0	5.6	4.5	4.6	5.2	6.3	7.6	6.7	6.5	5.3	5.2	5.7	5.9	4.4	4.2	3.6	3.5	4.0	5.8	7.9	3.5
25	3.8	4.1	3.1	2.7	2.8	2.9	2.5	3.7	5.2	7.8	8.7	9.3	10.8	11.4	11.8	12.1	12.1	11.4	10.3	9.5	9.3	8.5	11.0	10.2	7.7	12.1	2.5
26	8.7	7.9	6.9	6.9	6.8	6.3	5.9	6.1	9.0	11.4	13.2	14.2	15.2	15.6	15.9	15.8	15.1	14.3	13.2	12.8	12.6	12.5	12.5	11.8	11.3	15.9	5.9
27	11.2	10.2	9.5	8.0	7.8	7.7	8.0	7.4	9.4	11.9	13.5	14.2	15.1	15.6	16.2	16.1	15.9	15.0	14.3	13.6	12.9	11.8	11.1	10.6	12.0	16.2	7.4
28	10.0	9.7	9.8	9.7	9.4	9.2	9.1	8.8	8.6	8.3	8.4	9.2	10.1	10.2	10.7	10.9	10.8	10.8	10.8	10.7	10.5	10.2	9.9	10.1	9.8	10.9	8.3
Avg	11.6	11.2	10.7	10.1	9.7	9.4	9.1	9.4	10.7	12.7	14.3	15.2	16.0	16.6	16.8	16.6	16.1	15.1	14.2	13.5	13.0	12.6	12.6	12.0	12.9	--	--
Max	15.4	15.2	14.2	13.8	13.5	13.1	12.8	12.7	14.3	17.2	20.4	21.3	22.1	22.1	22.3	22.2	21.4	19.9	18.4	18.2	17.6	16.8	17.2	15.6	--	22.3	--
Min	3.8	4.1	3.1	2.7	2.8	2.9	2.5	3.7	4.5	4.6	5.2	6.3	7.6	6.7	6.5	5.3	5.2	5.7	5.9	4.4	4.2	3.6	3.5	4.0	--	--	2.5

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, Temp_2m_C"
Month: Mar 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	9.8	9.8	10.0	10.1	10.0	9.9	9.5	9.6	11.5	13.1	13.4	13.6	14.8	15.6	16.0	16.1	15.5	15.1	14.4	13.9	13.6	13.7	13.5	13.0	12.7	16.1	9.5
2	11.5	11.2	10.8	10.8	10.9	10.8	10.6	10.5	11.0	11.0	12.1	10.9	7.5	5.8	5.6	5.1	4.9	4.8	4.6	4.8	5.0	4.9	4.9	5.1	8.1	12.1	4.6
3	5.1	5.0	5.1	4.2	3.7	2.9	2.2	2.5	4.5	6.9	6.7	7.7	9.4	9.9	9.5	9.7	10.1	9.3	7.9	7.4	7.1	6.1	5.5	4.6	6.4	10.1	2.2
4	4.9	4.6	3.9	3.9	3.6	3.2	2.9	3.8	6.8	9.1	10.3	9.8	10.1	10.4	10.3	11.0	11.6	10.8	9.9	9.5	8.2	7.1	6.6	6.5	7.5	11.6	2.9
5	7.0	6.8	5.7	5.3	5.1	5.0	5.3	6.0	7.2	8.5	10.4	11.9	13.0	14.2	14.8	15.6	15.3	14.0	12.2	10.7	10.7	10.9	10.4	9.2	9.8	15.6	5.0
6	8.8	7.9	7.6	7.7	7.3	6.9	6.6	7.2	8.7	10.7	12.6	15.7	17.2	17.6	18.1	18.3	17.7	17.1	16.1	14.4	13.5	12.9	13.3	12.6	12.4	18.3	6.6
7	12.1	12.0	12.1	11.3	10.5	10.1	9.8	10.8	12.7	14.0	16.0	17.7	18.2	19.4	19.8	20.1	19.8	18.9	17.8	16.0	14.9	14.0	13.0	13.3	14.8	20.1	9.8
8	13.9	15.3	--	13.8	11.7	11.0	10.2	10.8	13.7	16.4	16.9	17.5	17.9	18.5	18.7	19.0	18.7	18.0	16.9	16.2	15.8	15.9	15.6	15.6	15.6	19.0	10.2
9	15.0	14.1	13.5	13.0	11.8	11.1	10.4	10.7	13.5	16.0	16.3	17.2	18.2	19.0	19.1	19.2	19.0	18.4	17.4	16.8	16.8	16.5	16.3	15.6	15.6	19.2	10.4
10	15.4	12.9	11.4	11.5	11.1	10.5	10.2	11.7	14.7	16.6	18.1	19.6	20.3	20.5	21.0	20.9	20.6	19.7	18.4	17.8	17.3	15.4	13.7	13.2	15.9	21.0	10.2
11	14.0	14.3	13.2	12.0	11.5	11.5	12.3	13.0	15.3	17.1	19.1	20.3	21.1	21.2	21.7	21.3	21.9	20.9	19.7	18.6	17.1	16.6	16.3	16.2	16.9	21.9	11.5
12	15.9	16.0	15.8	15.4	15.8	14.6	14.9	14.9	15.6	17.5	18.6	18.5	19.4	19.7	20.2	19.2	19.1	18.3	17.5	16.6	15.6	14.9	14.4	13.9	16.8	20.2	13.9
13	13.5	13.3	13.1	12.7	12.2	12.3	12.2	12.9	14.2	15.8	17.6	19.1	20.8	20.6	20.3	21.5	19.3	18.1	17.0	16.7	17.4	16.3	15.2	14.4	16.1	21.5	12.2
14	13.9	14.9	14.0	13.3	13.6	13.0	12.8	13.5	15.4	16.9	18.6	19.6	20.3	21.0	21.4	21.3	21.1	20.5	19.3	18.2	16.8	16.2	15.2	15.0	16.9	21.4	12.8
15	14.7	14.7	14.3	13.4	12.8	11.6	11.2	12.5	15.1	17.1	18.5	19.3	20.3	20.9	21.1	21.7	21.2	20.6	19.5	17.7	16.3	16.3	16.9	15.2	16.8	21.7	11.2
16	14.2	13.9	13.3	13.1	13.1	12.9	12.8	14.0	16.3	18.0	19.0	20.4	21.9	22.6	23.2	23.5	23.3	22.3	20.7	19.2	18.4	17.0	16.4	16.6	17.8	23.5	12.8
17	16.6	15.8	14.8	14.2	14.5	14.1	13.8	15.8	17.9	18.9	20.7	21.7	22.5	22.6	22.3	21.3	21.4	21.3	20.8	20.3	19.8	19.5	19.3	18.9	18.7	22.6	13.8
18	18.0	17.4	16.7	16.0	15.6	15.2	14.8	14.3	14.5	15.8	16.5	16.8	16.8	17.0	16.8	16.2	13.9	11.7	10.5	9.9	10.2	10.5	10.8	10.5	14.4	18.0	9.9
19	10.5	10.7	10.5	10.3	10.0	9.5	9.3	9.3	9.3	9.9	10.7	12.3	13.2	14.3	14.9	14.5	13.4	13.1	13.0	12.8	12.3	12.0	11.5	10.4	11.6	14.9	9.3
20	9.9	9.5	8.7	8.9	9.5	9.2	9.2	9.6	11.5	14.1	15.6	16.6	17.5	17.9	18.1	16.5	13.8	14.7	15.3	14.1	14.1	12.5	11.6	11.4	12.9	18.1	8.7
21	10.5	10.9	11.3	12.0	10.3	10.3	9.5	11.1	14.0	15.6	16.7	17.5	18.4	19.1	19.3	19.7	19.6	19.1	18.2	17.6	17.2	17.0	15.5	16.0	15.3	19.7	9.5
22	13.9	13.8	13.7	13.6	13.4	12.5	12.1	12.9	15.6	17.9	18.8	19.9	20.4	21.4	21.7	21.3	21.2	20.5	19.5	18.3	16.8	16.2	16.0	15.6	17.0	21.7	12.1
23	15.1	16.2	16.3	15.4	13.5	12.0	12.0	12.7	15.4	17.4	18.9	19.3	20.7	20.9	21.3	21.1	21.0	20.6	19.7	18.9	18.1	17.2	14.7	14.2	17.2	21.3	12.0
24	13.3	13.3	12.6	13.2	11.6	11.5	10.4	12.5	15.4	17.0	18.6	19.7	20.4	20.9	21.5	21.3	20.7	20.0	18.9	18.3	17.0	14.9	14.4	14.2	16.3	21.5	10.4
25	14.2	13.7	14.0	12.7	12.7	12.3	11.8	13.2	15.4	17.6	18.3	19.5	20.6	21.2	21.3	21.5	21.3	20.8	19.8	19.3	18.9	18.7	18.1	15.1	17.2	21.5	11.8
26	14.8	15.0	15.0	14.6	14.4	14.3	13.9	14.3	15.2	16.7	18.5	20.1	21.7	22.5	22.9	23.5	23.4	22.3	20.9	19.1	17.4	17.0	16.1	16.1	17.9	23.5	13.9
27	15.7	14.6	14.5	14.2	14.0	13.4	13.8	16.4	18.5	20.2	22.8	24.7	25.6	26.2	26.5	26.9	26.5	25.4	23.7	22.6	21.5	21.3	19.6	19.8	20.3	26.9	13.4
28	17.9	18.3	16.5	16.3	16.1	15.8	15.0	16.7	20.2	22.4	23.4	24.1	25.0	25.8	26.2	26.4	26.1	25.3	24.1	22.4	21.5	21.7	21.7	20.8	21.2	26.4	15.0
29	20.0	18.0	17.2	16.4	16.4	15.3	15.1	16.9	19.9	22.9	23.9	25.1	25.9	26.6	26.6	26.5	26.1	25.3	24.1	22.5	20.7	19.9	19.4	18.6	21.2	26.6	15.1
30	18.9	18.6	18.5	17.9	17.5	17.2	15.5	16.6	19.4	23.1	24.6	25.7	25.6	26.7	26.5	26.8	25.9	25.3	24.0	23.4	22.7	20.9	20.1	19.5	21.7	26.8	15.5
31	19.1	19.1	17.9	18.5	18.3	17.1	15.7	17.3	20.2	22.0	22.6	23.9	24.5	24.6	25.2	25.3	25.0	24.3	23.3	22.6	22.0	21.4	21.2	20.1	21.3	25.3	15.7
Avg	13.5	13.3	12.7	12.4	12.0	11.5	11.2	12.1	14.1	16.0	17.2	18.2	19.0	19.5	19.7	19.7	19.3	18.6	17.6	16.7	16.0	15.3	14.8	14.2	15.6	--	--
Max	20.0	19.1	18.5	18.5	18.3	17.2	15.7	17.3	20.2	23.1	24.6	25.7	25.9	26.7	26.6	26.9	26.5	25.4	24.1	23.4	22.7	21.7	21.7	20.8	--	26.9	--
Min	4.9	4.6	3.9	3.9	3.6	2.9	2.2	2.5	4.5	6.9	6.7	7.7	7.5	5.8	5.6	5.1	4.9	4.8	4.6	4.8	5.0	4.9	4.9	4.6	--	--	2.2

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, SR_Wm2_2m"
Month: Jan 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	0	0	0	0	0	0	0	1	78	136	134	167	156	121	92	97	27	2	0	0	0	0	0	0	42	167	0	
2	0	0	0	0	0	0	0	19	224	436	579	662	676	568	456	256	41	6	0	0	0	0	0	0	164	676	0	
3	0	0	0	0	0	0	0	25	197	388	534	621	640	593	485	319	128	4	0	0	0	0	0	0	164	640	0	
4	0	0	0	0	0	0	0	28	210	401	547	631	652	606	497	332	137	4	0	0	0	0	0	0	168	652	0	
5	0	0	0	0	0	0	0	24	204	397	545	632	653	608	498	335	138	3	0	0	0	0	0	0	168	653	0	
6	0	0	0	0	0	0	0	26	208	402	551	640	660	615	507	340	142	3	0	0	0	0	0	0	171	660	0	
7	0	0	0	0	0	0	0	12	167	297	419	649	655	606	446	210	130	10	0	0	0	0	0	0	150	655	0	
8	0	0	0	0	0	0	0	5	50	114	161	224	332	378	181	122	59	7	0	0	0	0	0	0	68	378	0	
9	0	0	0	0	0	0	0	4	41	293	557	625	655	411	478	326	138	7	0	0	0	0	0	0	147	655	0	
10	0	0	0	0	0	0	0	24	81	281	414	540	361	386	110	102	67	6	0	0	0	0	0	0	99	540	0	
11	0	0	0	0	0	0	0	4	60	254	259	281	380	654	548	311	102	3	0	0	0	0	0	0	119	654	0	
12	0	0	0	0	0	0	0	12	108	351	263	184	243	235	134	153	76	10	0	0	0	0	0	0	74	351	0	
13	0	0	0	0	0	0	0	4	59	160	210	308	41	33	58	82	81	12	0	0	0	0	0	0	44	308	0	
14	0	0	0	0	0	0	0	22	191	378	489	507	627	592	526	362	158	6	0	0	0	0	0	0	161	627	0	
15	0	0	0	0	0	0	0	27	211	412	565	659	683	641	537	373	165	6	0	0	0	0	0	0	178	683	0	
16	0	0	0	0	0	0	0	28	219	420	574	667	692	651	542	374	167	6	0	0	0	0	0	0	181	692	0	
17	0	0	0	0	0	0	0	29	212	409	560	650	673	632	530	369	168	8	0	0	0	0	0	0	177	673	0	
18	0	0	0	0	0	0	0	28	216	398	540	646	674	631	358	360	138	11	0	0	0	0	0	0	167	674	0	
19	0	0	0	0	0	0	0	28	212	412	562	631	628	571	498	347	179	15	0	0	0	0	0	0	170	631	0	
20	0	0	0	0	0	0	0	29	210	405	478	603	601	586	488	362	144	20	0	0	0	0	0	0	164	603	0	
21	0	0	0	0	0	0	0	3	126	422	576	605	675	645	573	383	216	8	0	0	0	0	0	0	176	675	0	
22	0	0	0	0	0	0	0	33	234	443	601	702	722	671	564	400	201	13	0	0	0	0	0	0	191	722	0	
23	0	0	0	0	0	0	0	34	228	430	587	677	661	422	323	329	166	21	0	0	0	0	0	0	162	677	0	
24	0	0	0	0	0	0	0	34	231	437	597	694	722	683	579	411	210	14	0	0	0	0	0	0	192	722	0	
25	0	0	0	0	0	0	0	7	90	221	382	495	530	624	459	203	129	20	0	0	0	0	0	0	132	624	0	
26	0	0	0	0	0	0	0	18	84	370	436	406	221	242	240	188	87	18	0	0	0	0	0	0	96	436	0	
27	0	0	0	0	0	0	0	10	101	--	--	311	294	470	314	204	140	17	0	0	0	0	0	0	85	470	0	
28	0	0	0	0	0	0	0	38	215	384	575	653	688	656	566	195	116	19	0	0	0	0	0	0	171	688	0	
29	0	0	0	0	0	0	0	8	62	89	224	256	221	252	150	53	35	3	0	0	0	0	0	0	57	256	0	
30	0	0	0	0	0	0	0	1	8	22	63	98	67	65	39	27	16	5	0	0	0	0	0	0	17	98	0	
31	0	0	0	0	0	0	0	8	80	187	151	210	132	168	234	180	67	17	0	0	0	0	0	0	60	234	0	
Avg	0	0	0	0	0	0	0	18	149	325	438	504	504	484	387	261	122	10	0	0	0	0	0	0	133	--	--	
Max	0	0	0	0	0	0	0	38	234	443	601	702	722	683	579	411	216	21	0	0	0	0	0	0	--	722	--	
Min	0	0	0	0	0	0	0	1	8	22	63	98	41	33	39	27	16	2	0	0	0	0	0	0	--	--	0	

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, SR_Wm2_2m"
Month: Feb 2015

		Hour of day																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	0	0	0	0	0	0	0	42	248	455	613	716	745	701	594	430	233	28	0	0	0	0	0	0	200	745	0	
2	0	0	0	0	0	0	0	43	245	449	608	705	755	472	524	389	233	33	0	0	0	0	0	0	186	755	0	
3	0	0	0	0	0	0	0	42	246	453	611	707	740	704	598	432	173	36	0	0	0	0	0	0	198	740	0	
4	0	0	0	0	0	0	0	50	241	458	611	716	747	707	604	440	243	38	0	0	0	0	0	0	202	747	0	
5	0	0	0	0	0	0	0	51	264	476	638	740	767	725	619	455	251	39	0	0	0	0	0	0	209	767	0	
6	0	0	0	0	0	0	0	51	263	470	631	734	754	717	596	456	249	39	0	0	0	0	0	0	207	754	0	
7	0	0	0	0	0	0	0	53	268	478	642	746	776	732	626	458	257	42	0	0	0	0	0	0	212	776	0	
8	0	0	0	0	0	0	0	55	265	472	631	729	763	723	619	456	257	45	0	0	0	0	0	0	209	763	0	
9	0	0	0	0	0	0	0	59	276	485	645	736	767	730	621	458	259	44	0	0	0	0	0	0	212	767	0	
10	0	0	0	0	0	0	0	63	283	497	659	764	793	752	640	471	271	45	0	0	0	0	0	0	218	793	0	
11	0	0	0	0	0	0	0	62	283	446	660	767	800	759	653	483	280	48	0	0	0	0	0	0	218	800	0	
12	0	0	0	0	0	0	0	67	291	433	555	760	794	753	649	466	279	55	0	0	0	0	0	0	213	794	0	
13	0	0	0	0	0	0	0	70	294	505	668	769	799	757	650	483	281	49	0	0	0	0	0	0	222	799	0	
14	0	0	0	0	0	0	0	79	297	512	637	659	729	683	573	335	95	40	0	0	0	0	0	0	193	729	0	
15	0	0	0	0	0	0	0	17	97	218	374	398	555	369	339	266	180	58	0	0	0	0	0	0	120	555	0	
16	0	0	0	0	0	0	0	68	284	494	591	610	831	722	655	348	252	59	0	0	0	0	0	0	205	831	0	
17	0	0	0	0	0	0	0	83	316	530	694	796	822	782	676	508	297	66	0	0	0	0	0	0	232	822	0	
18	0	0	0	0	0	0	0	86	313	525	687	793	819	772	642	478	232	65	0	0	0	0	0	0	225	819	0	
19	0	0	0	0	0	0	0	74	266	499	587	639	679	732	473	367	257	87	1	0	0	0	0	0	194	732	0	
20	0	0	0	0	0	0	0	46	223	389	521	504	616	615	628	311	182	61	0	0	0	0	0	0	171	628	0	
21	0	0	0	0	0	0	0	91	364	549	669	766	744	629	558	444	230	59	1	0	0	0	0	0	213	766	0	
22	0	0	0	0	0	0	0	68	173	456	617	698	762	505	322	293	130	43	1	0	0	0	0	0	169	762	0	
23	0	0	0	0	0	0	0	4	64	273	284	313	248	425	583	316	248	53	2	0	0	0	0	0	117	583	0	
24	0	0	0	0	0	0	0	15	32	143	452	620	652	325	182	56	97	97	2	0	0	0	0	0	111	652	0	
25	0	0	0	0	0	0	0	112	346	562	726	829	852	812	704	539	326	101	1	0	0	0	0	0	246	852	0	
26	0	0	0	0	0	0	0	112	350	568	703	763	811	740	696	539	342	103	1	0	0	0	0	0	239	811	0	
27	0	0	0	0	0	0	0	74	314	561	732	831	852	814	707	543	325	74	3	0	0	0	0	0	243	852	0	
28	0	0	0	0	0	0	0	4	13	32	49	59	109	66	64	59	25	12	1	0	0	0	0	0	21	109	0	
Avg	0	0	0	0	0	0	0	59	247	442	589	674	717	651	564	403	232	54	1	0	0	0	0	0	193	--	--	
Max	0	0	0	0	0	0	0	112	364	568	732	831	852	814	707	543	342	103	3	0	0	0	0	0	--	852	--	
Min	0	0	0	0	0	0	0	4	13	32	49	59	109	66	64	56	25	12	0	0	0	0	0	0	--	--	0	

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, SR_Wm2_2m"
Month: Mar 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0	0	0	0	0	0	1	69	326	620	647	568	562	523	429	366	138	30	3	0	0	0	0	0	178	647	0
2	0	0	0	0	0	0	0	33	124	126	285	207	53	62	61	59	39	13	3	0	0	0	0	0	44	285	0
3	0	0	0	0	0	0	0	117	351	569	152	488	937	757	563	429	353	92	4	0	0	0	0	0	201	937	0
4	0	0	0	0	0	0	1	138	375	593	777	506	485	736	386	454	339	118	3	0	0	0	0	0	205	777	0
5	0	0	0	0	0	0	1	157	406	625	791	888	910	865	752	578	360	122	2	0	0	0	0	0	269	910	0
6	0	0	0	0	0	0	1	161	411	630	800	902	932	886	770	596	375	130	3	0	0	0	0	0	275	932	0
7	0	0	0	0	0	0	1	153	395	610	779	781	786	814	765	591	363	123	4	0	0	0	0	0	257	814	0
8	0	0	--	0	0	0	3	147	385	599	767	866	898	850	735	569	359	126	4	0	0	0	0	0	274	898	0
9	0	0	0	0	0	0	3	146	396	607	776	873	901	872	782	487	362	127	6	0	0	0	0	0	264	901	0
10	0	0	0	0	0	0	3	173	415	629	796	894	915	870	750	580	368	135	3	0	0	0	0	0	272	915	0
11	0	0	0	0	0	0	7	140	302	553	710	761	880	528	646	320	376	104	2	0	0	0	0	0	222	880	0
12	0	0	0	0	0	0	2	44	192	388	432	374	452	608	649	174	200	86	5	0	0	0	0	0	150	649	0
13	0	0	0	0	0	0	5	179	418	627	790	854	908	398	288	496	199	57	5	0	0	0	0	0	218	908	0
14	0	0	0	0	0	0	8	180	421	632	795	892	913	753	710	513	327	148	11	0	0	0	0	0	263	913	0
15	0	0	0	0	0	0	10	197	443	658	819	916	941	898	782	610	393	154	4	0	0	0	0	0	284	941	0
16	0	0	0	0	0	0	12	202	441	661	813	905	926	877	758	591	379	149	4	0	0	0	0	0	280	926	0
17	0	0	0	0	0	0	6	195	387	426	786	911	895	495	450	131	146	81	7	0	0	0	0	0	205	911	0
18	0	0	0	0	0	0	2	37	75	247	341	267	305	366	234	122	76	26	2	0	0	0	0	0	87	366	0
19	0	0	0	0	0	0	0	4	27	272	369	786	851	875	631	335	153	72	10	0	0	0	0	0	183	875	0
20	0	0	0	0	0	0	15	92	344	607	747	835	985	770	392	124	30	34	3	0	0	0	0	0	207	985	0
21	0	0	0	0	0	0	22	221	459	669	824	919	946	900	774	611	399	165	6	0	0	0	0	0	288	946	0
22	0	0	0	0	0	0	23	226	471	685	848	940	963	907	789	612	409	157	8	0	0	0	0	0	293	963	0
23	0	0	0	0	0	0	17	232	476	683	847	937	964	922	805	628	408	172	7	0	0	0	0	0	296	964	0
24	0	0	0	0	0	0	30	265	464	703	862	957	976	927	804	633	416	173	8	0	0	0	0	0	301	976	0
25	0	0	0	0	0	0	29	227	410	686	848	940	960	906	793	623	406	172	9	0	0	0	0	0	292	960	0
26	0	0	0	0	0	0	37	263	503	717	876	966	984	931	805	632	323	111	6	0	0	0	0	0	298	984	0
27	0	0	0	0	0	0	40	266	513	724	881	968	983	933	817	646	426	187	11	0	0	0	0	0	308	983	0
28	0	0	0	0	0	0	44	272	520	730	890	985	999	949	831	656	431	190	12	0	0	0	0	0	313	999	0
29	0	0	0	0	0	0	44	242	472	689	840	887	947	903	773	575	419	215	28	0	0	0	0	0	293	947	0
30	0	0	0	0	0	0	17	123	407	701	825	997	866	933	779	618	433	209	20	0	0	0	0	0	289	997	0
31	0	0	0	0	0	0	42	264	504	711	863	951	968	920	805	635	419	185	16	0	0	0	0	0	303	968	0
Avg	0	0	0	0	0	0	14	167	382	593	728	804	838	772	655	484	317	125	7	0	0	0	0	0	246	--	--
Max	0	0	0	0	0	0	44	272	520	730	890	997	999	949	831	656	433	215	28	0	0	0	0	0	--	999	--
Min	0	0	0	0	0	0	0	4	27	126	152	207	53	62	61	59	30	13	2	0	0	0	0	0	--	--	0

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, RH_Percent"
Month: Jan 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	95	95	95	94	93	93	93	92	93	93	92	86	83	83	80	76	84	85	84	84	83	86	84	79	88	95	76
2	75	69	67	65	64	64	65	63	60	59	59	60	56	54	59	67	75	75	76	74	75	79	81	73	67	81	54
3	73	70	74	67	69	77	79	76	66	61	54	52	51	49	47	49	52	61	66	75	76	76	74	72	65	79	47
4	70	71	72	71	66	64	63	64	57	53	53	51	47	44	40	41	42	46	46	42	43	43	43	44	53	72	40
5	44	43	43	44	44	41	39	39	36	33	31	29	26	25	23	24	24	23	23	26	33	31	28	31	33	44	23
6	32	32	32	32	35	35	34	33	26	24	26	23	21	19	18	17	18	19	22	24	25	25	27	31	26	35	17
7	31	30	32	32	32	34	35	36	35	33	31	28	26	26	26	29	30	32	34	34	36	37	40	44	33	44	26
8	47	49	51	53	53	54	54	54	55	55	54	52	49	46	48	49	52	55	57	59	62	62	57	56	53	62	46
9	58	61	63	66	69	72	77	81	77	69	60	57	53	52	48	47	51	55	56	56	57	56	58	59	61	81	47
10	61	61	61	63	64	65	65	66	64	60	56	52	51	50	54	75	74	72	73	74	76	79	74	80	65	80	50
11	79	82	83	79	77	78	86	85	83	79	73	66	63	54	49	51	57	59	59	63	84	88	82	83	73	88	49
12	87	90	92	92	92	88	92	93	87	81	80	80	85	79	79	80	80	80	87	88	89	87	84	88	86	93	79
13	86	83	84	81	88	91	93	95	94	92	87	82	87	93	90	90	89	83	87	93	91	92	94	96	89	96	81
14	96	95	96	94	91	90	90	91	82	81	77	74	65	57	49	49	48	48	60	65	57	62	61	59	72	96	48
15	59	62	64	61	69	73	71	68	61	56	52	48	42	38	35	33	37	45	43	43	48	50	54	56	53	73	33
16	54	54	56	58	58	56	52	47	42	39	36	35	34	30	26	29	30	31	33	33	32	30	31	32	40	58	26
17	36	39	40	44	41	45	48	48	40	34	30	23	20	20	25	28	28	31	32	38	42	38	34	38	35	48	20
18	39	40	44	39	41	41	40	40	34	32	31	30	27	23	23	23	28	35	38	40	36	37	37	37	35	44	23
19	36	34	39	45	43	42	40	44	40	34	28	26	28	27	28	28	30	35	39	38	40	43	42	43	36	45	26
20	38	41	41	41	48	54	55	55	47	40	35	32	25	19	17	20	28	35	40	43	43	39	37	35	38	55	17
21	34	34	36	37	39	40	45	43	36	34	33	34	34	35	35	37	42	73	59	60	57	59	53	49	43	73	33
22	46	47	44	40	30	25	26	28	30	27	25	22	23	25	26	26	28	33	34	34	41	58	67	68	36	68	22
23	66	58	56	58	58	58	58	54	50	40	37	35	27	25	25	25	26	32	31	28	32	28	29	31	40	66	25
24	31	31	30	32	33	33	35	34	33	33	29	26	22	17	14	14	12	15	19	18	21	22	21	23	25	35	12
25	23	24	24	24	27	26	26	25	24	23	22	21	19	19	18	16	14	17	19	21	22	20	22	23	22	27	14
26	23	23	24	24	25	26	27	26	27	25	24	25	25	27	27	26	26	25	26	29	29	31	38	41	27	41	23
27	34	38	40	42	45	45	46	53	55	--	--	59	58	55	55	52	56	67	72	72	70	69	74	73	56	74	34
28	78	75	78	79	79	80	80	81	69	61	52	46	39	36	49	57	58	58	59	63	67	62	58	62	64	81	36
29	65	64	62	59	53	53	51	47	46	47	48	45	42	40	43	52	66	68	84	85	83	85	87	87	61	87	40
30	87	81	88	92	91	91	92	93	95	96	94	92	89	89	92	95	96	96	95	95	95	96	96	95	93	96	81
31	95	96	96	96	96	96	96	95	92	90	88	84	86	90	85	84	86	93	95	96	96	93	89	89	92	96	84
Avg	57	57	58	58	59	59	60	60	56	53	50	48	45	43	43	45	47	51	53	55	56	57	57	57	53	--	--
Max	96	96	96	96	96	96	96	95	95	96	94	92	89	93	92	95	96	96	95	96	96	96	96	96	--	96	--
Min	23	23	24	24	25	25	26	25	24	23	22	21	19	17	14	14	12	15	19	18	21	20	21	23	--	--	12

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, RH_Percent"
Month: Feb 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	91	92	94	95	94	89	76	69	65	58	56	51	43	41	64	63	67	71	82	87	85	70	50	39	70	95	39	
2	39	40	41	40	45	45	48	44	44	50	49	49	46	42	40	38	47	51	53	61	53	54	54	51	47	61	38	
3	54	56	57	60	60	55	52	50	47	39	35	33	35	39	43	39	41	47	52	53	52	41	41	43	47	60	33	
4	47	49	55	58	63	60	63	64	56	48	37	43	43	42	44	44	44	52	59	59	59	59	43	40	51	64	37	
5	49	55	57	56	55	54	47	39	32	27	23	21	20	19	18	15	19	27	29	26	26	26	28	32	33	57	15	
6	31	32	29	30	31	31	33	33	31	30	28	24	20	19	18	17	21	24	28	32	34	29	24	24	27	34	17	
7	24	25	28	31	33	37	39	37	36	31	25	26	23	24	25	27	29	36	39	39	39	25	23	27	30	39	23	
8	25	27	30	34	40	40	37	37	33	31	27	24	26	28	31	32	34	36	39	40	46	45	39	37	34	46	24	
9	40	41	44	49	53	55	55	52	45	38	31	26	27	30	32	33	33	35	38	38	35	30	26	29	38	55	26	
10	29	29	31	34	40	47	51	49	44	36	23	21	26	22	24	27	28	31	34	34	35	35	32	34	33	51	21	
11	38	42	47	45	38	31	38	31	29	29	26	20	19	17	17	17	17	19	21	26	31	33	35	31	29	47	17	
12	35	39	39	40	41	45	44	41	37	34	32	28	26	25	23	22	23	26	32	34	36	38	38	37	34	45	22	
13	39	38	38	39	39	41	42	40	38	34	32	33	31	26	24	27	25	27	30	34	33	36	38	41	34	42	24	
14	41	41	42	44	46	46	45	44	41	38	33	30	29	26	24	28	31	34	37	40	43	43	43	44	38	46	24	
15	44	46	49	49	51	55	57	57	57	51	48	47	48	50	48	45	46	48	51	56	62	67	68	68	53	68	44	
16	68	64	68	72	71	72	74	71	62	62	65	64	54	50	45	53	50	55	55	58	58	55	52	55	60	74	45	
17	58	60	35	28	24	20	18	17	15	15	14	14	13	13	12	15	17	18	17	16	15	20	21	22	22	60	12	
18	23	22	25	25	26	26	29	27	24	21	15	18	16	16	17	18	20	21	22	22	28	27	28	27	23	29	15	
19	22	26	26	28	29	29	28	29	26	21	17	18	20	14	17	17	17	17	20	23	17	17	15	19	21	29	14	
20	20	21	23	28	29	33	31	29	30	26	24	19	20	20	19	20	23	25	27	30	31	34	33	31	26	34	19	
21	32	34	36	40	45	46	52	45	39	31	27	25	27	27	26	28	32	34	36	35	36	38	36	38	35	52	25	
22	41	44	48	48	50	52	54	55	55	54	51	52	49	42	48	47	51	57	59	55	56	61	63	63	52	63	41	
23	62	64	67	71	76	81	85	86	85	77	67	61	60	57	52	50	54	64	68	70	71	73	76	80	69	86	50	
24	83	90	81	73	71	81	94	90	83	81	75	67	60	66	71	80	73	67	66	80	78	80	80	76	77	94	60	
25	73	67	69	73	74	73	72	60	59	47	45	42	41	39	38	37	36	37	40	43	44	48	31	32	51	74	31	
26	36	39	44	41	42	46	48	48	41	35	33	31	25	25	24	23	21	20	23	24	24	24	25	26	32	48	20	
27	27	29	31	36	36	36	36	37	34	28	23	26	26	23	22	22	23	25	29	33	38	44	45	44	31	45	22	
28	52	59	55	55	56	59	63	69	74	78	81	78	72	74	69	67	68	69	71	72	74	75	76	74	68	81	52	
Avg	44	45	46	47	48	49	50	48	45	41	37	35	34	33	33	34	35	38	41	44	44	44	42	42	42	--	--	--
Max	91	92	94	95	94	89	94	90	85	81	81	78	72	74	71	80	73	71	82	87	85	80	80	80	--	95	--	
Min	20	21	23	25	24	20	18	17	15	15	14	14	13	13	12	15	17	17	17	16	15	17	15	19	--	--	12	

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, RH_Percent"
Month: Mar 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	76	76	74	75	76	77	79	77	67	58	54	55	52	47	44	45	48	50	54	55	56	56	57	62	61	79	44
2	80	83	86	85	84	84	83	78	73	72	64	75	96	98	98	99	99	99	99	99	100	100	100	100	89	100	64
3	100	99	97	96	94	94	95	93	87	75	69	63	54	54	53	48	44	51	61	67	67	70	72	74	74	100	44
4	71	72	76	78	78	81	83	78	64	51	43	43	47	53	54	51	40	39	43	45	52	57	48	43	58	83	39
5	36	32	33	29	28	28	26	24	23	23	23	21	21	19	17	15	17	20	25	29	26	24	26	30	25	36	15
6	31	33	34	32	34	35	35	33	28	24	20	13	8	9	7	7	8	7	8	11	13	14	17	19	20	35	7
7	19	18	17	18	18	20	23	23	22	22	22	22	22	20	18	16	16	17	20	27	31	33	35	34	22	35	16
8	38	31	–	36	42	43	44	41	34	29	27	28	28	28	27	22	20	20	21	21	21	22	24	22	29	44	20
9	24	26	27	28	31	33	35	34	29	23	20	20	19	18	18	18	18	19	21	22	22	22	22	24	24	35	18
10	23	29	33	31	30	30	29	25	20	18	17	15	13	11	13	13	13	13	14	14	15	19	22	23	20	33	11
11	21	21	23	25	25	24	22	21	19	19	16	14	13	13	12	10	10	12	15	18	22	23	24	23	19	25	10
12	23	21	21	23	22	26	24	25	27	23	20	21	21	20	18	19	20	23	24	28	34	37	38	40	25	40	18
13	41	41	42	43	44	45	46	43	40	36	32	27	21	19	19	17	27	29	31	32	27	31	34	36	33	46	17
14	38	34	37	38	34	35	34	33	30	28	24	21	20	19	19	18	18	18	20	22	26	27	28	27	27	38	18
15	25	24	25	26	28	31	33	30	25	22	20	18	16	14	13	13	13	13	14	17	19	18	16	19	20	33	13
16	20	21	22	22	22	22	22	22	24	27	28	27	25	24	22	21	21	24	26	30	32	36	38	38	25	38	20
17	39	42	45	48	47	49	51	43	40	39	34	30	29	28	28	31	30	29	27	25	23	23	23	22	34	51	22
18	26	29	33	36	36	38	41	44	45	41	42	40	41	41	41	41	56	75	86	93	94	93	91	94	54	94	26
19	95	91	94	95	95	97	99	100	100	100	100	80	66	57	56	58	65	66	64	67	71	73	77	84	81	100	56
20	89	91	92	90	86	87	86	87	80	64	52	45	42	39	40	52	72	59	41	52	55	65	68	66	67	92	39
21	71	68	64	58	67	67	71	63	51	43	40	41	38	36	34	31	28	27	29	28	29	30	36	36	45	71	27
22	43	43	43	43	43	46	46	44	37	24	18	14	13	15	16	16	15	17	18	21	26	28	29	30	29	46	13
23	31	28	24	27	33	38	37	36	30	25	23	21	17	14	13	15	15	15	17	17	16	18	23	25	23	38	13
24	27	26	28	27	30	30	33	29	23	20	16	11	10	9	9	9	11	13	15	17	19	24	25	25	20	33	9
25	25	27	27	31	30	31	33	29	26	23	21	20	19	18	18	17	16	17	19	21	21	23	24	30	24	33	16
26	25	20	15	15	12	11	11	11	12	11	10	9	9	9	8	8	8	9	10	13	16	16	17	16	13	25	8
27	17	18	18	18	18	18	17	14	13	13	12	11	10	8	7	7	7	8	9	9	10	12	15	13	13	18	7
28	15	14	16	16	15	16	18	19	15	12	9	8	8	7	6	5	5	5	6	8	10	9	7	7	11	19	5
29	9	11	13	14	15	18	18	17	16	12	10	9	8	8	7	7	6	5	7	8	11	12	13	14	11	18	5
30	13	14	14	15	16	17	21	20	17	12	11	10	10	10	9	9	10	11	12	14	15	17	18	19	14	21	9
31	18	18	19	19	20	22	25	23	20	18	16	16	15	15	14	13	14	15	17	17	19	20	21	25	18	25	13
Avg	39	39	40	40	40	42	43	41	37	32	30	27	26	25	24	24	26	27	28	31	32	34	35	36	33	--	--
Max	100	99	97	96	95	97	99	100	100	100	100	80	96	98	98	99	99	99	99	99	100	100	100	100	--	100	--
Min	9	11	13	14	12	11	11	11	12	11	9	8	8	7	6	5	5	5	6	8	10	9	7	7	--	--	5

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, Precip_Inches"
Month: Jan 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Max	Min	
1	0.048	0.04	0.024	0.012	0.008	0.008	0.004	0.004	0.008	0.024	0.016	0	0	0	0	0	0	0	0	0	0	0	0	0	0.196	0.048	0	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.012	0.008	0	0	0	0	0	0	0	0	0	0.02	0.012	0
11	0	0	0	0	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0.024	0.055	0	0.004	0.004	0.107	0.055	0	
12	0	0	0	0	0.004	0.012	0.008	0	0	0	0	0.008	0.024	0	0	0	0	0	0	0	0.004	0	0	0	0.06	0.024	0	
13	0	0	0	0	0	0.004	0	0	0	0	0	0	0.142	0.269	0.028	0	0	0	0	0	0	0	0	0	0.443	0.269	0	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.016	0.036	0	0	0	0	0	0	0.052	0.036	0	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	0	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004	0.004	0.008	0.024	0.032	0.012	0.008	0.012	0.016	0.12	0.032	0	
30	0	0.004	0.08	0.052	0.044	0.024	0.064	0.084	0.107	0.092	0.024	0.024	0.004	0.024	0.106	0.18	0.153	0.06	0.111	0.024	0.119	0.016	0	0	1.4	0.18	0	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004	0.004	0	0	0	0.004	0	0	0	0	0	0.012	0.004	0	
Total	0.048	0.044	0.104	0.064	0.056	0.048	0.096	0.088	0.115	0.116	0.04	0.032	0.17	0.297	0.15	0.192	0.173	0.104	0.139	0.08	0.19	0.024	0.016	0.02	2.41	--	--	
Max	0.048	0.04	0.08	0.052	0.044	0.024	0.064	0.084	0.107	0.092	0.024	0.024	0.142	0.269	0.106	0.18	0.153	0.06	0.111	0.032	0.119	0.016	0.012	0.016	--	0.269	--	
Min	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	0	

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, Precip_Inches"
Month: Feb 2015

[illegible]

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, Precip_Inches"
Month: Mar 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Max	Min
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0.028	0.047	0.083	0.131	0.083	0.079	0.056	0.024	0.008	0	0	0	0	0.539	0.131	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0.004	0	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004	0.004	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.016	0.044	0.004	0	0	0.008	0.072	0.044	0
19	0.004	0.012	0.016	0.004	0	0.008	0.012	0.048	0.055	0	0	0	0	0	0	0	0.012	0	0	0	0	0	0	0	0.171	0.055	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.13	0.161	0.004	0	0	0	0	0	0	0.295	0.161	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0.008	0.012	0.016	0.004	0	0.008	0.012	0.048	0.055	0	0	0.028	0.047	0.083	0.131	0.213	0.252	0.06	0.04	0.052	0.004	0	0	0.008	1.08	--	--
Max	0.004	0.012	0.016	0.004	0	0.008	0.012	0.048	0.055	0	0	0.028	0.047	0.083	0.131	0.13	0.161	0.056	0.024	0.044	0.004	0	0	0.008	--	0.161	--
Min	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	0

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, BP_mmHg"
Month: Jan 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	649	649	650	650	650	650	650	651	651	652	652	652	651	651	651	651	651	651	651	651	651	651	651	651	651	651	652	649
2	650	650	650	650	649	649	649	650	650	650	651	650	650	650	650	650	650	651	651	651	652	652	652	652	652	650	652	649
3	652	653	653	653	653	653	653	654	654	655	655	655	655	654	655	655	655	655	656	656	656	657	657	657	657	655	657	652
4	658	658	658	658	658	658	658	659	659	660	660	660	659	659	659	659	659	659	659	659	660	660	659	659	659	659	660	658
5	659	659	659	659	659	659	659	659	660	660	660	660	659	659	658	658	658	658	658	659	659	659	659	659	659	659	660	658
6	659	659	659	659	659	659	659	659	660	660	660	659	659	658	658	658	658	658	658	658	658	658	658	658	658	659	660	658
7	658	657	657	657	657	657	657	657	658	658	658	658	657	657	657	657	657	657	657	657	657	657	657	657	657	657	658	657
8	656	656	656	656	656	656	656	656	656	656	656	656	655	654	654	654	654	654	654	654	654	654	653	653	655	656	653	
9	653	653	653	653	653	653	653	654	654	655	655	655	654	653	653	654	654	654	654	654	654	654	654	654	654	654	655	653
10	654	654	654	654	654	654	654	654	654	655	655	655	654	653	653	653	653	653	654	654	654	654	654	654	654	654	655	653
11	654	654	654	654	654	654	654	654	654	655	655	655	654	654	654	654	654	654	654	654	654	655	655	655	655	654	655	654
12	655	655	655	655	654	655	655	655	655	656	656	656	655	654	654	654	654	654	654	654	654	654	654	654	654	655	656	654
13	654	654	653	653	653	653	653	653	653	653	653	653	652	652	652	652	652	652	652	652	653	653	653	653	653	653	654	652
14	653	653	653	653	653	653	653	653	654	654	655	655	654	654	654	654	655	655	656	656	656	656	657	657	654	657	653	
15	657	657	657	657	657	657	657	657	658	658	659	659	658	658	657	657	657	657	658	658	658	658	658	658	658	658	659	657
16	657	657	657	657	657	657	657	657	657	657	658	658	657	656	656	656	656	656	656	656	656	656	657	657	657	658	656	
17	656	656	656	656	656	656	657	657	657	658	658	658	657	657	657	657	657	657	657	658	658	658	658	658	657	658	656	
18	658	658	658	658	658	658	658	658	659	659	659	659	658	657	657	657	657	657	657	657	657	657	657	657	658	659	657	
19	657	656	656	656	656	656	656	656	656	657	657	656	656	655	655	655	654	654	654	654	654	654	654	654	655	657	654	
20	654	654	654	653	653	653	653	653	654	654	654	654	653	653	652	652	652	651	651	651	651	651	651	651	653	654	651	
21	650	650	650	650	649	649	649	649	650	650	650	650	650	650	650	650	650	651	651	651	652	652	652	652	650	652	649	
22	652	652	653	653	654	654	654	653	654	655	655	655	655	655	655	656	656	656	657	657	657	657	658	658	655	658	652	
23	658	658	658	658	657	657	657	657	657	658	658	658	657	656	656	656	655	655	655	655	655	655	656	655	657	658	655	
24	655	655	655	655	655	655	655	655	655	656	656	656	655	655	654	654	654	654	654	654	654	655	655	655	655	655	656	654
25	655	655	655	655	655	655	655	655	655	656	655	655	655	655	654	654	654	655	655	656	656	656	656	656	655	656	654	
26	656	656	656	656	656	655	656	656	656	656	657	657	657	656	655	655	655	655	655	656	656	656	657	657	656	657	655	
27	657	657	657	657	657	657	657	658	658	--	--	658	658	657	657	657	657	656	656	657	656	657	657	657	657	657	658	656
28	657	657	656	656	656	656	656	657	657	657	657	657	656	655	655	655	655	655	655	655	655	655	655	655	656	657	655	
29	655	655	655	655	654	654	654	655	655	655	656	655	655	654	654	654	654	654	654	654	654	654	654	653	654	656	653	
30	653	652	652	652	651	651	651	651	651	651	651	650	650	649	649	649	649	649	649	649	649	649	649	649	650	653	649	
31	649	648	648	648	648	648	648	648	648	649	649	649	649	649	649	649	649	649	650	650	650	650	651	651	649	651	648	
Avg	655	655	655	655	654	654	655	655	655	655	656	655	655	654	654	654	654	654	655	655	655	655	655	655	655	655	--	--
Max	659	659	659	659	659	659	659	659	660	660	660	660	659	659	659	659	659	659	659	659	660	660	659	659	--	660	--	
Min	649	648	648	648	648	648	648	648	648	649	649	649	649	649	649	649	649	649	649	649	649	649	649	649	--	--	648	

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, BP_mmHg"
Month: Feb 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	651	651	652	652	652	652	652	653	653	654	654	654	654	654	653	653	653	654	654	654	655	655	655	655	653	655	651
2	655	655	655	654	655	655	655	655	655	655	656	656	655	654	654	654	653	653	653	654	654	654	654	654	654	654	653
3	654	654	654	654	654	654	654	654	655	655	655	655	655	654	654	654	654	654	654	654	654	655	655	655	654	655	654
4	654	654	654	654	654	654	655	655	656	656	656	656	656	655	655	655	655	655	655	656	656	656	656	656	655	656	654
5	656	656	656	656	656	656	656	657	657	657	657	657	657	656	656	656	655	655	655	656	656	656	656	656	656	657	655
6	657	657	657	657	656	657	657	657	657	658	658	658	658	657	656	656	656	656	656	656	656	656	657	657	657	657	656
7	656	656	656	656	656	656	656	656	656	657	657	657	656	655	655	655	655	655	655	655	656	656	656	656	656	657	655
8	656	656	655	655	655	655	655	656	656	657	657	657	656	655	655	655	655	655	655	655	655	655	656	656	656	657	655
9	656	656	656	655	655	655	656	656	656	656	656	656	656	655	654	654	654	654	654	654	654	654	654	653	655	656	653
10	653	653	653	653	653	653	653	653	653	653	653	653	653	652	652	652	651	652	652	652	652	652	652	652	652	653	651
11	652	652	652	652	652	653	653	653	654	654	655	655	654	654	653	654	654	654	654	655	655	656	656	656	654	656	652
12	656	656	657	656	656	657	657	657	658	658	658	658	657	657	656	656	656	656	656	656	656	656	656	656	657	658	656
13	656	656	655	655	655	655	655	656	656	657	657	657	656	656	656	655	656	656	656	656	655	656	656	656	656	657	655
14	656	656	656	656	656	655	656	656	656	656	656	656	655	655	654	654	654	654	654	654	654	654	654	654	655	656	654
15	654	654	653	653	653	653	653	654	654	654	654	654	654	653	652	652	652	652	652	652	652	652	653	652	653	654	652
16	652	652	652	652	652	652	652	652	653	653	653	653	652	652	651	651	651	651	651	651	651	652	652	652	652	652	651
17	653	653	653	653	653	653	654	655	655	656	656	656	656	655	655	654	654	654	655	655	655	655	655	655	654	656	653
18	655	655	655	655	656	656	656	656	657	657	657	657	656	655	654	655	655	655	655	656	656	656	656	656	656	657	654
19	656	655	655	655	654	654	655	655	655	656	656	656	655	655	654	654	653	653	653	654	653	653	654	653	654	656	653
20	653	653	653	653	652	652	652	652	653	653	653	653	652	652	651	651	651	651	651	651	651	651	651	651	652	653	651
21	651	651	651	651	650	650	651	651	651	651	652	651	651	650	649	649	649	649	649	649	649	649	649	649	650	652	649
22	649	649	649	649	649	649	649	649	650	650	650	650	650	649	649	649	649	649	649	650	650	650	651	650	649	651	649
23	650	650	650	650	650	651	651	651	652	652	652	652	652	652	652	652	652	652	652	652	652	652	652	652	652	652	650
24	652	652	651	651	651	651	651	652	652	652	652	652	651	651	651	652	652	652	653	653	654	654	654	655	652	655	651
25	654	655	654	654	654	654	654	654	655	655	655	654	653	653	652	652	652	651	651	652	652	652	652	652	653	655	651
26	652	652	651	651	651	651	651	651	651	651	651	651	650	649	649	648	648	648	648	648	648	648	648	648	650	652	648
27	648	648	648	647	647	647	647	648	648	648	648	648	647	646	646	645	645	645	645	645	646	646	646	647	647	648	645
28	647	647	647	647	647	647	647	648	648	649	649	649	649	649	649	649	649	649	650	650	650	651	651	651	649	651	647
Avg	653	653	653	653	653	653	653	654	654	654	654	654	654	653	653	653	653	653	653	653	653	653	653	653	653	--	--
Max	657	657	657	657	656	657	657	657	658	658	658	658	658	657	656	656	656	656	656	656	656	657	657	657	--	658	--
Min	647	647	647	647	647	647	647	648	648	648	648	648	647	646	646	645	645	645	645	645	646	646	646	647	--	--	645

SAROAD for Resolution, East_Plant
"Component, Channel: Table100, BP_mmHg"
Month: Mar 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	651	651	651	651	651	651	652	652	652	653	653	653	652	652	651	651	651	651	652	652	652	652	652	652	652	652	653	651
2	652	652	651	651	650	651	651	651	651	651	650	650	650	649	649	650	650	651	651	651	652	652	652	651	651	652	649	
3	651	650	650	650	649	649	649	649	650	650	650	650	650	649	649	648	648	648	648	648	649	649	649	649	649	651	648	
4	649	649	649	649	649	649	649	650	651	651	652	652	652	652	652	652	652	653	653	654	654	655	655	655	652	655	649	
5	655	656	656	656	656	656	657	657	658	658	659	659	658	657	657	657	657	657	657	657	657	657	657	657	657	659	655	
6	657	657	656	656	655	656	656	656	656	656	656	656	655	655	654	654	654	654	654	654	654	654	655	654	655	657	654	
7	654	654	654	654	654	654	654	654	655	655	655	654	654	653	653	653	652	652	652	652	653	653	653	653	653	655	652	
8	653	653	--	652	652	652	653	653	653	653	653	653	653	652	652	651	651	651	651	651	651	652	652	652	652	653	651	
9	651	651	651	651	651	651	651	651	652	652	652	652	651	651	650	650	650	650	650	650	651	651	651	651	651	652	650	
10	651	651	651	651	651	651	651	652	653	653	654	653	653	653	653	652	652	653	653	653	654	654	654	654	653	654	651	
11	654	654	654	654	655	655	655	656	657	657	657	657	657	656	656	655	655	655	655	655	655	655	655	655	655	657	654	
12	655	654	654	654	654	654	654	655	655	655	655	655	654	654	653	653	653	653	653	653	653	653	653	653	654	655	653	
13	653	653	653	653	653	653	653	654	654	654	654	654	654	654	654	654	654	654	654	655	655	655	656	656	654	656	653	
14	656	656	656	656	656	657	657	658	658	658	658	658	657	656	656	656	655	655	656	656	656	656	657	657	656	658	655	
15	657	657	657	657	657	657	657	657	657	657	657	657	656	656	655	654	654	654	654	654	655	655	655	655	655	657	654	
16	655	655	655	655	655	655	655	655	655	655	655	655	654	653	653	653	653	652	652	652	653	653	653	653	654	655	652	
17	653	653	653	652	652	653	653	653	654	654	654	654	653	653	652	652	652	652	652	652	652	652	653	653	653	654	652	
18	653	653	653	653	653	653	653	653	654	654	654	654	653	653	652	652	652	652	652	652	652	653	653	653	653	654	652	
19	652	652	652	652	651	652	652	652	652	653	653	653	652	652	652	652	652	652	652	652	653	653	654	654	654	652	651	
20	654	654	654	654	654	654	655	655	655	656	656	655	655	655	654	654	654	654	654	654	655	655	655	655	654	656	654	
21	655	655	654	654	654	654	655	655	655	656	656	656	655	655	654	654	654	654	654	654	655	655	655	656	655	656	654	
22	655	655	655	655	655	656	656	656	657	657	657	657	657	656	656	656	655	655	655	655	655	655	655	655	656	657	655	
23	655	655	655	655	655	655	655	655	655	656	656	655	655	654	654	654	653	653	653	653	653	654	654	654	654	656	653	
24	654	653	653	653	653	653	653	653	654	654	654	654	654	653	653	652	652	652	652	652	652	652	652	652	653	654	652	
25	652	652	652	652	652	652	653	653	654	654	654	654	654	654	653	653	653	653	653	654	654	655	655	655	653	655	652	
26	655	655	655	654	655	655	655	656	656	657	657	657	657	656	656	655	655	655	655	656	656	656	656	657	656	657	654	
27	656	656	656	656	656	656	656	657	657	657	657	657	657	656	656	655	655	655	655	655	655	656	656	656	656	657	655	
28	655	655	655	655	655	656	656	656	656	657	657	657	656	656	655	655	655	655	655	655	655	655	655	655	656	657	655	
29	655	655	655	655	655	655	655	656	656	656	656	657	656	656	655	655	655	654	654	654	654	655	655	655	655	657	654	
30	655	655	654	654	654	655	655	655	656	656	656	656	656	655	654	654	654	653	653	654	654	654	654	654	655	656	653	
31	654	654	653	653	653	653	653	654	654	654	654	654	654	653	652	652	652	651	651	651	652	652	652	652	653	654	651	
Avg	654	654	654	653	653	654	654	654	655	655	655	655	654	654	653	653	653	653	653	653	654	654	654	654	654	--	--	
Max	657	657	657	657	657	657	657	658	658	658	659	659	658	657	657	657	657	657	657	657	657	657	657	657	--	659	--	
Min	649	649	649	649	649	649	649	649	650	650	650	650	650	649	649	648	648	648	648	648	648	649	649	649	--	--	648	

-- Indicates Invalid Data

Appendix B: PM₁₀ and PM_{2.5} Data – Hourly

SAROAD for Resolution, East_Plant
"Component, Channel: Table125, conc_PM10_μg/m³_STP"
Month: Jan 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.0	1.1	5.3	5.3	4.2	6.3	8.4	8.4	7.4	7.4	7.4	9.5	9.6	6.4	7.5	7.5	7.5	7.4	7.4	9.5	7.4	8.4	8.5	7.4	6.9	9.6	0.0
2	5.3	4.2	4.2	3.2	4.2	4.2	3.2	2.1	4.2	4.3	1.1	2.1	3.2	3.2	4.3	4.3	6.4	8.6	6.4	6.4	6.4	8.5	9.6	6.4	4.8	9.6	1.1
3	6.4	7.4	7.4	8.5	10.6	9.5	7.4	6.3	6.3	3.2	5.3	8.6	6.4	5.4	6.5	7.5	6.5	7.5	9.6	6.4	5.3	5.3	7.4	9.5	7.1	10.6	3.2
4	6.4	4.2	4.2	5.3	5.3	4.3	4.3	3.2	4.3	6.4	6.5	5.4	4.4	3.3	4.4	4.4	3.3	5.4	5.4	2.2	2.2	1.1	2.2	3.3	4.2	6.5	1.1
5	3.3	3.3	2.2	2.2	1.1	3.3	4.3	2.2	2.2	4.4	5.5	6.6	7.8	7.8	6.7	6.7	11.1	12.2	8.8	6.6	7.7	6.6	7.7	9.9	5.8	12.2	1.1
6	7.7	9.9	9.9	4.4	4.4	7.7	13.1	12.0	8.8	11.0	18.8	25.5	6.7	18.0	9.0	9.0	9.0	6.7	5.6	5.5	6.6	6.6	7.7	7.7	9.6	25.5	4.4
7	32.1	16.6	17.7	16.6	22.1	21.0	23.2	12.1	34.2	67.5	87.7	85.0	31.5	24.8	38.4	52.9	34.9	7.8	6.7	5.6	6.7	12.2	28.7	42.9	30.4	87.7	5.6
8	37.3	39.4	28.3	38.0	34.7	41.2	52.0	29.2	18.4	15.1	19.5	17.4	14.2	14.3	13.2	23.1	18.6	26.2	9.8	12.0	9.8	6.6	9.8	10.9	22.5	52.0	6.6
9	7.7	6.6	8.7	6.5	5.4	5.4	8.7	10.8	10.8	13.1	14.3	12.1	12.2	13.3	10.0	10.0	8.9	8.8	9.9	7.7	7.7	10.9	12.0	18.5	10.0	18.5	5.4
10	12.0	11.9	9.8	9.8	9.8	9.8	9.8	8.7	8.7	12.0	11.0	12.1	14.4	11.1	7.8	6.6	5.5	3.3	3.3	5.5	5.5	5.5	6.6	6.6	8.6	14.4	3.3
11	4.4	5.5	6.5	5.5	5.5	5.5	6.5	4.4	3.3	5.5	7.7	6.6	5.6	7.8	7.9	6.7	8.9	13.3	13.3	12.2	7.7	6.6	6.6	3.3	7.0	13.3	3.3
12	5.5	6.6	3.3	2.2	2.2	4.4	4.4	2.2	2.2	4.4	8.8	6.6	4.4	5.5	6.6	8.9	10.0	8.8	8.8	7.7	5.5	6.6	6.6	6.6	5.8	10.0	2.2
13	5.5	4.4	4.4	2.2	4.4	6.6	6.6	5.5	3.3	3.3	4.4	4.4	6.6	7.7	6.6	4.4	4.4	1.1	0.0	2.2	2.2	3.3	5.4	5.4	4.3	7.7	0.0
14	3.3	3.2	4.3	4.3	3.3	5.4	3.2	3.2	5.4	2.2	4.4	6.6	6.6	7.7	6.6	3.3	4.4	6.6	6.5	4.3	1.1	3.2	4.3	2.2	4.4	7.7	1.1
15	4.3	3.2	3.2	2.2	2.2	4.3	6.5	7.5	6.5	7.6	7.6	9.8	17.6	12.1	14.4	12.2	6.6	1.1	1.1	3.3	4.4	2.2	4.4	7.6	6.3	17.6	1.1
16	16.4	9.8	6.5	0.0	0.0	3.3	2.2	2.2	3.3	11.0	13.2	7.7	11.1	10.0	1.1	3.4	8.9	7.8	4.4	4.4	6.6	4.4	3.3	4.4	6.1	16.4	0.0
17	3.3	3.3	3.3	3.3	3.3	4.3	3.2	4.3	6.5	7.7	7.8	3.4	0.0	0.0	4.5	11.2	14.5	14.5	11.1	12.1	9.9	4.4	4.4	4.4	6.0	14.5	0.0
18	4.4	5.5	5.5	4.4	5.5	5.5	5.5	7.7	6.6	5.5	23.3	5.6	4.5	6.8	11.3	13.6	13.5	12.3	13.4	13.3	7.8	5.5	6.6	4.4	8.3	23.3	4.4
19	0.0	1.1	1.1	0.0	1.1	4.4	3.3	0.0	0.0	1.1	4.5	19.2	3.4	6.8	12.5	11.3	12.4	12.4	12.3	13.4	13.4	11.1	6.7	2.2	6.4	19.2	0.0
20	0.0	2.2	2.2	1.1	2.2	5.5	11.0	11.0	6.6	5.6	5.6	7.9	9.1	9.1	8.0	6.8	6.8	7.9	7.8	8.9	7.8	8.9	6.7	3.4	6.3	11.0	0.0
21	3.4	2.2	3.4	2.2	4.5	7.8	6.7	7.8	7.8	11.2	13.5	18.0	15.8	22.5	24.8	31.5	28.0	12.2	5.5	-3.3	-3.3	1.1	2.2	0.0	9.4	31.5	-3.3
22	0.0	3.3	4.4	4.3	7.6	8.6	9.7	16.2	22.6	21.5	12.9	10.8	6.5	4.4	4.4	2.2	5.5	7.6	4.3	2.2	7.5	7.5	4.3	3.2	7.6	22.6	0.0
23	2.1	2.1	2.1	4.3	3.2	3.2	3.2	5.3	4.3	2.2	5.4	6.5	5.5	2.2	1.1	3.3	8.8	10.9	6.5	3.3	3.3	4.4	3.3	8.7	4.4	10.9	1.1
24	18.5	12.0	21.8	5.4	8.7	13.0	8.7	4.3	6.5	91.3	47.0	14.3	31.0	35.6	3.4	30.4	3.4	5.6	7.8	5.5	8.9	17.7	7.7	5.5	17.2	91.3	3.4
25	3.3	3.3	2.2	1.1	1.1	5.5	5.5	0.0	6.6	8.8	18.8	18.9	6.7	5.6	4.5	4.5	6.7	8.9	7.8	5.5	3.3	4.4	3.3	4.4	5.9	18.9	0.0
26	4.4	6.7	8.9	5.5	5.5	6.6	8.8	12.2	14.4	8.9	16.7	12.3	10.1	4.5	5.6	9.0	6.7	11.2	8.9	6.7	7.8	6.7	25.4	18.8	9.7	25.4	4.4
27	5.5	5.5	5.5	5.5	4.4	3.3	3.3	3.3	4.4	--	--	--	--	--	4.5	9.0	13.5	10.0	4.4	7.7	10.0	6.7	3.3	2.2	5.9	13.5	2.2
28	3.3	1.1	1.1	5.5	6.6	7.7	7.7	5.5	6.6	5.6	6.7	4.5	0.0	4.5	10.2	10.1	9.0	10.1	10.1	8.9	7.8	4.5	3.3	4.5	6.0	10.2	0.0
29	4.4	4.5	4.4	3.3	3.3	2.2	4.4	6.7	5.6	6.7	6.7	5.6	6.8	5.7	7.9	10.1	6.7	4.5	4.4	4.4	2.2	1.1	1.1	5.5	4.9	10.1	1.1
30	5.5	1.1	0.0	1.1	2.2	-2.2	-4.4	0.0	1.1	-1.1	-1.1	0.0	0.0	-1.1	-2.2	0.0	1.1	0.0	0.0	0.0	2.2	1.1	-1.1	0.0	0.1	5.5	-4.4
31	-2.2	-3.3	-1.1	3.3	2.2	-2.2	0.0	0.0	-1.1	-3.3	-2.2	0.0	1.1	1.1	2.2	1.1	0.0	2.2	3.3	4.4	1.1	2.2	5.5	5.5	0.8	5.5	-3.3
Avg	6.9	6.1	6.2	5.4	5.8	7.0	7.8	6.6	7.3	11.7	13.0	11.8	8.8	8.9	8.2	10.5	9.4	8.5	6.9	6.3	5.9	6.0	6.9	7.3	7.8	--	--
Max	37.3	39.4	28.3	38.0	34.7	41.2	52.0	29.2	34.2	91.3	87.7	85.0	31.5	35.6	38.4	52.9	34.9	26.2	13.4	13.4	13.4	17.7	28.7	42.9	--	91.3	--
Min	-2.2	-3.3	-1.1	0.0	0.0	-2.2	-4.4	0.0	-1.1	-3.3	-2.2	0.0	0.0	-1.1	-2.2	0.0	0.0	0.0	0.0	-3.3	-3.3	1.1	-1.1	0.0	--	--	-4.4

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table125, conc_PM10_μg/m³_STP"
Month: Feb 2015

Day	Hour of day																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	3.3	1.1	3.3	3.3	2.2	3.3	2.2	2.2	3.3	0.0	1.1	1.1	3.3	2.2	2.2	6.7	6.7	6.6	7.7	9.9	6.6	2.2	3.3	4.4	3.7	9.9	0.0
2	1.1	1.1	0.0	-2.2	1.1	4.4	4.4	3.3	2.2	3.3	6.7	5.6	4.5	5.6	4.5	7.9	10.1	7.9	8.9	6.7	5.6	7.7	4.4	2.2	4.5	10.1	-2.2
3	2.2	3.3	2.2	3.3	4.4	6.6	6.6	3.3	6.6	7.8	5.6	4.5	10.1	13.6	11.3	9.0	13.5	12.3	8.9	8.9	7.8	6.7	5.6	6.7	7.1	13.6	2.2
4	4.5	5.6	8.9	10.0	13.2	12.1	9.9	9.9	8.8	7.8	7.9	10.1	14.6	15.8	13.6	10.2	11.3	13.5	15.7	20.1	16.7	14.4	10.0	5.6	11.2	20.1	4.5
5	4.4	5.5	5.5	6.6	4.4	3.3	4.4	4.4	6.7	5.6	18.0	5.7	8.0	8.0	6.9	6.9	4.6	6.8	9.0	5.6	3.4	1.1	4.5	6.7	6.1	18.0	1.1
6	6.7	6.7	6.7	6.7	6.7	8.9	8.9	8.9	8.9	7.9	9.0	13.6	11.4	8.0	10.3	9.2	6.9	6.8	5.7	4.5	3.4	2.2	2.2	3.4	7.2	13.6	2.2
7	3.4	1.1	2.2	1.1	2.2	4.4	5.5	5.5	7.8	11.2	7.9	5.7	6.8	9.1	11.4	12.5	13.6	14.7	15.7	15.7	13.4	7.9	3.4	4.5	7.8	15.7	1.1
8	4.5	5.6	3.3	1.1	4.4	7.7	6.6	6.6	8.9	9.0	10.2	11.4	10.2	20.5	13.7	14.8	14.8	19.3	15.8	21.4	14.6	7.8	2.3	2.3	9.9	21.4	1.1
9	3.4	3.4	4.5	4.4	4.4	6.6	7.7	7.8	10.0	10.2	5.7	3.4	6.9	9.2	11.5	14.9	14.9	14.8	14.8	14.8	12.5	6.8	3.4	2.3	8.3	14.9	2.3
10	-1.1	1.1	3.4	1.1	1.1	4.5	5.6	2.2	4.5	5.7	5.7	6.9	10.3	10.3	9.2	12.6	16.0	19.3	18.1	12.4	16.9	12.4	19.2	18.0	9.0	19.3	-1.1
11	12.3	10.1	7.8	10.0	11.1	8.9	11.1	30.1	27.9	32.3	25.7	21.3	18.1	24.9	40.7	78.1	37.3	14.7	28.1	17.9	24.5	6.7	10.0	7.8	21.6	78.1	6.7
12	6.6	22.0	11.0	16.4	4.4	6.6	9.8	29.5	16.5	13.2	14.4	46.8	23.5	3.4	3.4	3.4	6.8	6.7	7.8	11.1	11.1	7.7	9.9	13.2	12.7	46.8	3.4
13	12.1	8.8	11.0	11.0	24.2	12.1	13.2	12.1	9.9	11.1	13.4	16.7	13.5	9.1	6.8	7.9	6.8	7.9	6.7	5.6	6.7	5.6	5.6	8.9	10.3	24.2	5.6
14	7.8	6.7	7.8	10.0	8.9	5.6	7.8	11.1	8.9	19.1	7.9	10.2	9.1	6.9	5.7	30.9	28.5	11.4	9.1	7.9	6.7	6.7	7.9	7.8	10.4	30.9	5.6
15	7.9	7.8	7.8	7.8	9.0	12.3	10.0	10.0	15.6	14.6	11.2	7.9	5.6	5.6	7.9	11.3	11.3	9.0	11.2	15.7	17.9	19.0	15.6	15.6	11.2	19.0	5.6
16	14.5	12.3	10.0	10.0	10.0	8.8	7.7	6.6	10.0	13.4	11.2	10.1	9.0	10.2	17.0	14.7	18.1	20.3	15.8	15.7	14.6	14.6	13.5	11.2	12.5	20.3	6.6
17	9.0	6.7	25.4	33.0	12.1	21.9	12.0	10.9	11.0	9.9	8.9	8.9	7.8	6.7	4.5	4.5	7.9	12.3	11.2	10.0	12.2	16.6	12.1	8.8	11.9	33.0	4.5
18	5.5	6.6	7.7	6.6	6.6	6.6	6.5	9.8	13.2	17.8	13.5	9.0	9.0	12.5	11.4	13.6	21.4	19.1	22.4	21.2	13.3	14.4	14.4	12.2	12.3	22.4	5.5
19	6.7	2.2	2.2	4.4	5.5	6.6	6.6	5.5	6.7	12.3	11.3	10.2	18.1	10.2	12.5	19.4	15.9	14.8	12.4	21.4	6.8	5.6	3.4	5.6	9.4	21.4	2.2
20	7.8	8.9	10.0	7.8	17.8	17.7	14.4	14.4	18.9	19.1	20.3	12.5	11.4	30.7	13.7	11.4	19.3	10.2	18.1	23.7	18.0	20.2	13.5	13.5	15.6	30.7	7.8
21	14.6	11.2	5.6	6.7	7.8	7.8	6.6	8.9	11.2	9.0	9.0	7.9	6.8	9.1	11.4	10.3	5.7	9.1	11.3	9.1	10.2	9.0	6.8	10.1	9.0	14.6	5.6
22	10.1	9.0	11.2	11.2	7.8	10.1	12.3	7.8	9.0	10.1	11.2	7.9	6.8	10.2	11.3	26.0	14.7	18.0	17.9	13.4	14.6	19.0	12.3	11.1	12.2	26.0	6.8
23	7.8	5.5	5.5	6.6	7.7	6.6	6.6	8.8	8.8	7.7	6.6	6.7	5.5	8.9	10.1	5.6	10.1	15.5	11.1	4.4	5.5	9.9	8.8	6.6	7.8	15.5	4.4
24	4.4	5.5	4.4	4.4	5.5	4.4	6.6	7.6	6.5	4.4	3.3	3.3	3.3	5.5	7.7	7.6	5.4	3.3	3.3	3.3	3.2	7.6	6.5	4.3	5.0	7.7	3.2
25	2.2	0.0	1.1	4.3	5.4	2.2	2.2	5.4	6.5	6.6	6.6	3.3	4.4	8.9	7.8	4.5	6.7	10.0	12.2	14.4	15.5	14.3	12.2	12.2	7.0	15.5	0.0
26	11.0	8.8	6.6	3.3	7.7	12.0	10.9	18.6	14.4	18.9	21.3	15.8	17.0	6.8	9.1	11.4	10.2	10.2	12.4	10.1	7.9	9.0	12.4	13.5	11.6	21.3	3.3
27	9.0	7.8	8.9	6.6	5.5	7.7	8.9	11.0	24.5	15.7	14.7	15.8	14.8	11.4	11.4	18.3	26.3	14.8	21.6	21.5	16.9	29.2	20.2	15.7	14.9	29.2	5.5
28	14.5	14.5	13.4	12.3	14.5	13.4	10.0	12.2	15.5	12.2	19.9	17.7	12.2	18.9	19.0	16.7	17.8	15.6	15.6	11.1	11.1	13.3	--	--	14.6	19.9	10.0
Avg	7.0	6.7	7.1	7.4	7.7	8.3	8.0	9.8	10.8	11.3	11.0	10.7	10.1	10.8	10.9	14.3	13.7	12.3	13.2	12.8	11.3	10.6	9.0	8.7	10.2	--	--
Max	14.6	22.0	25.4	33.0	24.2	21.9	14.4	30.1	27.9	32.3	25.7	46.8	23.5	30.7	40.7	78.1	37.3	20.3	28.1	23.7	24.5	29.2	20.2	18.0	--	78.1	--
Min	-1.1	0.0	0.0	-2.2	1.1	2.2	2.2	2.2	2.2	0.0	1.1	1.1	3.3	2.2	2.2	3.4	4.6	3.3	3.3	3.3	3.2	1.1	2.2	2.2	--	--	-2.2

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table125, conc_PM10_μg/m³_STP"
Month: Mar 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-2.2	-6.6	5.5	6.5	2.2	2.2	3.3	1.1	0.0	0.0	--	6.5	-6.6
3	1.1	1.1	-2.2	-1.1	0.0	2.2	4.3	3.3	2.2	3.3	3.3	2.2	5.5	6.7	3.3	4.5	3.3	-2.2	1.1	3.3	1.1	2.2	3.3	4.4	2.3	6.7	-2.2
4	2.2	2.2	4.4	3.3	2.2	1.1	3.3	6.5	8.8	7.7	5.5	4.4	1.1	2.2	--	6.7	6.7	5.5	2.2	1.1	5.5	6.5	4.4	5.4	4.3	8.8	1.1
5	7.6	6.5	3.3	3.3	4.3	5.4	4.3	3.3	3.3	7.6	17.6	16.5	8.9	10.0	6.7	2.2	6.7	8.9	5.5	6.6	5.5	7.7	8.8	6.6	7.0	17.6	2.2
6	6.6	22.9	12.0	29.5	32.7	40.3	25.0	21.8	16.4	46.3	16.7	15.7	11.3	6.8	8.0	13.6	20.4	12.4	9.0	4.5	6.7	8.9	6.7	16.7	17.1	46.3	4.5
7	13.3	8.9	6.7	8.9	10.0	9.9	11.0	12.2	12.2	16.8	10.1	9.1	6.8	4.6	6.9	9.2	9.2	10.3	10.2	32.8	13.5	11.2	8.9	10.1	10.9	32.8	4.6
8	10.1	--	--	10.1	8.9	7.8	6.6	6.7	10.1	12.4	12.4	12.5	14.8	14.8	14.8	11.4	9.1	11.4	20.4	17.0	19.2	11.3	12.4	12.4	12.1	20.4	6.6
9	13.5	14.6	13.5	13.4	17.9	14.5	14.4	14.4	19.1	15.8	19.2	22.7	14.8	19.5	18.3	13.8	14.9	18.3	19.4	18.2	18.2	18.1	17.0	19.2	16.8	22.7	13.4
10	13.6	13.4	14.5	15.6	12.2	11.1	10.0	10.0	10.1	24.9	19.3	10.3	12.6	12.6	20.7	17.2	12.6	11.4	12.5	14.8	19.3	12.4	10.1	6.7	13.7	24.9	6.7
11	6.7	10.1	12.3	11.1	8.9	8.9	7.8	10.0	12.3	10.1	9.1	18.2	11.4	10.3	8.0	9.2	10.3	24.0	17.1	14.8	12.4	10.1	12.4	13.5	11.6	24.0	6.7
12	11.3	9.0	11.3	12.4	9.0	9.0	12.3	11.2	7.9	20.4	20.5	20.4	22.8	16.0	11.5	10.3	14.8	14.8	10.2	10.2	12.4	9.0	5.6	2.2	12.3	22.8	2.2
13	4.5	7.8	7.8	6.7	5.6	6.7	8.9	6.7	6.7	9.0	12.5	13.7	10.3	8.0	8.0	9.2	10.3	9.1	10.2	12.4	10.2	7.9	7.9	8.9	8.7	13.7	4.5
14	8.9	6.7	7.8	8.9	7.8	11.1	13.3	14.4	29.1	23.6	22.6	20.4	23.9	18.3	12.6	12.6	13.7	13.7	11.4	18.1	7.9	10.1	13.4	11.2	14.2	29.1	6.7
15	6.7	6.7	7.8	6.7	6.7	24.3	19.9	13.3	12.3	12.4	23.7	39.7	59.3	35.4	16.0	26.4	12.6	12.6	10.3	11.3	14.6	11.3	10.2	11.2	17.1	59.3	6.7
16	10.1	11.2	10.0	8.9	18.9	15.6	20.0	17.9	15.8	26.1	18.2	8.0	9.2	8.1	8.1	8.1	7.0	8.1	8.0	6.9	6.8	10.2	11.3	6.8	11.6	26.1	6.8
17	4.5	4.5	5.6	10.1	10.1	7.9	10.1	12.4	12.5	11.4	13.7	14.9	10.4	10.4	11.5	18.4	20.7	19.6	12.6	19.5	16.0	18.3	14.9	16.0	12.8	20.7	4.5
18	20.5	18.2	20.4	15.8	15.8	13.5	13.5	14.6	21.3	14.6	13.5	13.6	12.4	11.3	14.7	19.2	23.6	18.9	12.2	12.2	10.0	5.5	6.7	10.0	14.7	23.6	5.5
19	7.8	7.8	6.7	7.8	10.0	7.7	6.6	6.6	1.1	-1.1	2.2	3.3	1.1	2.3	5.6	6.8	6.7	7.8	10.1	11.2	10.0	11.1	8.9	8.8	6.5	11.2	-1.1
20	5.5	4.4	6.6	8.8	5.5	5.5	9.9	11.0	10.0	8.9	7.9	5.6	7.9	9.1	12.5	18.1	10.1	7.9	3.4	1.1	4.5	7.8	6.7	5.5	7.7	18.1	1.1
21	4.4	4.4	7.8	6.7	2.2	3.3	5.5	4.4	3.4	5.6	6.8	5.7	7.9	6.8	6.8	10.3	10.3	9.1	10.2	12.5	12.4	11.3	11.2	10.1	7.5	12.5	2.2
22	7.8	8.9	10.0	10.0	11.1	10.0	8.9	8.9	9.0	9.0	9.1	8.0	--	--	2.3	5.7	5.7	5.7	8.0	5.7	5.6	9.0	10.1	6.7	8.0	11.1	2.3
23	5.6	7.9	7.9	7.9	7.8	7.8	6.7	7.8	11.2	11.3	19.3	23.9	12.6	11.5	11.5	12.6	12.6	13.8	11.4	11.4	13.6	13.6	13.5	11.2	11.4	23.9	5.6
24	11.2	10.1	8.9	8.9	6.7	7.8	10.0	12.3	16.9	12.4	18.2	8.0	8.0	9.2	11.5	11.5	13.8	16.1	24.0	21.7	15.9	16.9	14.6	14.6	12.9	24.0	6.7
25	14.6	12.3	12.4	11.2	10.1	10.0	17.8	30.2	20.3	15.9	20.4	20.5	19.5	12.6	14.9	17.2	14.9	19.5	16.0	13.7	11.4	10.2	17.0	15.7	15.8	30.2	10.0
26	9.0	3.4	25.8	56.0	25.8	45.9	22.3	21.2	13.4	18.0	13.6	13.7	10.3	6.9	5.8	5.8	10.4	10.3	11.4	8.0	6.8	6.8	1.1	2.3	14.7	56.0	1.1
27	3.4	5.6	6.7	2.2	3.4	5.6	5.6	5.6	9.1	10.2	9.2	8.1	7.0	9.3	10.5	12.8	12.8	11.6	10.4	11.5	9.2	5.7	6.8	6.8	7.9	12.8	2.2
28	10.2	9.1	7.9	11.3	6.8	4.5	5.6	6.8	10.3	10.3	8.1	3.5	5.8	10.5	10.5	8.2	9.3	9.3	9.3	18.4	11.5	8.0	3.4	3.4	8.4	18.4	3.4
29	5.7	4.5	3.4	5.6	5.6	5.6	6.7	6.8	11.4	10.3	9.2	15.1	9.3	9.3	8.2	7.0	11.7	12.8	13.9	12.7	11.4	9.1	5.7	10.2	8.8	15.1	3.4
30	8.0	5.7	9.1	9.1	7.9	9.0	13.5	19.2	12.5	12.7	13.9	15.1	12.8	11.7	12.8	12.9	11.7	14.0	15.1	13.9	13.8	12.6	11.4	19.4	12.4	19.4	5.7
31	11.4	10.3	10.2	10.2	11.4	10.2	11.3	22.6	17.1	18.4	20.7	17.4	22.1	22.1	18.7	19.8	39.7	30.3	19.7	18.5	13.9	18.4	23.0	20.6	18.3	39.7	10.2
Avg	8.5	8.5	9.2	11.0	9.8	11.1	10.9	11.8	11.9	13.9	13.7	13.5	12.8	11.3	10.3	11.1	12.4	12.4	11.2	12.2	10.8	10.1	9.6	9.9	11.3	--	--
Max	20.5	22.9	25.8	56.0	32.7	45.9	25.0	30.2	29.1	46.3	23.7	39.7	59.3	35.4	20.7	26.4	39.7	30.3	24.0	32.8	19.3	18.4	23.0	20.6	--	59.3	--
Min	1.1	1.1	-2.2	-1.1	0.0	1.1	3.3	3.3	1.1	-1.1	2.2	2.2	1.1	2.2	-2.2	-6.6	3.3	-2.2	1.1	1.1	1.1	1.1	0.0	0.0	--	--	-6.6

-- Indicates Invalid Data

SAROAD for Resolution, West_Plant
"Component, Channel: Table125, conc_PM10_μg/m³ STP"
Month: Jan 2015

Day	Hour of day																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	1.0	0.0	0.0	3.1	5.1	6.1	6.1	5.1	6.1	6.1	5.1	6.1	6.2	7.2	7.2	5.2	5.2	6.2	5.1	4.1	9.2	9.2	6.1	7.1	5.3	9.2	0.0
2	6.1	6.1	4.1	3.1	1.0	0.0	2.0	2.0	3.1	3.1	2.1	1.0	1.0	3.1	4.2	5.2	6.2	6.2	8.3	8.3	6.2	2.1	2.0	5.1	3.8	8.3	0.0
3	7.1	6.1	5.1	7.1	9.1	6.1	6.1	11.2	10.2	7.2	5.2	1.0	2.1	2.1	2.1	4.2	7.3	7.3	5.2	4.1	8.2	7.2	2.1	5.1	5.8	11.2	1.0
4	6.2	3.1	0.0	1.0	2.1	2.1	-1.0	-1.0	1.0	3.1	4.2	3.2	3.2	4.3	1.1	-1.1	-2.1	-1.1	2.1	3.2	2.1	1.1	1.1	3.2	1.7	6.2	-2.1
5	2.1	2.1	2.1	0.0	0.0	1.1	2.1	1.1	3.1	4.2	2.1	2.2	3.2	1.1	2.2	0.0	4.3	7.6	6.5	6.5	7.5	6.4	4.3	2.1	3.1	7.6	0.0
6	3.2	3.2	2.1	2.1	3.2	1.1	-2.1	1.1	4.2	3.2	2.2	3.3	2.2	0.0	0.0	3.3	2.2	-2.2	-1.1	4.3	4.3	2.2	1.1	2.2	1.9	4.3	-2.2
7	6.4	5.4	5.4	7.6	5.4	3.2	30.4	6.5	4.3	6.5	9.8	17.5	9.9	5.5	2.2	6.6	5.5	2.2	1.1	3.3	4.3	3.3	21.6	29.1	8.5	30.4	1.1
8	28.0	32.2	29.9	27.7	21.3	19.1	20.1	19.1	20.0	11.6	17.9	16.9	13.8	17.1	--	12.8	13.8	11.7	8.5	8.5	7.5	6.4	8.5	9.6	16.6	32.2	6.4
9	6.4	6.4	7.5	5.3	4.3	6.4	6.4	4.2	4.2	5.3	5.3	4.3	3.2	5.4	6.5	4.3	6.5	4.3	6.4	9.7	6.4	5.4	10.7	8.5	6.0	10.7	3.2
10	8.5	11.6	10.6	6.4	5.3	7.4	6.3	5.3	7.4	6.4	4.2	6.4	6.4	4.3	4.3	1.1	0.0	0.0	2.1	4.3	3.2	0.0	1.1	2.1	4.8	11.6	0.0
11	2.1	5.3	5.3	3.2	5.3	6.4	4.2	5.3	6.4	4.3	5.3	5.4	2.2	2.2	4.4	5.5	6.5	6.5	7.5	7.5	5.3	3.2	2.1	2.1	4.7	7.5	2.1
12	6.4	6.4	3.2	2.1	1.1	3.2	5.3	4.2	3.2	0.0	3.2	2.1	0.0	3.2	5.4	4.3	2.1	3.2	3.2	4.3	3.2	1.1	4.3	4.3	3.3	6.4	0.0
13	5.3	5.3	1.1	-2.1	1.1	6.4	6.4	3.2	4.3	6.4	-1.1	-3.2	4.3	10.6	6.4	-1.1	2.1	2.1	-2.1	-2.1	-3.2	-1.1	-1.1	-2.1	1.9	10.6	-3.2
14	2.1	4.2	1.1	2.1	3.1	4.2	3.1	2.1	3.1	3.2	3.2	1.1	1.1	0.0	-3.2	0.0	0.0	-2.1	-1.1	-1.1	-1.1	0.0	1.1	3.2	1.2	4.2	-3.2
15	1.1	0.0	0.0	-1.1	1.1	4.2	4.2	3.1	3.1	5.3	5.3	2.1	2.1	1.1	1.1	1.1	-1.1	-3.2	-2.1	0.0	0.0	0.0	2.1	2.1	1.3	5.3	-3.2
16	2.1	2.1	2.1	3.2	0.0	1.1	2.1	2.1	6.4	5.3	2.1	2.1	3.2	0.0	-3.3	-1.1	-2.2	0.0	3.2	0.0	-2.1	1.1	3.2	1.1	1.4	6.4	-3.3
17	1.1	2.1	0.0	1.1	2.1	0.0	-1.1	0.0	0.0	-1.1	1.1	1.1	2.2	1.1	1.1	8.7	9.7	8.6	41.8	6.4	8.5	10.7	7.5	41.4	6.4	41.8	-1.1
18	3.2	3.2	2.1	-1.1	-2.1	0.0	-1.1	-1.1	3.2	4.3	2.2	-1.1	1.1	3.3	5.5	7.6	10.9	23.8	44.2	6.4	8.6	9.6	10.7	18.2	6.7	44.2	-2.1
19	5.3	2.1	-1.1	1.1	0.0	0.0	7.4	22.3	3.2	5.4	3.3	0.0	5.5	12.0	21.9	5.5	8.8	12.0	13.0	8.6	6.4	7.5	4.3	2.1	6.5	22.3	-1.1
20	4.3	4.3	4.3	3.2	1.1	1.1	1.1	-1.1	-1.1	0.0	3.3	2.2	-4.4	-3.3	3.3	4.4	8.8	10.9	13.0	10.8	4.3	5.4	7.6	4.3	3.7	13.0	-4.4
21	3.2	2.2	0.0	1.1	1.1	4.3	18.3	11.9	10.8	6.5	3.3	6.5	18.5	23.9	19.6	22.9	25.0	6.5	21.5	-2.1	0.0	0.0	0.0	2.1	8.6	25.0	-2.1
22	2.1	2.1	3.2	30.5	24.2	2.1	2.1	3.1	4.2	17.7	7.3	3.2	17.9	-4.2	-3.2	0.0	2.1	-1.1	-2.1	0.0	3.1	2.1	3.1	2.1	5.1	30.5	-4.2
23	1.0	3.1	1.0	0.0	1.0	-1.0	-1.0	0.0	2.1	3.1	4.2	1.1	-1.1	-1.1	-1.1	--	2.1	3.2	0.0	1.1	2.1	1.1	0.0	1.1	1.0	4.2	-1.1
24	7.5	11.7	17.0	11.7	12.8	41.6	25.6	88.3	18.1	22.4	12.9	5.4	3.2	6.5	3.3	-2.2	-1.1	0.0	1.1	1.1	-1.1	0.0	1.1	0.0	12.0	88.3	-2.2
25	1.1	3.2	5.3	1.1	-2.1	1.1	3.2	5.3	5.3	5.4	8.6	5.4	1.1	2.2	0.0	1.1	1.1	2.2	3.2	2.2	-3.2	-4.3	-2.2	1.1	2.0	8.6	-4.3
26	0.0	-1.1	0.0	-1.1	1.1	4.3	7.6	10.8	6.5	4.3	7.6	3.3	2.2	3.3	5.4	5.4	4.4	--	--	--	17.2	24.6	29.9	12.8	7.1	29.9	-1.1
27	9.7	19.4	-1.1	0.0	3.2	2.1	2.1	5.3	6.4	4.3	4.2	4.3	3.2	4.3	4.3	3.3	1.1	2.2	6.4	7.5	4.3	3.2	6.4	7.5	4.7	19.4	-1.1
28	6.4	4.3	0.0	1.1	3.2	0.0	-1.1	0.0	-1.1	1.1	3.2	6.5	7.6	7.7	8.7	7.6	7.6	5.4	6.5	5.4	2.2	2.2	6.4	7.5	4.1	8.7	-1.1
29	5.4	3.2	2.2	-2.2	-2.2	3.2	2.2	1.1	5.4	7.6	5.4	3.3	-1.1	-2.2	2.2	1.1	1.1	3.2	7.5	4.3	-1.1	-1.1	-1.1	1.1	2.0	7.6	-2.2
30	3.2	5.4	7.5	2.1	1.1	4.3	1.1	0.0	0.0	1.1	2.1	0.0	0.0	-4.3	-4.3	-1.1	-3.2	-4.3	-3.2	-1.1	2.1	-1.1	0.0	3.2	0.4	7.5	-4.3
31	1.1	0.0	1.1	1.1	-1.1	1.1	3.2	2.1	2.1	3.2	2.1	-2.1	-3.2	-2.1	2.1	3.2	0.0	-1.1	-1.1	2.1	4.3	3.2	-1.1	-2.1	0.8	4.3	-3.2
Avg	4.8	5.3	3.9	3.9	3.6	4.6	5.5	7.2	5.0	5.4	4.7	3.6	3.8	3.7	3.6	3.9	4.4	4.0	6.8	3.9	3.8	3.6	4.6	6.0	4.6	--	--
Max	28.0	32.2	29.9	30.5	24.2	41.6	30.4	88.3	20.0	22.4	17.9	17.5	18.5	23.9	21.9	22.9	25.0	23.8	44.2	10.8	17.2	24.6	29.9	41.4	--	88.3	--
Min	0.0	-1.1	-1.1	-2.2	-2.2	-1.0	-2.1	-1.1	-1.1	-1.1	-1.1	-3.2	-4.4	-4.3	-4.3	-2.2	-3.2	-4.3	-3.2	-2.1	-3.2	-4.3	-2.2	-2.1	--	--	-4.4

-- Indicates Invalid Data

SAROAD for Resolution, West_Plant
"Component, Channel: Table125, conc_PM10_μg/m³ STP"
Month: Feb 2015

Day	Hour of day																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1.1	0.0	1.1	0.0	0.0	2.1	1.1	1.1	4.2	5.3	1.1	-3.2	-4.3	-2.2	0.0	2.2	3.2	2.1	4.3	6.4	5.3	3.2	2.1	2.1
2	2.1	1.1	-1.1	-2.1	-2.1	-1.1	-1.1	-1.1	1.1	1.1	3.2	5.4	3.3	-1.1	1.1	6.5	9.8	7.6	9.7	10.7	6.4	4.3	4.3	5.3
3	3.2	-1.1	2.1	2.1	0.0	3.2	4.3	6.4	9.6	7.5	6.5	3.3	1.1	7.6	14.2	9.8	6.6	9.8	10.8	9.7	8.6	9.6	7.5	4.3
4	6.4	8.5	9.6	8.5	7.4	10.6	14.8	19.0	7.5	8.6	13.0	15.2	15.2	14.2	16.4	8.8	12.0	15.2	18.4	17.2	16.1	9.6	19.2	12.8
5	9.6	6.4	3.2	2.1	5.3	5.3	4.3	9.6	10.7	6.5	4.4	2.2	2.2	4.4	4.5	1.1	-2.2	0.0	2.2	2.2	6.6	13.2	18.6	49.2
6	0.0	0.0	2.2	3.3	1.1	1.1	5.4	5.4	5.4	5.5	7.7	6.6	2.2	3.3	5.6	2.2	3.3	5.5	33.9	0.0	4.4	4.3	3.2	8.6
7	5.4	18.3	10.7	34.3	1.1	3.2	16.0	19.1	3.2	6.5	9.8	12.0	8.8	104.0	30.8	7.7	6.6	6.6	33.7	8.6	9.7	11.8	10.7	11.8
8	19.2	17.1	8.5	24.5	66.1	-1.1	4.3	6.4	8.6	8.7	8.7	15.3	15.4	31.9	16.5	21.0	23.2	18.7	25.1	16.3	26.0	10.8	90.5	39.8
9	14.0	34.3	17.1	6.4	6.4	6.4	18.2	13.9	17.2	9.8	7.7	8.8	12.2	13.3	28.9	5.6	6.7	12.2	19.8	20.7	12.0	14.1	15.2	9.8
10	3.3	-1.1	2.2	6.5	6.5	5.4	6.5	10.8	9.7	4.4	4.4	9.9	26.5	19.9	11.1	11.1	11.1	11.0	11.0	24.0	13.0	20.6	15.1	18.3
11	10.8	12.9	11.8	11.9	11.8	9.7	18.3	99.6	352.0	54.2	22.8	13.1	14.2	13.2	13.2	8.8	1.1	2.2	4.4	6.5	8.6	5.4	2.2	3.2
12	2.1	3.2	4.3	3.2	1.1	1.1	3.2	4.2	6.4	6.4	2.2	2.2	2.2	0.0	0.0	2.2	3.3	-1.1	1.1	5.4	6.5	6.5	1.1	2.1
13	6.4	8.6	8.6	6.4	3.2	4.3	6.4	6.4	4.3	6.5	6.5	5.4	5.5	5.5	3.3	1.1	-2.2	-1.1	2.2	2.2	4.3	3.3	1.1	5.4
14	7.6	7.5	5.4	4.3	6.5	7.5	5.4	4.3	9.7	8.7	5.5	16.5	6.6	6.7	4.5	3.3	6.7	9.9	11.0	5.5	3.3	5.5	5.5	7.6
15	6.5	5.4	7.6	10.8	9.7	9.7	11.8	10.8	13.0	9.8	6.5	8.7	8.7	5.5	7.7	24.1	12.0	10.9	9.8	10.8	13.0	20.4	31.1	24.7
16	12.9	13.9	13.9	11.8	10.7	10.7	9.6	10.6	11.8	9.7	9.7	8.7	7.7	9.9	10.9	9.9	10.9	24.1	17.4	17.4	16.2	16.2	14.0	13.0
17	11.8	7.5	9.7	16.1	10.7	9.6	8.5	9.6	5.3	-1.1	0.0	4.3	4.3	3.3	6.5	9.8	26.1	20.6	20.5	31.1	6.4	32.0	-1.1	33.0
18	17.0	4.3	23.4	7.5	9.6	7.5	7.4	20.1	10.6	6.5	6.5	6.5	6.5	8.8	9.9	12.1	22.9	13.1	17.4	27.0	34.4	10.7	12.8	72.7
19	8.6	9.6	21.4	8.6	17.1	6.4	7.5	10.7	13.9	11.9	12.0	13.1	11.0	11.0	32.0	21.0	9.9	16.5	34.9	10.8	13.0	12.9	21.5	5.4
20	3.2	3.2	8.6	11.8	10.7	17.2	18.2	22.5	33.4	14.1	18.6	5.5	11.0	14.3	13.3	11.0	16.5	16.5	15.3	18.5	19.6	23.9	22.7	15.1
21	10.8	8.7	8.7	6.5	5.4	6.5	9.7	8.6	6.5	6.6	7.7	2.2	27.5	6.6	4.4	6.6	11.0	17.6	27.4	6.6	24.0	6.5	6.5	9.8
22	10.8	17.3	5.4	7.6	11.9	12.9	10.8	7.6	3.3	1.1	5.5	7.6	7.7	12.1	12.1	13.2	18.6	15.2	20.6	18.4	15.1	18.4	15.1	11.8
23	7.5	8.6	6.4	3.2	3.2	7.5	7.5	4.3	4.3	4.3	4.3	3.2	4.3	6.5	6.5	6.5	7.6	7.5	7.5	7.5	7.5	9.6	8.5	6.4
24	7.4	6.4	2.1	2.1	3.2	3.2	5.3	6.3	4.2	2.1	4.2	6.3	5.3	6.4	9.6	8.5	4.2	1.1	1.1	4.2	6.3	4.2	2.1	0.0
25	0.0	1.0	3.1	4.2	3.1	1.0	1.0	2.1	4.2	3.2	0.0	2.1	3.2	4.3	6.5	6.5	6.5	9.7	9.7	11.8	13.9	19.1	14.9	8.5
26	5.3	8.5	10.6	10.6	10.6	6.3	5.3	8.5	7.5	7.6	10.8	6.6	2.2	3.3	4.4	6.6	9.9	11.0	10.9	7.6	6.5	8.6	10.7	9.7
27	6.4	18.2	54.6	8.6	9.6	7.5	7.5	11.8	10.8	12.0	11.0	5.5	5.5	7.7	11.1	12.2	19.9	16.5	11.0	9.8	17.4	18.4	18.4	9.7
28	10.8	11.8	18.3	11.9	11.8	10.8	9.7	11.8	11.8	11.8	18.2	23.6	15.1	15.1	20.6	11.9	11.9	19.4	14.0	17.2	22.6	23.6	8.6	8.6
Avg	7.5	8.6	10.0	8.3	8.6	6.2	8.1	12.5	21.1	8.5	7.8	7.7	8.3	12.0	10.9	9.0	9.9	10.7	14.5	11.9	12.4	12.4	13.6	14.6
Max	19.2	34.3	54.6	34.3	66.1	17.2	18.3	99.6	352.0	54.2	22.8	23.6	27.5	104.0	32.0	24.1	26.1	24.1	34.9	31.1	34.4	32.0	90.5	72.7
Min	0.0	-1.1	-1.1	-2.1	-2.1	-1.1	-1.1	-1.1	1.1	-1.1	0.0	-3.2	-4.3	-2.2	0.0	1.1	-2.2	-1.1	1.1	0.0	3.3	3.2	-1.1	0.0

SAROAD for Resolution, West_Plant
"Component, Channel: Table125, conc_PM10_μg/m³ STP"
Month: Mar 2015

Day	Hour of day																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	7.5	3.2	1.1	2.2	1.1	3.2	5.4	5.3	7.5	6.5	4.3	7.6	9.8	9.9	6.6	7.7	11.0	13.1	15.3	9.8	6.5	10.8	11.9	8.6	7.3	15.3	1.1
2	10.8	12.9	11.8	11.8	11.8	9.7	9.7	9.7	10.8	8.6	7.6	17.2	5.3	3.2	1.1	0.0	-1.1	-1.1	1.1	4.2	4.2	0.0	0.0	2.1	6.3	17.2	-1.1
3	1.1	0.0	-2.1	-3.2	0.0	2.1	3.2	1.1	1.1	4.3	3.2	2.1	1.1	-1.1	0.0	2.2	1.1	1.1	0.0	-1.1	1.1	3.2	3.2	-2.1	0.9	4.3	-3.2
4	-1.1	2.1	2.1	2.1	3.2	4.2	1.1	4.2	7.4	4.3	--	0.0	-1.1	2.2	5.4	4.3	2.2	2.2	5.3	5.3	3.2	3.2	4.2	6.3	3.1	7.4	-1.1
5	3.2	1.1	2.1	5.3	7.4	3.2	2.1	3.1	1.1	2.1	2.1	0.0	-1.1	-3.2	-4.3	-2.2	-2.2	0.0	4.3	1.1	2.1	16.0	7.5	6.4	2.4	16.0	-4.3
6	5.3	17.0	5.3	6.4	9.6	18.1	14.9	29.9	37.5	0.0	3.2	9.8	13.1	8.8	3.3	3.3	3.3	2.2	3.3	1.1	-1.1	0.0	5.4	7.6	8.6	37.5	-1.1
7	5.4	4.3	6.5	7.6	10.8	10.8	6.5	5.4	5.4	6.5	9.8	9.9	6.6	4.4	4.4	7.8	5.6	3.3	7.7	7.7	6.6	7.6	6.5	6.5	6.8	10.8	3.3
8	9.8	--	--	8.7	9.7	8.6	25.8	23.7	5.4	4.4	4.4	8.8	12.1	11.0	11.1	13.3	13.3	12.2	22.0	15.3	14.1	10.9	10.8	11.9	12.1	25.8	4.4
9	176.0	167.0	6.5	10.8	20.4	17.1	28.9	76.1	32.4	14.2	31.8	35.2	66.2	23.3	56.6	12.2	21.1	15.5	19.9	13.2	14.2	22.9	21.7	14.1	38.2	176.0	6.5
10	14.1	10.8	10.8	13.0	11.9	11.9	41.8	25.8	23.8	18.6	16.5	11.1	11.1	20.0	33.4	7.8	8.9	16.6	15.4	13.2	10.9	11.9	11.9	10.8	15.9	41.8	7.8
11	7.6	5.4	7.5	11.9	13.0	9.8	10.8	20.6	7.6	6.6	8.8	9.9	7.8	10.0	27.9	8.9	7.8	5.6	6.6	7.7	8.8	12.1	12.1	8.8	10.1	27.9	5.4
12	8.8	8.8	6.6	6.6	8.7	12.0	10.9	11.9	9.8	11.0	13.2	11.0	8.8	6.6	20.0	7.8	7.8	6.6	5.5	7.7	9.8	6.5	4.4	5.4	9.0	20.0	4.4
13	6.5	8.7	7.6	18.3	10.8	5.4	4.3	9.7	7.6	6.6	6.6	7.7	7.8	6.7	6.7	4.5	7.8	9.9	5.5	6.6	8.8	5.5	6.6	9.8	7.7	18.3	4.3
14	10.9	8.7	8.7	10.9	8.7	9.8	11.9	10.8	11.9	13.1	13.1	14.3	16.6	14.4	13.3	11.1	10.0	10.0	8.8	7.7	11.0	10.9	10.9	9.8	11.1	16.6	7.7
15	9.8	13.0	11.9	6.5	7.5	7.5	7.5	9.7	10.8	8.7	4.4	5.5	12.1	12.2	4.5	4.5	6.7	6.7	10.0	9.9	7.7	7.7	8.8	8.7	8.4	13.0	4.4
16	8.7	6.5	6.5	7.6	6.5	7.6	26.0	145.0	18.6	56.0	11.0	--	5.6	2.2	-1.1	0.0	0.0	1.1	4.5	4.5	4.4	4.4	3.3	2.2	14.4	145.0	-1.1
17	2.2	7.7	11.0	8.8	6.6	6.6	6.6	9.9	8.8	6.6	7.8	8.9	16.8	12.3	33.6	14.5	14.5	13.4	21.2	16.6	16.6	15.4	18.7	17.6	12.6	33.6	2.2
18	11.0	18.6	17.5	14.2	15.3	13.1	44.5	18.5	30.4	13.1	16.4	18.6	9.9	11.0	18.7	13.1	14.1	16.1	11.8	6.4	6.4	10.7	8.6	6.4	15.2	44.5	6.4
19	8.6	7.5	4.3	4.3	4.3	4.3	7.5	7.4	6.4	5.3	2.2	1.1	2.2	2.2	24.0	0.0	3.3	5.4	7.6	6.5	4.3	6.5	6.4	3.2	5.6	24.0	0.0
20	2.1	2.1	3.2	4.3	4.3	4.3	3.2	4.3	7.5	9.7	9.8	8.7	7.7	4.4	3.3	6.6	5.5	3.3	2.2	2.2	1.1	2.2	43.0	5.4	6.3	43.0	1.1
21	3.2	0.0	1.1	2.1	1.1	3.2	3.2	2.1	4.3	3.3	0.0	0.0	5.5	5.5	5.5	7.8	6.6	6.6	9.9	10.9	7.6	7.6	85.6	10.8	8.1	85.6	0.0
22	451.0	8.6	7.5	7.5	25.7	12.8	12.9	9.7	7.6	8.8	7.7	18.7	4.4	5.5	8.9	10.0	6.7	6.7	5.5	19.7	3.3	5.5	7.6	20.7	28.5	451.0	3.3
23	8.7	22.8	6.5	190.0	75.4	2.2	8.6	13.0	10.9	11.0	18.7	13.3	24.4	14.5	12.2	7.8	7.8	10.0	11.1	13.2	9.9	9.8	13.0	18.5	22.2	190.0	2.2
24	1.1	58.4	9.7	7.5	9.7	10.8	18.3	8.7	9.8	9.9	11.0	13.3	8.9	25.6	7.8	8.9	11.1	11.1	17.7	14.3	13.2	30.6	13.1	9.8	14.2	58.4	1.1
25	9.8	13.0	14.1	11.9	20.5	10.8	34.4	20.6	19.6	26.3	20.9	28.8	26.6	40.0	40.1	10.0	17.8	15.6	18.8	13.2	9.9	7.7	9.9	9.9	18.8	40.1	7.7
26	5.5	3.3	17.5	24.0	19.6	16.3	6.5	7.6	8.8	6.6	3.3	6.6	7.8	3.3	--	3.4	5.6	5.6	7.8	6.6	2.2	2.2	4.4	-3.3	7.4	24.0	-3.3
27	-3.3	4.4	3.3	6.6	5.4	2.2	3.3	4.4	2.2	0.0	2.2	5.6	5.6	10.1	14.7	13.6	12.4	10.1	7.8	10.0	23.1	6.6	6.6	8.7	6.9	23.1	-3.3
28	8.7	54.4	27.2	10.9	39.1	-4.3	3.3	10.9	9.9	6.7	1.1	2.2	6.7	26.0	11.3	10.2	7.9	6.8	10.1	13.4	61.9	6.6	7.7	62.5	16.7	62.5	-4.3
29	216.0	1.1	3.3	3.3	5.5	29.6	25.1	12.1	13.3	8.9	2.2	1.1	4.5	5.7	6.8	5.7	4.5	5.7	11.2	34.6	3.3	6.6	95.8	81.5	24.5	216.0	1.1
30	72.5	39.6	8.8	5.5	7.7	11.0	11.0	13.2	14.4	11.2	11.2	15.8	11.3	33.9	46.5	13.6	11.3	11.3	21.3	28.0	13.4	13.3	12.2	13.2	18.8	72.5	5.5
31	26.4	17.6	9.9	6.6	48.2	19.7	14.3	22.0	14.4	14.5	13.4	21.4	27.0	34.9	18.1	15.8	21.5	16.9	24.7	5.6	8.9	13.3	26.6	23.2	19.4	48.2	5.6
Avg	35.7	17.6	7.9	14.0	13.9	9.1	13.3	17.9	11.8	10.1	8.9	10.5	11.3	11.8	14.7	7.6	8.2	8.1	10.4	10.2	9.6	9.0	15.8	13.1	12.5	--	--
Max	451.0	167.0	27.2	190.0	75.4	29.6	44.5	145.0	37.5	56.0	31.8	35.2	66.2	40.0	56.6	15.8	21.5	16.9	24.7	34.6	61.9	30.6	95.8	81.5	--	451.0	--
Min	-3.3	0.0	-2.1	-3.2	0.0	-4.3	1.1	1.1	1.1	0.0	0.0	0.0	-1.1	-3.2	-4.3	-2.2	-2.2	-1.1	0.0	-1.1	-1.1	0.0	0.0	-3.3	--	--	-4.3

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table126, conc PM_{2.5} µg/m³ Actual"
Month: Jan 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.0	-1.0	-2.0	-2.0	1.0	4.0	4.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	3.0	5.0	2.0	3.0	4.0	4.0	6.0	6.0	6.0	3.0	2.7	6.0	-2.0
2	1.0	1.0	2.0	3.0	3.0	1.0	1.0	3.0	3.0	2.0	0.0	1.0	1.0	1.0	2.0	3.0	7.0	7.0	6.0	8.0	7.0	6.0	6.0	6.0	3.4	8.0	0.0
3	9.0	8.0	6.0	5.0	3.0	4.0	7.0	8.0	7.0	6.0	3.0	2.0	3.0	3.0	2.0	4.0	4.0	4.0	5.0	6.0	4.0	4.0	5.0	5.0	4.9	9.0	2.0
4	7.0	6.0	3.0	4.0	5.0	2.0	1.0	3.0	3.0	2.0	2.0	2.0	1.0	1.0	0.0	-2.0	0.0	3.0	2.0	2.0	1.0	2.0	4.0	4.0	2.4	7.0	-2.0
5	3.0	2.0	1.0	0.0	-1.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	1.0	2.0	2.0	1.0	1.0	0.0	-1.0	-1.0	1.0	2.0	2.0	1.0	1.1	3.0	-1.0
6	0.0	1.0	3.0	1.0	1.0	1.0	-1.0	0.0	3.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0	-1.0	-3.0	-2.0	1.0	2.0	2.0	2.0	0.6	3.0	-3.0
7	2.0	1.0	0.0	-2.0	-1.0	4.0	3.0	2.0	5.0	5.0	6.0	6.0	3.0	2.0	2.0	2.0	3.0	3.0	0.0	-2.0	-1.0	0.0	1.0	4.0	2.0	6.0	-2.0
8	6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	7.0	7.0	6.0	4.0	4.0	5.0	5.0	6.0	6.0	3.0	3.0	4.0	5.0	5.0	3.0	5.3	7.0	3.0
9	2.0	6.0	5.0	3.0	4.0	2.0	2.0	2.0	2.0	5.0	4.0	3.0	4.0	3.0	4.0	5.0	4.0	2.0	1.0	3.0	6.0	4.0	4.0	5.0	3.5	6.0	1.0
10	7.0	7.0	6.0	5.0	5.0	6.0	7.0	5.0	6.0	7.0	5.0	3.0	1.0	1.0	2.0	3.0	4.0	2.0	2.0	3.0	1.0	1.0	3.0	4.0	4.0	7.0	1.0
11	2.0	1.0	2.0	2.0	1.0	1.0	3.0	3.0	3.0	5.0	5.0	3.0	2.0	0.0	1.0	2.0	4.0	3.0	3.0	4.0	4.0	4.0	3.0	2.0	2.6	5.0	0.0
12	2.0	4.0	4.0	4.0	6.0	7.0	6.0	2.0	1.0	4.0	4.0	4.0	3.0	3.0	4.0	7.0	8.0	6.0	7.0	6.0	3.0	3.0	2.0	4.0	4.3	8.0	1.0
13	6.0	4.0	2.0	4.0	3.0	2.0	5.0	4.0	4.0	5.0	2.0	1.0	1.0	2.0	1.0	-2.0	-1.0	1.0	1.0	0.0	0.0	1.0	2.0	4.0	2.2	6.0	-2.0
14	3.0	2.0	3.0	3.0	3.0	2.0	1.0	2.0	3.0	3.0	2.0	4.0	5.0	4.0	1.0	-1.0	-1.0	0.0	0.0	0.0	2.0	3.0	1.0	2.0	2.0	5.0	-1.0
15	3.0	0.0	0.0	1.0	4.0	2.0	0.0	1.0	2.0	2.0	1.0	0.0	1.0	0.0	-2.0	-1.0	0.0	2.0	0.0	-2.0	-1.0	1.0	1.0	1.0	0.7	4.0	-2.0
16	1.0	1.0	0.0	0.0	2.0	3.0	2.0	2.0	1.0	0.0	-1.0	0.0	1.0	1.0	0.0	0.0	2.0	2.0	2.0	1.0	1.0	-1.0	1.0	2.0	1.0	3.0	-1.0
17	1.0	2.0	0.0	-2.0	-1.0	0.0	2.0	4.0	3.0	3.0	3.0	0.0	-2.0	-2.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	2.0	0.0	-3.0	0.6	4.0	-3.0
18	-1.0	0.0	0.0	0.0	-1.0	1.0	3.0	2.0	2.0	2.0	2.0	2.0	1.0	-1.0	1.0	4.0	4.0	2.0	3.0	2.0	0.0	2.0	3.0	3.0	1.5	4.0	-1.0
19	1.0	2.0	1.0	-1.0	0.0	0.0	1.0	2.0	3.0	0.0	-1.0	0.0	1.0	-1.0	0.0	2.0	3.0	3.0	1.0	1.0	0.0	1.0	4.0	1.0	1.0	4.0	-1.0
20	1.0	2.0	1.0	0.0	-1.0	3.0	3.0	2.0	2.0	2.0	2.0	1.0	-1.0	-1.0	-1.0	0.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	2.0	1.5	3.0	-1.0
21	1.0	1.0	2.0	1.0	1.0	1.0	2.0	2.0	1.0	1.0	1.0	2.0	5.0	8.0	12.0	12.0	11.0	8.0	2.0	1.0	1.0	2.0	2.0	-1.0	3.3	12.0	-1.0
22	-2.0	-2.0	0.0	3.0	2.0	0.0	0.0	-1.0	16.0	6.0	7.0	5.0	1.0	0.0	-1.0	0.0	-2.0	-3.0	0.0	2.0	2.0	3.0	3.0	2.0	1.7	16.0	-3.0
23	2.0	1.0	2.0	1.0	1.0	1.0	-1.0	0.0	3.0	1.0	-1.0	0.0	0.0	1.0	2.0	-1.0	-2.0	0.0	1.0	2.0	-1.0	-2.0	0.0	0.0	0.4	3.0	-2.0
24	6.0	6.0	4.0	9.0	7.0	2.0	5.0	10.0	8.0	41.0	28.0	16.0	10.0	11.0	9.0	6.0	3.0	-1.0	3.0	2.0	1.0	5.0	4.0	1.0	8.2	41.0	-1.0
25	-1.0	-1.0	1.0	0.0	2.0	2.0	-1.0	-1.0	2.0	1.0	0.0	2.0	1.0	-2.0	-3.0	-1.0	0.0	0.0	1.0	0.0	-1.0	1.0	1.0	0.0	0.1	2.0	-3.0
26	1.0	0.0	-1.0	0.0	0.0	1.0	2.0	3.0	4.0	2.0	2.0	1.0	0.0	20.0	3.0	4.0	3.0	1.0	2.0	3.0	0.0	0.0	3.0	5.0	2.5	20.0	-1.0
27	2.0	0.0	1.0	2.0	2.0	1.0	0.0	2.0	2.0	1.0	3.0	--	--	--	6.0	5.0	0.0	1.0	4.0	4.0	4.0	2.0	1.0	2.0	2.1	6.0	0.0
28	1.0	1.0	3.0	1.0	1.0	3.0	-1.0	-2.0	2.0	4.0	3.0	2.0	3.0	1.0	3.0	4.0	2.0	1.0	2.0	0.0	0.0	2.0	3.0	2.0	1.7	4.0	-2.0
29	2.0	1.0	-2.0	0.0	3.0	2.0	2.0	3.0	1.0	1.0	2.0	2.0	3.0	3.0	2.0	1.0	1.0	2.0	1.0	1.0	0.0	-1.0	0.0	1.0	1.3	3.0	-2.0
30	1.0	1.0	3.0	5.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	0.0	1.0	1.0	0.0	-2.0	0.0	0.0	0.0	0.0	-1.0	0.0	-1.0	0.0	0.8	5.0	-2.0
31	1.0	1.0	2.0	1.0	-2.0	0.0	1.0	1.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	1.0	2.0	1.0	0.0	1.0	3.0	1.2	3.0	-2.0
Avg	2.3	2.1	1.9	1.8	2.0	2.1	2.2	2.5	3.4	4.1	3.2	2.5	1.9	2.3	2.0	2.2	2.4	2.0	1.8	1.8	1.6	2.0	2.4	2.3	2.3	--	--
Max	9.0	8.0	6.0	9.0	7.0	7.0	7.0	10.0	16.0	41.0	28.0	16.0	10.0	20.0	12.0	12.0	11.0	8.0	7.0	8.0	7.0	6.0	6.0	6.0	--	41.0	--
Min	-2.0	-2.0	-2.0	-2.0	-2.0	0.0	-1.0	-2.0	1.0	0.0	-1.0	0.0	-2.0	-2.0	-3.0	-2.0	-2.0	-3.0	-3.0	-2.0	-1.0	-2.0	-1.0	-3.0	--	--	-3.0

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table126, conc PM_{2.5} µg/m³ Actual"
Month: Feb 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	1.0	-1.0	2.0	2.0	1.0	1.0	4.0	3.0	1.0	0.0	0.0	0.0	0.0	1.0	3.0	3.0	3.0	4.0	5.0	4.0	3.0	2.0	-1.0	1.0	1.8	5.0	-1.0
2	2.0	1.0	2.0	0.0	0.0	3.0	5.0	4.0	3.0	0.0	-1.0	2.0	2.0	-1.0	-2.0	0.0	3.0	3.0	4.0	4.0	3.0	2.0	2.0	4.0	1.9	5.0	-2.0
3	4.0	2.0	1.0	1.0	3.0	4.0	4.0	2.0	2.0	4.0	4.0	2.0	0.0	0.0	4.0	5.0	4.0	4.0	4.0	3.0	2.0	2.0	1.0	1.0	2.6	5.0	0.0
4	3.0	4.0	4.0	8.0	10.0	8.0	7.0	6.0	5.0	5.0	5.0	6.0	9.0	10.0	8.0	6.0	7.0	7.0	6.0	6.0	6.0	7.0	6.0	3.0	6.3	10.0	3.0
5	1.0	2.0	3.0	3.0	5.0	4.0	0.0	2.0	0.0	-3.0	0.0	-1.0	0.0	1.0	0.0	0.0	1.0	2.0	0.0	0.0	2.0	2.0	0.0	1.0	1.0	5.0	-3.0
6	3.0	3.0	1.0	2.0	1.0	1.0	1.0	0.0	3.0	1.0	1.0	1.0	-2.0	-2.0	0.0	3.0	3.0	1.0	3.0	2.0	-1.0	-1.0	-1.0	0.0	1.0	3.0	-2.0
7	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	3.0	2.0	1.0	1.0	1.0	3.0	4.0	2.0	1.0	1.0	3.0	4.0	4.0	4.0	2.0	3.0	1.9	4.0	0.0
8	1.0	2.0	3.0	1.0	1.0	3.0	4.0	3.0	3.0	3.0	3.0	2.0	1.0	2.0	2.0	2.0	3.0	3.0	3.0	4.0	4.0	3.0	1.0	3.0	2.5	4.0	1.0
9	3.0	2.0	3.0	2.0	0.0	0.0	2.0	3.0	2.0	1.0	0.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.0	5.0	4.0	2.0	0.0	-2.0	2.1	5.0	-2.0
10	-2.0	-3.0	-2.0	0.0	3.0	3.0	2.0	4.0	1.0	1.0	2.0	0.0	2.0	4.0	4.0	4.0	4.0	5.0	6.0	5.0	5.0	6.0	6.0	4.0	2.7	6.0	-3.0
11	5.0	3.0	2.0	5.0	3.0	0.0	-2.0	0.0	2.0	2.0	2.0	1.0	0.0	0.0	0.0	3.0	2.0	-1.0	1.0	1.0	1.0	2.0	2.0	1.0	1.5	5.0	-2.0
12	0.0	1.0	0.0	1.0	4.0	1.0	1.0	1.0	-1.0	-1.0	0.0	2.0	1.0	0.0	1.0	0.0	-1.0	1.0	0.0	1.0	2.0	2.0	1.0	1.0	0.8	4.0	-1.0
13	3.0	3.0	0.0	-1.0	2.0	3.0	3.0	5.0	4.0	1.0	0.0	0.0	1.0	2.0	1.0	1.0	1.0	0.0	2.0	3.0	4.0	3.0	2.0	1.0	1.8	5.0	-1.0
14	2.0	2.0	-1.0	2.0	2.0	1.0	5.0	4.0	3.0	6.0	6.0	5.0	4.0	1.0	2.0	2.0	2.0	3.0	3.0	3.0	4.0	5.0	4.0	3.0	3.0	6.0	-1.0
15	3.0	5.0	6.0	6.0	5.0	4.0	4.0	5.0	6.0	4.0	4.0	3.0	2.0	3.0	6.0	5.0	3.0	2.0	4.0	5.0	7.0	7.0	4.0	5.0	4.5	7.0	2.0
16	8.0	6.0	2.0	5.0	6.0	3.0	3.0	3.0	4.0	6.0	5.0	6.0	4.0	1.0	2.0	4.0	3.0	4.0	5.0	4.0	5.0	6.0	4.0	3.0	4.3	8.0	1.0
17	3.0	4.0	4.0	1.0	1.0	3.0	1.0	0.0	1.0	2.0	1.0	-1.0	-1.0	1.0	1.0	1.0	2.0	2.0	0.0	1.0	4.0	5.0	3.0	1.0	1.7	5.0	-1.0
18	1.0	2.0	1.0	0.0	1.0	0.0	-1.0	1.0	3.0	2.0	3.0	3.0	2.0	1.0	0.0	3.0	5.0	6.0	5.0	5.0	4.0	4.0	6.0	5.0	2.6	6.0	-1.0
19	3.0	2.0	1.0	0.0	2.0	2.0	0.0	3.0	3.0	3.0	1.0	4.0	7.0	3.0	4.0	4.0	3.0	4.0	5.0	6.0	6.0	2.0	2.0	1.0	3.0	7.0	0.0
20	-1.0	1.0	4.0	2.0	3.0	4.0	6.0	6.0	4.0	3.0	5.0	3.0	3.0	4.0	1.0	2.0	4.0	4.0	4.0	3.0	3.0	4.0	3.0	2.0	3.2	6.0	-1.0
21	2.0	2.0	4.0	3.0	1.0	1.0	0.0	2.0	4.0	1.0	2.0	2.0	-1.0	-1.0	0.0	1.0	-1.0	1.0	2.0	-1.0	0.0	1.0	0.0	1.0	1.1	4.0	-1.0
22	3.0	1.0	2.0	4.0	3.0	3.0	4.0	2.0	2.0	2.0	3.0	4.0	2.0	3.0	5.0	4.0	3.0	3.0	6.0	5.0	4.0	6.0	6.0	5.0	3.5	6.0	1.0
23	3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0	4.0	2.0	1.0	1.0	3.0	4.0	1.0	1.0	3.0	2.0	0.0	1.0	3.0	3.0	2.0	2.0	2.4	4.0	0.0
24	3.0	4.0	3.0	2.0	1.0	2.0	3.0	2.0	2.0	1.0	0.0	3.0	3.0	3.0	3.0	1.0	0.0	0.0	0.0	3.0	5.0	2.0	1.0	1.0	2.0	5.0	0.0
25	0.0	1.0	1.0	-2.0	-1.0	2.0	2.0	2.0	2.0	1.0	1.0	0.0	0.0	1.0	1.0	1.0	2.0	5.0	5.0	6.0	8.0	7.0	4.0	2.0	2.1	8.0	-2.0
26	3.0	2.0	-1.0	1.0	2.0	1.0	1.0	2.0	5.0	5.0	6.0	5.0	2.0	1.0	2.0	2.0	0.0	0.0	2.0	1.0	2.0	1.0	1.0	1.0	2.0	6.0	-1.0
27	2.0	3.0	1.0	1.0	3.0	3.0	2.0	4.0	2.0	0.0	1.0	1.0	2.0	2.0	1.0	3.0	4.0	3.0	0.0	2.0	6.0	5.0	5.0	4.0	2.5	6.0	0.0
28	5.0	7.0	6.0	6.0	4.0	4.0	6.0	6.0	5.0	5.0	4.0	5.0	6.0	5.0	5.0	4.0	4.0	3.0	3.0	2.0	--	--	--	--	4.8	7.0	2.0
Avg	2.3	2.3	1.9	2.1	2.5	2.5	2.5	2.9	2.8	2.1	2.1	2.2	2.0	1.9	2.2	2.5	2.6	2.7	3.1	3.1	3.7	3.5	2.4	2.1	2.5	--	--
Max	8.0	7.0	6.0	8.0	10.0	8.0	7.0	6.0	6.0	6.0	6.0	6.0	9.0	10.0	8.0	6.0	7.0	7.0	6.0	6.0	8.0	7.0	6.0	5.0	--	10.0	--
Min	-2.0	-3.0	-2.0	-2.0	-1.0	0.0	-2.0	0.0	-1.0	-3.0	-1.0	-1.0	-2.0	-2.0	-2.0	0.0	-1.0	-1.0	0.0	-1.0	-1.0	-1.0	-2.0	--	--	--	-3.0

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: Table126, conc PM_{2.5} µg/m³ Actual"
Month: Mar 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	5.0	2.0	-1.0	1.0	2.0	5.0	4.0	2.0	1.0	--	5.0	-1.0
3	1.0	3.0	5.0	3.0	1.0	0.0	-1.0	0.0	0.0	2.0	4.0	3.0	2.0	-1.0	-2.0	0.0	0.0	-2.0	-3.0	0.0	3.0	3.0	2.0	1.0	1.0	5.0	-3.0
4	2.0	2.0	1.0	2.0	5.0	3.0	1.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	--	2.0	3.0	1.0	1.0	4.0	4.0	1.0	1.0	1.0	2.3	5.0	1.0
5	-2.0	0.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0	0.0	-2.0	-2.0	1.0	1.0	-3.0	-2.0	2.0	4.0	4.0	3.0	2.0	1.0	0.0	0.0	0.8	4.0	-3.0
6	-1.0	0.0	3.0	4.0	3.0	3.0	1.0	1.0	3.0	3.0	4.0	4.0	5.0	4.0	1.0	1.0	0.0	-2.0	0.0	4.0	2.0	1.0	2.0	2.0	2.0	5.0	-2.0
7	1.0	-1.0	-1.0	-1.0	2.0	3.0	1.0	2.0	2.0	0.0	-1.0	2.0	3.0	1.0	-1.0	0.0	1.0	1.0	1.0	0.0	0.0	2.0	2.0	2.0	0.9	3.0	-1.0
8	5.0	--	3.0	0.0	1.0	2.0	2.0	2.0	2.0	1.0	1.0	4.0	6.0	6.0	6.0	3.0	2.0	3.0	1.0	2.0	3.0	3.0	5.0	4.0	2.9	6.0	0.0
9	3.0	4.0	3.0	2.0	1.0	3.0	3.0	2.0	2.0	3.0	3.0	4.0	5.0	5.0	5.0	4.0	3.0	4.0	5.0	5.0	4.0	6.0	5.0	3.0	3.6	6.0	1.0
10	4.0	2.0	3.0	7.0	4.0	2.0	4.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	0.0	-3.0	0.0	0.0	1.0	2.0	2.0	3.0	1.0	2.0	3.0	7.0	-3.0
11	3.0	1.0	1.0	1.0	1.0	0.0	3.0	5.0	3.0	2.0	0.0	-2.0	-2.0	-1.0	3.0	3.0	2.0	2.0	3.0	5.0	6.0	4.0	1.0	1.0	1.9	6.0	-2.0
12	4.0	5.0	3.0	3.0	6.0	2.0	0.0	1.0	3.0	2.0	0.0	2.0	1.0	3.0	5.0	4.0	3.0	1.0	0.0	2.0	3.0	1.0	0.0	2.0	2.3	6.0	0.0
13	3.0	2.0	2.0	1.0	2.0	1.0	2.0	4.0	3.0	6.0	4.0	0.0	1.0	0.0	-1.0	2.0	5.0	4.0	2.0	1.0	1.0	1.0	3.0	1.0	2.1	6.0	-1.0
14	3.0	5.0	4.0	4.0	4.0	3.0	3.0	0.0	0.0	3.0	4.0	6.0	2.0	0.0	3.0	4.0	5.0	3.0	4.0	4.0	1.0	1.0	2.0	1.0	2.9	6.0	0.0
15	1.0	2.0	1.0	0.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	4.0	6.0	3.0	1.0	2.0	1.0	0.0	2.0	4.0	3.0	3.0	2.0	2.0	2.2	6.0	0.0
16	3.0	3.0	4.0	2.0	3.0	4.0	2.0	0.0	2.0	2.0	3.0	4.0	3.0	3.0	4.0	3.0	0.0	-1.0	0.0	1.0	1.0	2.0	4.0	2.0	2.3	4.0	-1.0
17	1.0	3.0	3.0	2.0	3.0	3.0	6.0	7.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.2	7.0	1.0
18	4.0	5.0	4.0	4.0	5.0	4.0	5.0	3.0	1.0	3.0	3.0	4.0	5.0	4.0	3.0	2.0	3.0	4.0	5.0	4.0	2.0	2.0	1.0	3.0	3.5	5.0	1.0
19	4.0	4.0	5.0	5.0	6.0	3.0	0.0	-2.0	-1.0	1.0	6.0	6.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	4.0	6.0	6.0	3.0	2.0	3.5	6.0	-2.0
20	2.0	6.0	5.0	3.0	5.0	2.0	0.0	3.0	2.0	1.0	0.0	0.0	4.0	3.0	1.0	3.0	5.0	6.0	3.0	3.0	4.0	4.0	4.0	3.0	3.0	6.0	0.0
21	3.0	2.0	3.0	4.0	3.0	3.0	3.0	1.0	0.0	2.0	4.0	3.0	0.0	1.0	2.0	1.0	2.0	1.0	2.0	3.0	3.0	3.0	1.0	1.0	2.1	4.0	0.0
22	3.0	2.0	2.0	5.0	3.0	3.0	4.0	1.0	3.0	5.0	2.0	2.0	--	--	4.0	2.0	2.0	3.0	4.0	3.0	3.0	2.0	1.0	1.0	2.7	5.0	1.0
23	1.0	0.0	1.0	1.0	2.0	4.0	4.0	4.0	2.0	2.0	2.0	4.0	2.0	-1.0	1.0	2.0	0.0	0.0	2.0	4.0	5.0	2.0	1.0	1.0	1.9	5.0	-1.0
24	1.0	1.0	2.0	1.0	0.0	3.0	3.0	4.0	6.0	4.0	3.0	4.0	2.0	0.0	-1.0	-2.0	0.0	2.0	1.0	4.0	5.0	2.0	5.0	5.0	2.3	6.0	-2.0
25	3.0	5.0	3.0	4.0	4.0	3.0	4.0	4.0	6.0	6.0	6.0	6.0	5.0	3.0	2.0	2.0	2.0	4.0	4.0	4.0	6.0	2.0	0.0	1.0	3.7	6.0	0.0
26	1.0	3.0	2.0	3.0	4.0	1.0	2.0	4.0	3.0	1.0	0.0	4.0	4.0	1.0	-1.0	-1.0	1.0	0.0	1.0	0.0	-2.0	0.0	2.0	-1.0	1.3	4.0	-2.0
27	-2.0	-1.0	-1.0	1.0	1.0	0.0	-1.0	0.0	0.0	1.0	2.0	2.0	1.0	-1.0	-2.0	-1.0	0.0	1.0	0.0	2.0	3.0	2.0	2.0	1.0	0.4	3.0	-2.0
28	1.0	-1.0	-2.0	0.0	2.0	1.0	1.0	3.0	1.0	-1.0	0.0	3.0	2.0	1.0	2.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0	4.0	2.0	1.4	4.0	-2.0
29	1.0	2.0	3.0	4.0	1.0	2.0	5.0	3.0	4.0	3.0	0.0	3.0	3.0	1.0	-1.0	-1.0	2.0	3.0	2.0	1.0	1.0	2.0	3.0	1.0	2.0	5.0	-1.0
30	1.0	3.0	1.0	1.0	3.0	2.0	2.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	3.0	4.0	4.0	3.0	1.0	2.0	4.0	4.0	4.0	5.0	3.0	5.0	1.0
31	5.0	4.0	2.0	2.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0	5.0	4.0	3.0	4.0	5.0	4.0	4.0	5.0	6.0	6.0	3.0	4.1	6.0	2.0
Avg	2.0	2.4	2.3	2.4	2.8	2.3	2.3	2.5	2.5	2.6	2.4	3.1	3.0	2.1	1.7	1.8	2.1	2.0	2.1	2.8	3.1	2.7	2.4	1.9	2.4	--	--
Max	5.0	6.0	5.0	7.0	6.0	4.0	6.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0	6.0	6.0	5.0	--	7.0	--
Min	-2.0	-1.0	-2.0	-1.0	0.0	0.0	-1.0	-2.0	-1.0	-1.0	-2.0	-2.0	-2.0	-1.0	-3.0	-3.0	0.0	-2.0	-3.0	0.0	-2.0	0.0	0.0	-1.0	--	--	-3.0

-- Indicates Invalid Data

SAROAD for Resolution, West_Plant
"Component, Channel: Table126, conc PM25 _µg/m³ Actual"
Month: Jan 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	5.0	5.0	7.0	6.0	5.0	5.0	7.0	9.0	9.0	7.0	6.0	5.0	3.0	5.0	5.0	4.0	3.0	6.0	7.0	5.0	9.0	9.0	4.0	3.0	5.8	9.0	3.0
2	5.0	4.0	2.0	1.0	2.0	3.0	3.0	2.0	1.0	2.0	0.0	0.0	6.0	6.0	2.0	4.0	6.0	9.0	11.0	10.0	17.0	11.0	13.0	13.0	5.5	17.0	0.0
3	12.0	13.0	14.0	12.0	8.0	6.0	10.0	11.0	8.0	8.0	4.0	3.0	4.0	5.0	6.0	4.0	3.0	5.0	9.0	7.0	7.0	8.0	6.0	7.0	7.5	14.0	3.0
4	7.0	4.0	5.0	7.0	4.0	5.0	7.0	7.0	5.0	3.0	2.0	1.0	-1.0	0.0	3.0	2.0	1.0	2.0	4.0	3.0	3.0	3.0	1.0	3.0	3.4	7.0	-1.0
5	4.0	1.0	1.0	2.0	1.0	2.0	4.0	3.0	1.0	1.0	0.0	0.0	-4.0	-2.0	3.0	1.0	0.0	2.0	4.0	2.0	0.0	2.0	1.0	1.0	1.3	4.0	-4.0
6	3.0	2.0	2.0	0.0	2.0	4.0	3.0	2.0	3.0	2.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	2.0	3.0	2.0	1.0	-1.0	1.5	4.0	-1.0
7	3.0	5.0	2.0	2.0	2.0	2.0	0.0	1.0	3.0	3.0	4.0	3.0	2.0	1.0	-2.0	-1.0	0.0	1.0	1.0	-1.0	1.0	2.0	-1.0	4.0	1.5	5.0	-2.0
8	9.0	8.0	6.0	6.0	6.0	7.0	7.0	5.0	6.0	8.0	6.0	6.0	7.0	--	--	6.0	4.0	4.0	5.0	7.0	8.0	10.0	9.0	7.0	6.7	10.0	4.0
9	7.0	6.0	6.0	6.0	6.0	7.0	6.0	6.0	8.0	5.0	3.0	5.0	6.0	6.0	4.0	4.0	3.0	3.0	4.0	4.0	4.0	5.0	6.0	6.0	5.3	8.0	3.0
10	6.0	6.0	6.0	4.0	1.0	5.0	6.0	6.0	5.0	5.0	4.0	2.0	3.0	3.0	4.0	6.0	5.0	5.0	6.0	7.0	5.0	3.0	4.0	5.0	4.7	7.0	1.0
11	4.0	4.0	5.0	3.0	2.0	3.0	4.0	4.0	4.0	3.0	2.0	2.0	0.0	1.0	3.0	3.0	3.0	5.0	7.0	6.0	9.0	11.0	6.0	5.0	4.1	11.0	0.0
12	3.0	2.0	5.0	6.0	4.0	4.0	6.0	7.0	7.0	7.0	5.0	4.0	8.0	6.0	4.0	5.0	5.0	8.0	9.0	5.0	2.0	5.0	6.0	6.0	5.4	9.0	2.0
13	7.0	6.0	6.0	4.0	3.0	3.0	6.0	8.0	6.0	5.0	5.0	5.0	7.0	11.0	8.0	2.0	0.0	0.0	4.0	6.0	4.0	3.0	3.0	3.0	4.8	11.0	0.0
14	5.0	4.0	3.0	3.0	3.0	5.0	5.0	4.0	7.0	4.0	-1.0	2.0	3.0	1.0	4.0	4.0	3.0	4.0	7.0	5.0	0.0	0.0	0.0	2.0	3.2	7.0	-1.0
15	2.0	2.0	3.0	3.0	1.0	4.0	7.0	5.0	4.0	1.0	-1.0	1.0	2.0	3.0	4.0	-2.0	-2.0	1.0	2.0	4.0	3.0	2.0	3.0	1.0	2.2	7.0	-2.0
16	2.0	2.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	1.0	1.0	-1.0	0.0	0.0	1.0	3.0	0.0	0.0	2.0	4.0	6.0	5.0	3.0	2.0	2.0	6.0	-1.0
17	2.0	3.0	3.0	4.0	4.0	4.0	4.0	5.0	6.0	2.0	-2.0	-2.0	1.0	1.0	0.0	-1.0	-1.0	3.0	6.0	6.0	5.0	3.0	-1.0	1.0	2.3	6.0	-2.0
18	4.0	4.0	3.0	4.0	5.0	4.0	2.0	2.0	3.0	4.0	3.0	2.0	-1.0	-3.0	-1.0	1.0	2.0	3.0	4.0	5.0	5.0	7.0	6.0	2.0	2.9	7.0	-3.0
19	3.0	4.0	3.0	3.0	3.0	3.0	3.0	1.0	1.0	0.0	1.0	0.0	-2.0	-4.0	-2.0	0.0	1.0	4.0	3.0	3.0	6.0	6.0	4.0	4.0	2.0	6.0	-4.0
20	3.0	3.0	4.0	3.0	2.0	2.0	3.0	2.0	0.0	2.0	1.0	-1.0	-1.0	-3.0	0.0	2.0	1.0	1.0	1.0	4.0	5.0	3.0	3.0	4.0	1.8	5.0	-3.0
21	3.0	1.0	0.0	1.0	2.0	3.0	4.0	4.0	4.0	2.0	2.0	4.0	5.0	8.0	11.0	17.0	11.0	7.0	3.0	3.0	3.0	2.0	2.0	2.0	4.3	17.0	0.0
22	3.0	4.0	4.0	6.0	6.0	2.0	2.0	4.0	4.0	2.0	4.0	2.0	-3.0	0.0	4.0	3.0	0.0	2.0	5.0	4.0	4.0	5.0	5.0	4.0	3.2	6.0	-3.0
23	1.0	2.0	1.0	1.0	3.0	4.0	4.0	4.0	4.0	3.0	0.0	-1.0	1.0	4.0	2.0	-2.0	0.0	2.0	4.0	5.0	6.0	5.0	-1.0	-2.0	2.1	6.0	-2.0
24	2.0	4.0	2.0	1.0	4.0	2.0	2.0	5.0	2.0	0.0	2.0	3.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0	2.0	3.0	3.0	4.0	2.0	5.0	0.0
25	3.0	2.0	5.0	3.0	2.0	1.0	1.0	2.0	1.0	0.0	-2.0	-2.0	0.0	-1.0	-1.0	1.0	0.0	0.0	3.0	1.0	-1.0	0.0	2.0	4.0	1.0	5.0	-2.0
26	1.0	1.0	0.0	-1.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	0.0	0.0	3.0	4.0	1.0	3.0	5.0	--	--	4.0	4.0	4.0	2.0	1.8	5.0	-1.0
27	1.0	1.0	1.0	1.0	-1.0	1.0	4.0	2.0	3.0	1.0	2.0	2.0	0.0	-1.0	-1.0	-1.0	2.0	4.0	3.0	5.0	4.0	3.0	6.0	4.0	1.9	6.0	-1.0
28	1.0	1.0	-1.0	0.0	5.0	3.0	0.0	0.0	-1.0	-2.0	-1.0	0.0	2.0	2.0	3.0	3.0	0.0	2.0	4.0	4.0	3.0	2.0	3.0	2.0	1.5	5.0	-2.0
29	3.0	4.0	2.0	1.0	3.0	2.0	2.0	2.0	2.0	3.0	4.0	1.0	0.0	1.0	1.0	2.0	3.0	3.0	3.0	5.0	6.0	2.0	1.0	3.0	2.5	6.0	0.0
30	2.0	2.0	5.0	5.0	5.0	1.0	-1.0	2.0	3.0	-1.0	0.0	1.0	3.0	4.0	1.0	1.0	0.0	0.0	2.0	2.0	1.0	0.0	1.0	2.0	1.7	5.0	-1.0
31	1.0	0.0	0.0	2.0	6.0	5.0	2.0	2.0	3.0	1.0	1.0	1.0	-1.0	1.0	2.0	0.0	1.0	3.0	2.0	6.0	6.0	4.0	4.0	6.0	2.4	6.0	-1.0
Avg	3.8	3.6	3.5	3.3	3.2	3.4	3.7	3.9	3.8	2.7	1.8	1.6	1.7	2.0	2.4	2.3	1.9	3.1	4.2	4.4	4.5	4.2	3.5	3.5	3.2	--	--
Max	12.0	13.0	14.0	12.0	8.0	7.0	10.0	11.0	9.0	8.0	6.0	6.0	8.0	11.0	11.0	17.0	11.0	9.0	11.0	10.0	17.0	11.0	13.0	13.0	--	17.0	--
Min	1.0	0.0	-1.0	-1.0	-1.0	1.0	-1.0	0.0	-1.0	-2.0	-2.0	-2.0	-4.0	-4.0	-2.0	-2.0	-2.0	0.0	1.0	-1.0	-1.0	0.0	-1.0	-2.0	--	--	-4.0

-- Indicates Invalid Data

SAROAD for Resolution, West_Plant
"Component, Channel: Table126, conc PM25_μg/m³ Actual"
Month: Feb 2015

Day	Hour of day																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	8.0	8.0	6.0	5.0	3.0	4.0	7.0	6.0	4.0	2.0	2.0	1.0	-1.0	2.0	2.0	0.0	3.0	5.0	6.0	9.0	8.0	6.0	6.0	5.0	4.5	9.0	-1.0
2	3.0	3.0	4.0	5.0	5.0	6.0	6.0	3.0	2.0	1.0	0.0	2.0	1.0	-1.0	0.0	1.0	0.0	2.0	4.0	5.0	7.0	8.0	6.0	6.0	3.3	8.0	-1.0
3	5.0	5.0	3.0	1.0	4.0	4.0	2.0	4.0	2.0	1.0	3.0	4.0	2.0	3.0	5.0	4.0	5.0	4.0	3.0	7.0	7.0	4.0	5.0	8.0	4.0	8.0	1.0
4	8.0	7.0	7.0	4.0	6.0	8.0	11.0	15.0	11.0	6.0	9.0	10.0	7.0	6.0	6.0	6.0	6.0	8.0	10.0	11.0	11.0	11.0	10.0	10.0	8.5	15.0	4.0
5	9.0	6.0	3.0	4.0	5.0	4.0	2.0	1.0	--	3.0	2.0	-3.0	-3.0	-2.0	0.0	0.0	-1.0	-1.0	0.0	0.0	0.0	3.0	4.0	2.0	1.7	9.0	-3.0
6	1.0	2.0	1.0	2.0	4.0	2.0	2.0	3.0	1.0	2.0	3.0	0.0	-3.0	-3.0	-3.0	-3.0	2.0	4.0	2.0	0.0	1.0	3.0	4.0	5.0	1.3	5.0	-3.0
7	4.0	4.0	4.0	3.0	2.0	2.0	3.0	4.0	5.0	3.0	1.0	2.0	0.0	1.0	3.0	3.0	3.0	4.0	6.0	6.0	7.0	5.0	5.0	6.0	3.6	7.0	0.0
8	6.0	9.0	7.0	7.0	8.0	6.0	4.0	5.0	5.0	4.0	5.0	2.0	0.0	3.0	1.0	1.0	3.0	5.0	6.0	6.0	6.0	6.0	5.0	5.0	4.8	9.0	0.0
9	3.0	4.0	5.0	4.0	4.0	4.0	4.0	3.0	3.0	2.0	1.0	-1.0	0.0	1.0	1.0	5.0	7.0	6.0	6.0	6.0	7.0	8.0	8.0	7.0	4.1	8.0	-1.0
10	5.0	5.0	4.0	4.0	4.0	3.0	2.0	2.0	1.0	0.0	-1.0	-1.0	3.0	5.0	3.0	2.0	3.0	4.0	5.0	5.0	5.0	6.0	6.0	8.0	3.5	8.0	-1.0
11	9.0	7.0	3.0	3.0	4.0	3.0	1.0	2.0	5.0	6.0	3.0	1.0	-3.0	-5.0	-5.0	-1.0	1.0	0.0	-1.0	2.0	3.0	2.0	4.0	2.0	1.9	9.0	-5.0
12	2.0	3.0	1.0	-1.0	2.0	3.0	1.0	3.0	4.0	0.0	0.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0	2.0	2.0	1.0	4.0	6.0	4.0	1.8	6.0	-1.0
13	3.0	3.0	3.0	3.0	4.0	4.0	5.0	3.0	1.0	1.0	1.0	2.0	0.0	-2.0	-2.0	-2.0	-1.0	0.0	1.0	2.0	1.0	1.0	2.0	4.0	1.5	5.0	-2.0
14	4.0	2.0	3.0	5.0	6.0	4.0	5.0	7.0	6.0	2.0	1.0	2.0	0.0	0.0	2.0	4.0	3.0	2.0	5.0	6.0	7.0	5.0	4.0	4.0	3.7	7.0	0.0
15	3.0	4.0	5.0	6.0	8.0	6.0	3.0	6.0	7.0	6.0	4.0	2.0	3.0	5.0	3.0	3.0	5.0	4.0	5.0	5.0	7.0	10.0	7.0	4.0	5.0	10.0	2.0
16	5.0	8.0	8.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1.0	0.0	3.0	3.0	5.0	5.0	2.0	1.0	5.0	7.0	5.0	4.0	4.3	8.0	0.0
17	3.0	5.0	7.0	6.0	6.0	6.0	4.0	3.0	1.0	0.0	-1.0	1.0	1.0	-1.0	0.0	2.0	3.0	2.0	3.0	2.0	2.0	6.0	6.0	6.0	3.0	7.0	-1.0
18	5.0	2.0	4.0	3.0	0.0	2.0	4.0	5.0	5.0	1.0	-1.0	2.0	2.0	0.0	2.0	5.0	4.0	6.0	7.0	6.0	6.0	6.0	6.0	8.0	3.8	8.0	-1.0
19	9.0	8.0	5.0	2.0	3.0	5.0	2.0	2.0	3.0	2.0	3.0	5.0	5.0	3.0	6.0	6.0	2.0	1.0	5.0	8.0	8.0	6.0	5.0	3.0	4.5	9.0	1.0
20	4.0	5.0	5.0	7.0	6.0	7.0	8.0	8.0	9.0	5.0	5.0	4.0	3.0	4.0	3.0	5.0	6.0	6.0	6.0	5.0	5.0	6.0	7.0	8.0	5.7	9.0	3.0
21	4.0	2.0	3.0	2.0	3.0	4.0	6.0	5.0	6.0	5.0	1.0	1.0	3.0	2.0	-1.0	1.0	-1.0	0.0	3.0	4.0	4.0	4.0	2.0	2.0	2.7	6.0	-1.0
22	2.0	5.0	5.0	2.0	2.0	4.0	6.0	6.0	5.0	5.0	5.0	4.0	3.0	1.0	2.0	2.0	-1.0	2.0	6.0	7.0	6.0	4.0	5.0	4.0	3.8	7.0	-1.0
23	1.0	3.0	4.0	4.0	3.0	4.0	3.0	2.0	3.0	4.0	2.0	1.0	2.0	2.0	1.0	1.0	3.0	3.0	3.0	5.0	4.0	3.0	5.0	4.0	2.9	5.0	1.0
24	0.0	2.0	3.0	2.0	2.0	2.0	4.0	6.0	5.0	5.0	7.0	6.0	2.0	2.0	3.0	4.0	3.0	1.0	3.0	4.0	4.0	6.0	6.0	3.0	3.5	7.0	0.0
25	4.0	5.0	6.0	4.0	3.0	4.0	6.0	3.0	0.0	-1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	3.0	3.0	3.0	6.0	10.0	11.0	5.0	3.3	11.0	-1.0
26	3.0	6.0	5.0	2.0	3.0	4.0	3.0	4.0	4.0	4.0	4.0	2.0	-1.0	1.0	2.0	-1.0	-1.0	2.0	4.0	4.0	5.0	6.0	5.0	3.0	3.0	6.0	-1.0
27	1.0	0.0	0.0	2.0	7.0	6.0	4.0	6.0	4.0	4.0	2.0	-2.0	1.0	2.0	0.0	1.0	1.0	3.0	5.0	6.0	5.0	7.0	8.0	5.0	3.3	8.0	-2.0
28	5.0	8.0	10.0	8.0	5.0	4.0	4.0	9.0	10.0	9.0	8.0	5.0	1.0	2.0	4.0	6.0	8.0	7.0	6.0	5.0	5.0	4.0	5.0	7.0	6.0	10.0	1.0
Avg	4.3	4.7	4.4	3.8	4.2	4.3	4.1	4.6	4.3	3.1	2.6	2.1	1.1	1.1	1.5	2.1	2.6	3.1	4.1	4.7	5.1	5.6	5.6	5.1	3.7	--	--
Max	9.0	9.0	10.0	8.0	8.0	8.0	11.0	15.0	11.0	9.0	9.0	10.0	7.0	6.0	6.0	6.0	8.0	8.0	10.0	11.0	11.0	11.0	11.0	10.0	--	15.0	--
Min	0.0	0.0	0.0	-1.0	0.0	2.0	1.0	1.0	0.0	-1.0	-1.0	-3.0	-3.0	-5.0	-5.0	-3.0	-1.0	-1.0	-1.0	0.0	0.0	1.0	2.0	2.0	--	--	-5.0

-- Indicates Invalid Data

SAROAD for Resolution, West_Plant
"Component, Channel: Table126, conc PM25 _ $\mu\text{g}/\text{m}^3$ Actual"
Month: Mar 2015

Day	Hour of day																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	4.0	2.0	3.0	4.0	4.0	4.0	3.0	1.0	2.0	5.0	6.0	4.0	2.0	1.0	0.0	4.0	5.0	2.0	5.0	7.0	7.0	7.0	6.0	5.0	3.9	7.0	0.0
2	6.0	8.0	7.0	6.0	5.0	5.0	5.0	4.0	3.0	2.0	3.0	5.0	4.0	4.0	4.0	3.0	4.0	5.0	4.0	1.0	2.0	5.0	4.0	4.0	4.3	8.0	1.0
3	4.0	3.0	2.0	1.0	4.0	5.0	4.0	4.0	4.0	0.0	0.0	3.0	2.0	0.0	1.0	3.0	4.0	4.0	8.0	6.0	5.0	6.0	5.0	6.0	3.5	8.0	0.0
4	5.0	2.0	3.0	4.0	5.0	5.0	3.0	6.0	5.0	1.0	--	-4.0	-2.0	4.0	5.0	2.0	0.0	1.0	4.0	5.0	5.0	4.0	5.0	1.0	3.0	6.0	-4.0
5	1.0	3.0	2.0	3.0	2.0	2.0	2.0	3.0	2.0	1.0	1.0	-2.0	0.0	3.0	0.0	0.0	1.0	0.0	1.0	4.0	5.0	3.0	4.0	3.0	1.8	5.0	-2.0
6	2.0	3.0	3.0	2.0	1.0	0.0	1.0	3.0	6.0	3.0	-2.0	0.0	0.0	0.0	1.0	-1.0	-1.0	-2.0	1.0	3.0	4.0	2.0	2.0	4.0	1.5	6.0	-2.0
7	2.0	0.0	-1.0	3.0	4.0	1.0	2.0	1.0	2.0	3.0	3.0	1.0	-2.0	-3.0	-2.0	0.0	1.0	0.0	1.0	2.0	1.0	-1.0	1.0	5.0	1.0	5.0	-3.0
8	3.0	--	2.0	1.0	2.0	5.0	6.0	7.0	5.0	3.0	2.0	1.0	1.0	3.0	3.0	1.0	0.0	0.0	2.0	2.0	2.0	4.0	6.0	5.0	2.9	7.0	0.0
9	5.0	8.0	5.0	3.0	7.0	7.0	5.0	9.0	7.0	3.0	5.0	5.0	5.0	4.0	5.0	3.0	3.0	3.0	4.0	5.0	6.0	9.0	8.0	7.0	5.5	9.0	3.0
10	6.0	6.0	7.0	7.0	5.0	4.0	9.0	8.0	3.0	4.0	5.0	3.0	0.0	1.0	4.0	4.0	3.0	2.0	4.0	6.0	7.0	7.0	6.0	6.0	4.9	9.0	0.0
11	6.0	5.0	5.0	4.0	3.0	4.0	6.0	5.0	4.0	3.0	2.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	4.0	4.0	2.0	3.0	4.0	3.0	3.3	6.0	1.0
12	2.0	3.0	4.0	5.0	4.0	3.0	2.0	4.0	5.0	3.0	2.0	2.0	3.0	3.0	0.0	0.0	4.0	4.0	3.0	4.0	7.0	6.0	3.0	4.0	3.3	7.0	0.0
13	4.0	4.0	3.0	3.0	4.0	5.0	6.0	4.0	5.0	5.0	4.0	3.0	2.0	3.0	1.0	1.0	4.0	6.0	4.0	5.0	3.0	2.0	3.0	3.0	3.6	6.0	1.0
14	2.0	2.0	3.0	5.0	8.0	6.0	3.0	1.0	1.0	2.0	4.0	5.0	2.0	1.0	1.0	1.0	0.0	1.0	3.0	3.0	6.0	6.0	3.0	3.0	3.0	8.0	0.0
15	3.0	3.0	2.0	2.0	3.0	4.0	4.0	3.0	2.0	0.0	0.0	2.0	0.0	0.0	1.0	3.0	4.0	2.0	2.0	5.0	4.0	4.0	4.0	4.0	2.5	5.0	0.0
16	4.0	6.0	5.0	3.0	3.0	2.0	1.0	3.0	6.0	5.0	2.0	--	0.0	2.0	1.0	0.0	1.0	2.0	1.0	0.0	0.0	2.0	3.0	4.0	2.4	6.0	0.0
17	4.0	5.0	6.0	4.0	2.0	3.0	2.0	3.0	4.0	3.0	2.0	2.0	1.0	0.0	3.0	6.0	8.0	6.0	4.0	4.0	6.0	4.0	3.0	4.0	3.7	8.0	0.0
18	4.0	4.0	5.0	6.0	8.0	8.0	7.0	7.0	6.0	4.0	4.0	4.0	2.0	2.0	3.0	4.0	6.0	6.0	6.0	5.0	6.0	7.0	4.0	6.0	5.2	8.0	2.0
19	7.0	5.0	6.0	5.0	4.0	5.0	5.0	5.0	4.0	1.0	2.0	3.0	1.0	1.0	5.0	3.0	4.0	6.0	3.0	0.0	4.0	8.0	3.0	3.0	3.9	8.0	0.0
20	6.0	6.0	5.0	4.0	5.0	4.0	2.0	4.0	6.0	6.0	2.0	-1.0	0.0	1.0	-4.0	-1.0	5.0	4.0	1.0	1.0	1.0	2.0	3.0	5.0	2.8	6.0	-4.0
21	5.0	2.0	2.0	4.0	3.0	3.0	5.0	2.0	-1.0	-2.0	0.0	0.0	1.0	2.0	-1.0	0.0	3.0	4.0	3.0	5.0	5.0	1.0	4.0	8.0	2.4	8.0	-2.0
22	10.0	8.0	4.0	4.0	6.0	3.0	2.0	2.0	2.0	5.0	4.0	0.0	0.0	3.0	3.0	1.0	-1.0	1.0	4.0	4.0	1.0	1.0	4.0	4.0	3.1	10.0	-1.0
23	1.0	0.0	3.0	8.0	11.0	6.0	4.0	4.0	2.0	1.0	4.0	6.0	4.0	4.0	1.0	-2.0	-1.0	1.0	4.0	5.0	3.0	1.0	4.0	8.0	3.4	11.0	-2.0
24	7.0	4.0	3.0	3.0	3.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	2.0	1.0	-1.0	3.0	5.0	5.0	6.0	5.0	4.0	4.0	5.0	5.0	3.9	7.0	-1.0
25	5.0	4.0	5.0	5.0	2.0	5.0	8.0	8.0	7.0	6.0	5.0	2.0	0.0	1.0	3.0	7.0	5.0	1.0	1.0	2.0	2.0	2.0	2.0	1.0	3.7	8.0	0.0
26	0.0	-2.0	0.0	2.0	3.0	2.0	--	--	--	--	--	--	--	--	--	-2.0	-3.0	-1.0	1.0	2.0	2.0	2.0	4.0	3.0	--	4.0	-3.0
27	1.0	1.0	1.0	3.0	4.0	3.0	4.0	3.0	1.0	2.0	0.0	-1.0	-1.0	-1.0	0.0	0.0	2.0	4.0	1.0	2.0	5.0	5.0	4.0	1.0	1.8	5.0	-1.0
28	2.0	7.0	7.0	3.0	4.0	4.0	2.0	4.0	5.0	2.0	2.0	3.0	2.0	2.0	0.0	-1.0	1.0	2.0	4.0	3.0	2.0	4.0	2.0	6.0	3.0	7.0	-1.0
29	11.0	6.0	2.0	2.0	1.0	3.0	5.0	5.0	4.0	3.0	-1.0	1.0	4.0	0.0	-1.0	2.0	3.0	3.0	4.0	6.0	7.0	6.0	6.0	6.0	3.7	11.0	-1.0
30	6.0	5.0	5.0	4.0	3.0	4.0	2.0	3.0	2.0	1.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	2.0	0.0	4.0	4.0	4.0	6.0	7.0	3.3	7.0	0.0
31	8.0	5.0	4.0	2.0	2.0	5.0	4.0	1.0	2.0	5.0	4.0	3.0	6.0	6.0	5.0	3.0	4.0	7.0	6.0	4.0	3.0	7.0	5.0	4.0	4.4	8.0	1.0
Avg	4.4	3.9	3.7	3.7	4.0	4.0	3.9	4.0	3.7	2.8	2.5	2.0	1.4	1.7	1.5	1.7	2.6	2.7	3.2	3.7	3.9	4.1	4.1	4.5	3.3	--	--
Max	11.0	8.0	7.0	8.0	11.0	8.0	9.0	9.0	7.0	6.0	6.0	6.0	6.0	6.0	5.0	7.0	8.0	7.0	8.0	7.0	7.0	9.0	8.0	8.0	--	11.0	--
Min	0.0	-2.0	-1.0	1.0	1.0	0.0	1.0	1.0	-1.0	-2.0	-2.0	-4.0	-2.0	-3.0	-4.0	-2.0	-3.0	-2.0	0.0	0.0	0.0	-1.0	1.0	1.0	--	--	-4.0

-- Indicates Invalid Data

Appendix C: NO₂, SO₂, O₃ Data – East Plant – Hourly

SAROAD for Resolution, East_Plant
"Component, Channel: TableAmbient_Hourly, NO2_ppb"
Month: Jan 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	-3.2	-1.5	-2.9	-3.2	-3.2	-3.1	-3.2	-3.3	-3.0	-2.2	-2.4	-2.0	-1.9	-2.6	-2.0	-2.5	-1.6	-1.4	-1.2	-0.6	-1.6	-2.9	-3.4	-3.6	-2.4	-0.6	-3.6
2	-3.5	-3.5	-3.5	-3.5	-3.5	-3.3	-3.3	-3.2	-3.0	-2.8	-2.5	-2.3	-2.0	-2.0	-2.1	-1.6	-1.2	-0.6	-0.4	-0.6	-0.5	-0.7	-0.6	-0.3	-2.1	-0.3	-3.5
3	-0.1	-0.3	-0.7	-1.3	-1.5	-1.2	-1.1	-1.4	-0.2	-0.9	-1.1	-0.9	-0.9	-1.3	-1.4	-1.4	-1.5	-1.6	-1.5	-0.8	-1.3	-1.8	-2.0	-2.4	-1.2	-0.1	-2.4
4	-2.3	-2.3	-2.5	-2.2	-2.2	-1.8	-0.9	-1.4	-2.1	-2.0	-1.1	-0.9	-1.8	-2.1	-1.4	-1.9	-2.1	-1.6	-1.9	-2.2	-2.4	-2.7	-2.3	-2.2	-1.9	-0.9	-2.7
5	-2.1	-2.4	-3.0	-2.5	-2.5	-2.4	-2.6	-2.6	-2.1	-2.4	-2.7	-2.4	-2.7	-2.6	-2.3	-2.5	-2.1	-2.2	-1.7	-2.2	-2.2	-2.6	-2.5	-1.9	-2.4	-1.7	-3.0
6	-2.7	-2.7	-2.9	-2.5	-1.8	-2.0	-2.5	-2.7	-2.2	-1.7	-1.4	-2.0	-2.2	-2.2	-2.6	-2.3	-2.8	-2.5	-2.3	-1.8	-2.5	-2.0	-1.3	-1.9	-2.2	-1.3	-2.9
7	-2.2	-2.6	-2.6	-2.2	-1.9	-2.1	-2.2	-1.9	0.9	1.9	0.5	0.5	0.1	-0.6	-0.9	-2.1	-2.8	-2.8	-2.5	-2.9	-2.8	-2.0	-1.8	-1.7	-1.5	1.9	-2.9
8	-1.6	-1.5	-1.3	-1.2	-1.3	-1.3	-1.3	-1.5	-1.0	-0.9	-1.3	-0.9	-1.0	-0.8	-0.8	0.2	2.6	0.1	-0.9	-1.6	-1.8	-1.8	-1.9	-1.9	-1.0	2.6	-1.9
9	-1.9	-1.7	-1.7	-1.5	-1.7	-1.6	-1.2	-1.5	-1.1	-1.1	-1.2	-1.2	-1.0	-1.4	-1.7	-1.7	-1.8	-2.0	-1.6	-1.5	-1.5	-0.9	-1.1	-0.9	-1.4	-0.9	-2.0
10	-0.9	-1.2	-1.3	-1.7	-1.8	-2.0	-1.8	-2.1	-1.8	-1.7	-1.8	-1.6	-1.5	-1.5	-1.6	0.2	-1.3	-0.5	-1.1	-0.4	-1.8	-0.9	-1.5	1.3	-1.3	1.3	-2.1
11	-1.3	0.5	-2.0	-2.3	-2.3	-1.9	-2.5	-1.4	-2.0	-1.7	-0.3	2.9	0.1	-1.4	-2.3	-1.6	-1.2	-0.9	-1.2	-1.7	-2.0	-2.1	-1.6	-2.8	-1.4	2.9	-2.8
12	-1.8	-1.6	-2.2	-2.7	-2.1	-1.7	0.2	2.5	-0.6	-1.5	-1.6	-1.8	-2.1	-2.0	-1.8	-1.6	-1.9	-2.5	-1.1	-0.7	-1.0	-0.3	-1.4	-0.7	-1.3	2.5	-2.7
13	-1.2	-2.2	-2.4	-3.1	-1.7	-1.3	0.7	1.2	3.8	1.7	-1.9	-1.6	-2.1	-2.4	-2.2	-1.9	-1.8	-2.4	-2.1	-1.7	0.6	-0.4	2.4	1.7	-0.8	3.8	-3.1
14	-1.1	-1.0	-0.7	-1.8	-2.2	-0.8	-1.6	-1.8	-2.7	-2.1	-1.6	-1.5	-1.1	-2.5	-2.7	-2.4	-3.2	-2.8	0.4	-3.1	-2.7	-0.8	-1.2	-1.1	-1.8	0.4	-3.2
15	-1.6	-2.6	-3.0	-2.9	-1.6	-0.7	-1.8	-2.3	-1.7	-2.3	-2.4	-2.3	--	--	-2.8	-2.9	-2.7	-2.5	-2.5	-2.6	-2.3	-2.6	-2.8	-2.6	-2.3	-0.7	-3.0
16	-2.3	-2.4	-2.4	-2.3	-1.6	-1.8	-2.5	-2.5	-1.6	-1.0	-1.4	-1.3	-1.6	-2.3	-2.9	-2.4	-1.8	-1.4	-1.2	-2.1	-2.7	-2.8	-2.7	-2.1	-2.1	-1.0	-2.9
17	-1.3	-1.6	-2.5	-2.7	-2.0	-1.0	-0.5	-0.7	-1.3	-2.0	-2.3	-2.1	-1.8	-1.8	-2.5	-2.6	-2.7	-1.7	-1.0	-0.2	-1.3	-0.8	-2.2	-1.2	-1.7	-0.2	-2.7
18	-1.3	-2.5	-1.8	-2.8	-2.1	-1.7	-2.2	-2.6	-1.7	-1.4	-0.9	-0.1	-1.0	-1.7	-0.8	4.8	-2.0	-2.1	-1.7	-1.1	-2.3	-1.9	-0.9	-2.1	-1.4	4.8	-2.8
19	-2.6	-3.5	-3.1	-3.2	-2.2	-1.0	-1.7	-2.3	-1.7	-1.3	-1.8	-2.2	-1.2	-2.2	-2.7	-3.0	-3.0	-3.1	-2.7	-2.4	-1.1	-1.9	-3.1	-2.5	-2.3	-1.0	-3.5
20	-3.6	-3.2	-3.6	-3.7	-2.1	-1.2	-1.2	-0.2	-0.3	-2.1	-1.2	-1.0	-2.4	-2.6	-2.8	-3.0	-2.9	-2.7	-2.2	-1.2	-1.6	-1.1	-2.0	-2.3	-2.1	-0.2	-3.7
21	-2.6	-2.9	-3.1	-3.1	-1.7	-3.3	1.9	-0.7	-1.8	0.5	0.8	-1.3	-1.0	0.4	0.8	1.3	1.4	0.4	-2.7	-3.3	-3.3	-3.0	-2.8	-2.7	-1.3	1.9	-3.3
22	-2.7	-3.0	-2.8	-2.8	-2.8	-2.9	-3.3	-3.0	-3.0	-3.1	-3.2	-3.3	-3.2	-3.0	-3.0	-3.3	-3.4	-3.5	-3.5	-3.0	-2.7	-3.0	-0.6	-0.9	-2.9	-0.6	-3.5
23	-2.1	-2.3	-2.6	-2.3	-2.4	-2.5	-2.5	-2.6	-2.3	-1.0	-2.2	-2.2	-2.5	-2.3	-2.3	-0.8	-1.2	-0.4	-1.1	-2.8	-2.7	-2.9	-3.0	-3.2	-2.2	-0.4	-3.2
24	-3.2	-3.1	-3.3	-3.1	-2.7	-2.9	-2.9	-2.9	-2.4	-2.7	-2.4	-3.0	-3.1	-3.2	-3.1	-2.4	-3.4	-2.8	-2.9	-2.8	-3.2	-2.8	-2.0	-1.5	-2.8	-1.5	-3.4
25	-2.3	-2.1	-2.7	-2.5	-1.1	-2.3	-3.3	-3.2	-2.2	-1.4	-1.6	-1.9	-2.9	-3.0	-2.8	-2.6	-3.2	-1.8	-1.7	-2.2	-2.7	-2.9	-2.4	-2.7	-2.4	-1.1	-3.3
26	-1.2	-2.8	-2.8	-2.7	-2.8	-2.1	-2.2	-2.3	-1.3	-0.6	-1.2	-1.9	-1.9	-0.9	-1.2	-1.7	-2.3	-1.9	-1.8	-1.2	-1.0	0.9	1.6	3.4	-1.3	3.4	-2.8
27	2.9	-1.4	-1.8	-1.5	0.3	-1.9	-2.0	0.2	-1.7	0.9	0.8	-1.7	-0.3	-1.3	-1.7	--	--	--	--	--	--	--	--	-1.3	--	--	--
28	-1.2	-1.5	0.4	1.8	0.4	-0.2	-1.3	1.9	0.3	-0.3	-0.5	-0.6	-1.0	-1.0	-0.9	-0.9	--	--	--	--	2.0	1.5	1.3	1.5	0.1	2.0	-1.5
29	1.3	0.8	1.1	0.8	0.6	1.2	1.9	2.6	3.1	--	--	2.6	2.1	0.9	2.1	2.8	0.9	2.2	1.3	0.5	0.2	0.4	1.0	0.6	1.4	3.1	0.2
30	0.4	0.1	-0.1	0.1	0.0	-0.1	0.1	-0.1	1.1	1.0	-0.2	-0.2	-0.1	0.0	0.2	0.3	0.8	0.7	0.9	0.8	0.9	1.3	1.6	0.3	0.4	1.6	-0.2
31	0.3	0.2	0.1	0.0	0.3	0.5	0.5	0.1	0.3	0.1	0.3	0.0	0.6	1.2	0.4	0.6	1.0	3.9	4.2	2.5	2.1	1.3	1.7	4.4	1.1	4.4	0.0
Avg	-1.6	-1.9	-2.1	-2.1	-1.7	-1.6	-1.5	-1.3	-1.1	-1.1	-1.3	-1.2	-1.4	-1.6	-1.7	-1.3	-1.6	-1.4	-1.3	-1.5	-1.5	-1.4	-1.3	-1.1	-1.5	--	--
Max	2.9	0.8	1.1	1.8	0.6	1.2	1.9	2.6	3.8	1.9	0.8	2.9	2.1	1.2	2.1	4.8	2.6	3.9	4.2	2.5	2.1	1.5	2.4	4.4	--	4.8	--
Min	-3.6	-3.5	-3.6	-3.7	-3.5	-3.3	-3.3	-3.3	-3.0	-3.1	-3.2	-3.3	-3.2	-3.2	-3.1	-3.3	-3.4	-3.5	-3.5	-3.3	-3.3	-3.0	-3.4	-3.6	--	--	-3.7

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: TableAmbient_Hourly, NO2_ppb"
Month: Feb 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	1.7	0.7	4.5	1.6	0.2	0.5	-0.2	-0.1	-0.1	0.0	0.1	0.4	0.4	0.4	0.1	0.1	0.0	-0.1	0.1	0.3	0.6	0.5	1.4	1.4	0.6	4.5	-0.2
2	1.7	0.8	1.2	0.0	1.5	1.5	1.4	0.9	1.2	1.4	2.1	2.3	1.2	0.8	0.7	0.8	0.9	0.8	1.0	1.4	1.3	0.8	0.4	0.3	1.1	2.3	0.0
3	1.2	0.9	0.7	0.4	0.9	1.9	1.8	1.7	2.2	1.4	1.2	1.3	1.1	0.9	1.0	0.5	0.3	0.4	0.4	0.3	0.9	0.5	0.4	-0.2	0.9	2.2	-0.2
4	0.2	0.7	0.8	1.9	2.9	2.3	2.1	7.6	5.0	4.7	2.7	3.9	4.7	4.4	2.2	1.6	1.3	1.5	1.6	1.5	2.0	2.4	0.3	-0.1	2.4	7.6	-0.1
5	1.2	2.1	1.3	1.0	0.8	1.4	1.3	0.5	0.4	0.6	--	--	--	2.7	0.8	0.0	0.2	0.9	0.5	0.8	1.3	1.8	1.9	1.3	1.1	2.7	0.0
6	0.5	0.7	0.6	0.8	0.4	0.6	0.9	1.9	1.4	1.3	2.3	1.7	1.4	1.0	0.3	0.6	-0.1	-0.4	0.0	0.3	0.0	-0.5	-0.7	-0.7	0.6	2.3	-0.7
7	-0.9	-0.8	-0.9	-0.8	-0.3	-0.1	-0.2	-0.2	2.2	4.3	1.5	0.9	0.5	0.3	0.1	0.0	0.1	0.3	0.7	0.6	1.0	0.4	0.9	0.7	0.4	4.3	-0.9
8	-0.2	0.1	0.0	0.2	0.4	0.6	0.2	2.4	2.8	2.1	3.6	2.4	0.9	0.7	0.5	0.6	0.6	0.6	0.7	0.5	2.0	0.3	-0.5	-0.3	0.9	3.6	-0.5
9	-0.3	0.8	-0.3	0.1	0.2	1.0	2.3	2.5	1.4	0.8	0.7	1.2	1.3	0.9	0.6	1.0	0.4	0.6	1.1	0.7	1.4	1.8	-0.8	-0.7	0.8	2.5	-0.8
10	-0.8	-0.9	-0.8	-0.6	0.1	-0.3	0.4	0.7	0.9	1.3	0.9	0.0	0.6	0.1	0.2	0.4	0.3	0.3	0.7	1.3	1.4	1.8	2.4	2.4	0.5	2.4	-0.9
11	2.6	2.4	1.6	2.3	5.4	0.2	0.4	-0.3	-0.1	0.2	0.3	0.0	0.3	0.0	0.0	-0.3	-0.5	-0.5	-0.2	0.0	-0.3	-0.4	0.2	-0.7	0.5	5.4	-0.7
12	-0.5	-0.4	-0.6	-0.1	-0.2	0.5	0.4	0.0	0.9	0.1	0.9	-0.2	0.1	0.2	0.4	0.0	-0.2	0.0	-0.2	-0.1	0.5	0.3	0.5	0.3	0.1	0.9	-0.6
13	0.6	0.4	0.2	0.3	0.3	0.1	0.3	0.7	0.9	0.9	0.7	0.7	0.8	0.4	0.1	0.2	0.0	0.2	1.8	1.7	0.1	0.2	0.7	1.3	0.6	1.8	0.0
14	1.3	0.7	0.2	0.1	0.1	0.5	0.6	0.7	1.4	12.9	1.2	0.7	0.6	0.5	0.4	0.7	0.6	0.5	1.1	1.1	1.3	1.5	2.3	2.0	1.4	12.9	0.1
15	0.5	0.8	2.8	0.9	1.5	2.8	2.6	2.2	3.1	3.1	1.0	0.4	0.5	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.6	1.2	3.1	0.4
16	0.9	0.5	1.8	2.6	0.6	0.3	0.2	0.7	4.5	1.9	1.0	1.6	0.6	0.4	0.3	0.3	0.3	0.1	0.2	0.4	0.7	1.4	0.5	-0.3	0.9	4.5	-0.3
17	-0.2	-0.3	-0.1	-0.1	-0.4	-0.7	-0.3	0.0	0.2	0.3	0.2	0.4	0.3	-0.2	-0.5	-0.4	-0.3	0.3	0.9	0.9	1.5	1.5	0.4	-0.3	0.1	1.5	-0.7
18	-0.5	-0.3	0.1	0.0	-0.1	-0.5	0.5	2.7	2.1	2.0	0.4	1.0	0.5	0.7	0.5	0.1	0.1	0.6	1.0	1.6	2.3	1.4	1.0	0.8	0.8	2.7	-0.5
19	-0.3	0.4	-0.4	0.6	0.7	0.9	1.6	8.8	2.7	2.3	1.1	1.3	0.7	0.0	--	-1.5	-1.6	-1.8	-1.0	0.6	-1.0	-1.5	-2.1	-2.1	0.4	8.8	-2.1
20	-2.2	-2.1	-2.0	-1.7	-1.5	-0.9	-1.1	-1.1	6.5	3.6	1.1	-1.4	-1.6	-1.6	-1.9	-2.0	-1.9	-1.8	-1.8	-1.5	-0.9	-0.9	-1.3	-2.0	-0.9	6.5	-2.2
21	-2.2	-1.9	-2.4	-2.1	-1.7	-1.9	-1.1	-1.7	0.8	-1.2	-1.7	-1.9	-2.1	-2.1	-1.9	-2.1	-2.4	-2.3	-2.2	-2.4	-2.3	-2.3	-2.4	-2.3	-1.9	0.8	-2.4
22	-2.3	-2.4	-2.5	-2.4	-2.5	-2.4	-2.4	-2.1	-2.1	-1.8	-1.8	-1.7	-1.7	-2.0	-1.8	-2.0	-2.1	-2.2	-2.1	-2.2	-2.2	-2.1	-1.8	-2.0	-2.1	-1.7	-2.5
23	-2.4	-2.6	-2.7	-2.7	-2.4	-2.4	-2.5	-2.3	-2.3	-2.1	-2.1	-2.4	-2.3	-2.1	-1.8	-2.2	-1.7	-1.3	-1.8	-1.5	-1.4	-1.3	-1.8	-2.1	-2.1	-1.3	-2.7
24	-0.4	-1.9	-2.1	-2.3	-2.3	-1.6	-1.6	-1.2	-1.8	-1.9	-1.3	-1.1	-1.2	-1.4	-1.1	-0.5	-0.3	-0.7	-0.8	0.7	-0.4	-1.0	0.1	2.7	-1.0	2.7	-2.3
25	-1.1	-1.9	-1.3	-1.4	-1.2	-1.4	-1.7	-1.4	0.5	-1.0	-1.1	-1.4	-1.4	-1.4	-1.3	-1.6	-1.5	-1.3	-0.2	1.3	2.0	2.7	-0.8	-1.0	-0.8	2.7	-1.9
26	-0.7	-1.1	-0.2	-0.9	1.3	1.1	1.1	2.1	3.3	1.2	-0.3	-0.7	-1.1	-1.5	-1.7	-1.8	-1.9	-1.9	-0.8	-1.5	-1.0	-0.5	0.1	-0.1	-0.3	3.3	-1.9
27	-0.5	-0.8	-1.4	-1.2	-0.7	-0.5	-1.2	2.3	-0.5	-0.5	-1.6	-1.8	-2.0	-2.0	-1.9	-2.2	-2.0	-2.2	-2.3	-2.1	-1.8	-2.1	-2.3	-2.4	-1.4	2.3	-2.4
28	-2.4	-2.4	-2.5	-2.2	-2.3	-2.2	-2.3	-2.1	-2.2	-2.1	-1.9	-2.0	-2.2	-2.1	-2.3	-2.3	-2.3	-2.2	-2.2	-2.3	-2.3	-2.3	-2.2	-2.4	-2.2	-1.9	-2.5
Avg	-0.2	-0.3	-0.2	-0.2	0.1	0.1	0.1	0.9	1.3	1.3	0.4	0.2	0.0	-0.1	-0.3	-0.4	-0.5	-0.4	-0.1	0.1	0.3	0.2	-0.1	-0.2	0.1	--	--
Max	2.6	2.4	4.5	2.6	5.4	2.8	2.6	8.8	6.5	12.9	3.6	3.9	4.7	4.4	2.2	1.6	1.3	1.5	1.8	1.7	2.3	2.7	2.4	2.7	--	12.9	--
Min	-2.4	-2.6	-2.7	-2.7	-2.5	-2.4	-2.5	-2.3	-2.3	-2.1	-2.1	-2.4	-2.3	-2.1	-2.3	-2.3	-2.4	-2.3	-2.3	-2.4	-2.3	-2.3	-2.4	-2.4	--	--	-2.7

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: TableAmbient_Hourly, NO2_ppb"
Month: Mar 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	-2.3	-2.0	-2.4	-2.5	-2.6	-2.0	-1.8	0.8	-1.1	-1.4	-1.3	-1.6	-1.8	-1.9	-2.1	-1.8	-2.2	-2.3	-2.3	-2.0	-2.5	-2.5	-2.1	-2.3	-1.9	0.8	-2.6
2	-2.3	-2.4	-2.3	-2.3	-2.3	-2.2	-2.1	-2.3	-2.2	-2.2	-2.1	-2.0	-0.9	-0.7	-0.1	-1.6	-1.9	-2.0	-2.2	-2.0	-0.5	-1.3	0.2	-1.6	-1.7	0.2	-2.4
3	-1.6	-1.0	-1.2	-1.1	-1.5	-1.1	-0.6	0.0	0.1	-0.5	-1.8	-1.7	-1.3	-1.7	-1.7	-1.9	-2.1	-2.2	-1.9	-1.8	-1.8	-1.6	-1.6	-1.4	-1.4	0.1	-2.2
4	-2.0	-1.7	-0.6	-1.5	-1.2	-0.9	-0.5	1.0	1.3	-0.2	-0.9	-0.7	-1.4	--	-1.8	-1.7	-1.7	-1.6	-1.1	-0.5	-0.2	1.3	-0.8	-1.2	-0.8	1.3	-2.0
5	-1.7	-2.4	-2.8	-2.8	-2.7	-2.7	-2.8	-2.5	-2.2	-1.8	-1.1	-1.6	-2.0	-1.7	-2.1	-2.4	-1.8	-2.2	-1.6	-1.5	-2.0	-2.1	-2.5	-2.2	-2.1	-1.1	-2.8
6	-2.4	-1.9	-1.8	-1.7	-1.2	-1.5	-1.2	-0.6	-0.7	-1.4	-1.4	-2.0	-2.6	-2.4	-2.8	-2.0	-2.6	-2.6	-2.5	-2.1	-2.1	-2.3	-2.7	-2.2	-2.0	-0.6	-2.8
7	-2.2	-2.3	-2.3	-2.1	0.4	-1.1	-1.1	-1.6	-1.4	-1.4	-1.6	-2.2	-1.9	-2.1	-2.4	-2.5	-2.6	-2.5	-2.6	-2.0	-2.5	-2.4	-1.8	-0.8	-1.9	0.4	-2.6
8	-1.7	--	-2.6	-1.1	-1.7	-2.1	-2.3	-1.7	-1.4	-1.3	-1.8	-1.8	-2.0	-2.0	-2.0	-2.2	-2.2	-2.1	-1.8	-1.7	-1.7	-1.5	-1.8	-2.2	-1.9	-1.1	-2.6
9	-2.4	-2.3	-2.5	-2.4	-2.5	-2.2	-1.2	-0.5	1.5	-0.8	-1.9	-1.8	-2.2	-2.3	-2.3	-2.6	-2.5	-2.4	-1.2	-0.4	-0.7	0.7	0.2	0.0	-1.5	1.5	-2.6
10	-0.7	0.4	1.0	-0.1	-0.9	-0.4	-1.0	-0.5	-1.3	-1.2	-1.6	-1.5	-1.3	-2.3	-2.4	-2.4	-2.4	-2.4	-1.9	-1.8	-1.7	0.2	-1.5	-2.0	-1.2	1.0	-2.4
11	-1.9	-1.7	-1.6	-1.7	-1.9	-1.4	-1.3	-0.1	-0.9	-1.0	-2.0	-2.3	-2.4	-2.6	-1.3	-2.5	-2.6	-2.3	-2.1	-1.0	-1.3	-1.2	-0.3	-0.6	-1.6	-0.1	-2.6
12	-0.4	-0.3	-1.9	-1.7	-2.3	-1.1	-0.6	-0.1	1.3	0.0	-0.6	-0.2	0.0	-1.8	-1.9	-2.0	-2.3	-2.5	-2.6	-2.5	-2.5	-2.6	-2.5	-2.4	-1.4	1.3	-2.6
13	-2.3	-2.1	-2.5	-2.6	-2.3	-2.2	-2.1	-1.8	-1.5	-1.2	-1.1	-1.2	-1.9	-2.3	-2.3	-2.4	-2.1	-2.1	-1.4	-2.0	-2.1	-2.0	-1.6	-1.5	-1.9	-1.1	-2.6
14	-1.4	-2.2	-1.4	-1.2	-1.0	-1.6	-2.5	-2.2	-2.3	-2.0	-2.0	-2.0	-2.2	-2.3	-2.4	-2.4	-2.6	-2.7	-1.9	-1.3	-1.4	-1.5	-1.5	0.1	-1.8	0.1	-2.7
15	-2.3	-2.8	-2.8	-2.4	0.4	-1.8	-1.8	-2.2	-2.5	-2.5	-2.5	-2.6	-2.4	-2.6	-2.7	-2.7	-2.6	-2.7	-2.9	-2.3	-0.9	-2.4	-2.8	-2.4	-2.3	0.4	-2.9
16	-2.3	-2.2	-2.2	-2.2	-2.1	-1.3	-1.3	-0.4	-0.2	-0.7	-0.4	-2.3	-2.3	-2.2	-2.2	-2.5	-2.5	-2.3	-2.3	-1.6	-1.6	-0.5	4.8	-0.6	-1.4	4.8	-2.5
17	-2.2	-1.6	-1.1	-0.8	-1.4	-0.8	0.2	-0.3	-0.8	-0.9	-1.8	-1.7	-1.6	-1.7	-2.1	-1.8	-2.0	-2.1	-1.3	-0.4	-0.8	-1.1	-1.5	-0.9	-1.3	0.2	-2.2
18	-1.8	-2.0	-2.3	-2.6	-2.7	-2.7	-2.7	-0.9	0.3	-2.4	-2.1	-2.1	-2.2	-2.3	-2.2	-2.2	-2.4	-2.0	-2.1	-2.4	-2.0	-0.1	0.4	3.3	-1.7	3.3	-2.7
19	-0.3	-0.9	-1.0	-0.2	-1.1	-1.9	-1.9	-1.5	-2.0	-1.4	-1.2	-1.5	-1.4	-1.5	-1.8	-2.0	-1.9	-1.9	-2.1	-2.1	-1.3	-0.7	-0.8	-1.8	-1.4	-0.2	-2.1
20	-1.7	2.6	-0.4	-1.6	-1.4	-1.6	-0.6	2.6	0.6	-1.3	-1.5	-1.5	-1.2	-1.2	--	--	--	--	--	--	--	--	--	--	--	--	--
21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-2.8	-2.6	-2.2	-2.2	-1.9	-2.0	-2.1	-0.2	1.0	--	--	--
26	-2.0	-1.7	-2.2	-1.5	-2.6	-3.0	-3.2	-2.8	-2.7	-2.7	-2.3	-2.1	-2.2	-2.4	-2.8	-2.9	-2.9	-2.9	-2.8	-2.1	0.0	-2.3	-2.2	-1.5	-2.3	0.0	-3.2
27	-1.9	-2.6	-2.2	-1.9	-2.4	-1.6	-1.3	-0.3	-1.3	-0.2	-0.7	-1.0	-2.1	-2.5	-2.4	-2.6	-2.8	-2.4	-1.5	-1.1	-1.1	-2.1	-2.3	-2.0	-1.8	-0.2	-2.8
28	-0.9	-2.5	-2.5	-2.5	-2.7	-3.0	-3.0	-2.3	-1.8	-1.5	-2.9	-3.1	-3.0	-2.9	-3.1	-3.0	-2.9	-3.1	-3.0	-2.3	-2.3	-2.2	-2.8	-3.0	-2.6	-0.9	-3.1
29	-2.5	-3.0	-3.3	-3.0	-3.0	-2.7	-2.4	-2.0	-1.6	-2.2	-0.7	-0.2	-2.1	-2.5	-3.2	-3.2	-3.3	-3.3	-2.1	-2.6	-2.6	-3.0	-2.3	-3.0	-2.5	-0.2	-3.3
30	-3.2	-3.3	-3.4	-3.3	-2.3	-1.0	-0.4	0.3	-0.4	-2.1	-2.8	-2.6	-2.9	-3.0	-3.1	-3.1	-3.1	-3.1	-2.9	-2.8	-2.7	0.8	2.9	0.8	-1.9	2.9	-3.4
31	-1.9	-1.8	-2.5	-3.1	-3.1	-2.2	-0.8	-0.5	-0.4	-2.1	-2.0	-2.4	-2.8	-2.7	-2.8	-2.8	-2.8	-2.9	-2.8	-2.9	-2.7	-2.4	-2.3	-2.9	-2.3	-0.4	-3.1
Avg	-1.8	-1.8	-2.0	-1.9	-1.8	-1.8	-1.6	-0.9	-0.9	-1.4	-1.6	-1.8	-1.9	-2.1	-2.2	-2.4	-2.4	-2.4	-2.1	-1.8	-1.6	-1.4	-1.1	-1.3	-1.8	--	--
Max	-0.3	2.6	1.0	-0.1	0.4	-0.4	0.2	2.6	1.5	0.0	-0.4	-0.2	0.0	-0.7	-0.1	-1.6	-1.7	-1.6	-1.1	-0.4	0.0	1.3	4.8	3.3	--	4.8	--
Min	-3.2	-3.3	-3.4	-3.3	-3.1	-3.0	-3.2	-2.8	-2.7	-2.7	-2.9	-3.1	-3.0	-3.0	-3.2	-3.2	-3.3	-3.3	-3.0	-2.9	-2.7	-3.0	-2.8	-3.0	--	--	-3.4

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: TableAmbient_Hourly, SO2_ppb"
Month: Jan 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.0	0.3	0.4	0.4	0.6	0.5	0.2	0.3	0.3	0.3	0.3	0.6	0.0
2	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.4	0.5	0.2	
3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.1	0.3	0.5	0.1	
4	0.2	0.2	0.2	0.2	0.2	1.1	1.4	1.2	1.5	1.4	1.1	0.8	0.9	0.7	0.7	0.6	0.6	0.4	0.4	0.7	2.6	2.9	3.3	1.0	1.0	3.3	0.2	
5	0.7	0.8	1.6	1.4	0.8	0.4	0.6	0.7	0.6	0.8	1.3	0.2	1.2	0.5	0.3	0.5	1.8	0.6	0.5	2.1	3.3	2.1	1.2	2.8	1.1	3.3	0.2	
6	1.5	1.4	1.8	0.9	1.5	2.5	1.5	1.0	2.0	2.0	1.4	1.7	2.0	0.7	0.4	0.5	1.7	1.1	1.4	1.5	2.2	2.5	1.9	1.5	1.5	2.5	0.4	
7	1.8	0.7	1.1	0.8	1.4	1.7	1.1	1.1	1.7	1.7	1.1	0.3	0.3	0.3	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.7	1.8	0.1	
8	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.4	0.5	0.3	0.5	0.2	
9	0.6	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.2	0.2	0.3	0.4	0.3	0.3	0.4	0.7	0.2	
10	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.2	
11	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.7	0.4	0.7	0.2	
12	0.9	0.5	0.5	0.3	0.7	1.2	0.6	0.5	0.9	1.3	1.4	1.0	0.5	0.8	1.1	1.3	1.8	2.1	1.0	0.6	0.7	1.2	1.5	1.1	1.0	2.1	0.3	
13	1.3	1.8	1.8	2.7	1.5	1.1	0.9	0.7	0.5	0.6	0.7	1.0	2.1	1.1	0.5	0.4	0.3	0.4	0.4	0.4	0.4	1.8	1.7	0.6	1.0	2.7	0.3	
14	0.6	0.6	0.8	0.8	1.0	0.6	0.6	1.0	0.8	1.3	1.1	1.2	1.8	1.1	0.3	0.3	0.3	-0.1	0.1	0.3	0.3	0.3	0.4	1.6	0.7	1.8	-0.1	
15	4.4	4.7	3.6	2.8	4.6	4.0	2.9	2.1	1.2	0.6	0.5	0.4	0.4	--	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.5	0.5	1.1	1.6	4.7	0.2	
16	1.8	0.7	0.4	0.4	0.4	0.5	0.4	0.4	0.9	2.0	0.9	0.6	0.5	0.3	0.3	0.4	0.3	0.2	0.3	0.3	0.3	0.5	1.5	1.2	0.6	2.0	0.2	
17	1.2	1.3	1.5	1.7	1.6	0.8	1.1	0.8	0.8	0.8	0.7	1.2	0.8	0.9	0.6	0.6	0.3	0.5	0.4	0.4	0.8	8.3	2.6	1.4	1.3	8.3	0.3	
18	1.3	1.9	0.8	1.1	1.8	3.9	2.9	1.3	2.1	1.7	1.8	2.8	1.1	0.5	0.3	0.6	0.9	1.0	0.9	0.9	1.3	2.5	1.9	0.9	1.5	3.9	0.3	
19	0.5	0.3	0.2	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.5	0.8	0.6	0.7	0.9	1.1	1.4	1.3	1.4	1.0	0.9	0.8	0.6	0.6	1.4	0.2	
20	0.5	0.5	0.4	0.4	0.5	0.6	0.6	0.6	0.5	0.5	0.6	0.7	1.2	0.9	0.8	1.5	2.1	2.3	2.2	1.8	1.7	1.5	1.3	1.4	1.0	2.3	0.4	
21	1.3	1.3	1.8	3.0	4.4	4.3	3.0	3.7	10.2	8.1	5.2	1.6	2.0	1.4	1.0	1.0	0.9	0.5	0.5	0.4	0.5	0.4	0.5	0.5	2.4	10.2	0.4	
22	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.3	0.2	0.4	0.4	0.6	0.2	
23	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.7	0.5	0.4	1.1	0.4	1.1	0.2	
24	0.8	0.5	0.4	1.0	1.4	1.6	0.9	0.4	0.5	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.2	0.3	0.4	1.1	1.7	1.9	1.0	0.7	1.9	0.2	
25	0.8	3.0	1.5	1.3	1.8	0.9	0.5	0.6	0.6	0.8	1.7	2.2	1.2	0.8	0.5	0.3	0.4	0.4	0.9	2.7	1.9	1.3	1.5	1.3	1.2	3.0	0.3	
26	1.0	1.3	2.1	1.1	0.7	1.7	1.1	1.0	1.8	1.5	0.5	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.3	0.4	0.5	0.6	0.8	2.1	0.3	
27	0.6	0.4	0.3	0.3	0.7	0.6	0.3	0.2	0.3	0.3	0.4	0.3	0.7	0.8	0.6	--	--	--	--	--	--	--	--	0.7	--	--	--	
28	0.5	0.3	0.2	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.3	0.6	0.8	0.9	1.0	0.7	0.5	0.5	0.4	0.5	0.5	0.6	0.4	0.4	1.0	0.1	
29	0.4	0.4	0.4	0.4	0.5	0.6	2.7	5.2	6.3	5.1	2.4	1.6	0.9	0.6	0.6	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	1.3	6.3	0.3	
30	0.4	0.0	0.2	0.4	0.3	0.4	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.1	0.4	0.4	0.3	0.0	0.4	0.5	0.3	0.5	0.0	
31	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.3	0.4	0.4	0.4	0.7	1.2	0.8	0.7	0.6	0.6	0.9	0.5	1.2	0.3	
Avg	0.8	0.8	0.8	0.8	1.0	1.0	0.9	0.9	1.2	1.1	0.9	0.7	0.7	0.6	0.5	0.5	0.6	0.6	0.6	0.7	0.8	1.1	0.9	0.8	0.8	--	--	
Max	4.4	4.7	3.6	3.0	4.6	4.3	3.0	5.2	10.2	8.1	5.2	2.8	2.1	1.4	1.1	1.5	2.1	2.3	2.2	2.7	3.3	8.3	3.3	2.8	--	10.2	--	
Min	0.2	0.0	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.1	0.0	0.3	-0.1	0.1	0.2	0.2	0.0	0.2	0.1	--	--	-0.1	

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: TableAmbient_Hourly, SO2_ppb"
Month: Feb 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.6	0.4	0.2	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.2	0.3	0.4	0.3	0.2	0.4	0.4	0.2	0.3	0.4	3.4	2.7	0.6	3.4	0.2
2	0.6	0.4	0.4	0.5	0.4	0.4	1.8	2.5	1.8	2.4	2.2	3.3	1.1	0.5	0.4	0.6	1.1	1.2	1.0	0.9	1.6	1.2	0.8	0.6	1.2	3.3	0.4
3	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.7	0.8	0.7	0.9	1.8	2.4	2.6	2.5	2.3	2.2	1.8	1.3	0.9	1.0	1.1	2.6	0.3
4	1.4	1.7	1.9	2.0	1.6	1.3	0.8	0.9	0.8	1.2	0.9	1.6	2.0	1.7	1.5	2.0	2.8	2.4	2.2	1.7	1.3	1.2	0.8	0.4	1.5	2.8	0.4
5	0.6	0.6	0.6	0.5	0.4	0.4	0.2	0.2	0.3	0.5	--	--	2.4	2.4	1.0	0.4	0.6	0.7	0.6	0.5	0.4	0.4	0.6	0.7	0.7	2.4	0.2
6	0.6	0.6	0.4	0.6	1.2	0.9	0.8	1.2	2.2	2.6	1.4	0.8	0.5	0.4	0.2	0.5	0.6	0.6	0.6	0.5	0.4	0.3	0.4	0.3	0.8	2.6	0.2
7	0.4	0.4	0.4	0.4	0.2	0.3	0.4	0.4	0.5	0.4	0.4	1.6	0.9	1.6	1.6	1.6	1.4	1.3	0.9	0.9	0.9	0.5	0.5	0.5	0.8	1.6	0.2
8	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.5	0.6	0.7	0.6	0.6	0.8	0.8	0.6	0.6	0.6	0.4	0.6	0.6	0.5	0.4	0.4	0.3	0.5	0.8	0.3
9	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.7	1.0	1.0	1.8	1.5	1.4	1.8	1.8	1.4	0.6	0.4	0.4	0.4	0.7	1.8	0.3
10	0.3	0.3	0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.4	0.3	0.5	0.7	1.5	2.5	2.4	2.4	2.1	1.1	1.0	0.9	0.8	0.6	0.5	0.9	2.5	0.3
11	0.4	0.5	0.4	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.5	0.4	0.3	0.4	0.3	0.3	0.7	0.5	0.3	2.5	0.3	0.5	2.5	0.3
12	0.4	0.9	0.4	0.3	0.3	1.3	1.0	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.4	1.3	0.2
13	0.5	0.2	0.4	0.3	0.4	0.3	0.3	0.3	0.5	0.5	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.4	2.3	0.4	2.3	0.2
14	2.7	5.0	2.0	0.7	0.4	0.4	0.4	0.4	0.7	1.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.4	0.5	0.8	5.0	0.3
15	0.4	0.4	0.5	0.9	1.5	1.1	1.1	1.3	1.1	1.2	0.8	0.7	0.7	0.6	0.7	0.7	0.8	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.8	1.5	0.4
16	0.5	0.6	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.4	0.5	0.6	0.4
17	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.5	0.3
18	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.4	0.4	1.9	1.0	0.9	1.0	0.9	1.5	2.0	1.8	1.4	1.2	1.3	1.3	0.9	0.9	2.0	0.3
19	0.6	0.5	0.4	0.5	0.6	0.4	0.4	0.5	0.4	7.3	5.6	5.7	9.2	3.2	--	--	1.0	1.0	0.8	0.5	0.3	0.3	0.2	0.3	1.8	9.2	0.2
20	0.2	0.2	0.4	0.4	0.6	0.5	0.5	0.5	0.5	0.5	1.0	2.2	2.1	2.0	1.3	1.3	1.4	0.6	0.4	0.3	0.4	0.3	0.4	0.4	0.8	2.2	0.2
21	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.4	3.8	2.4	0.8	0.9	0.5	0.4	0.4	0.4	0.4	0.2	0.3	0.4	0.5	0.4	0.7	3.8	0.2
22	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.0	0.3	0.3	0.3	0.2	0.3	0.5	0.0
23	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.1
24	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.1
25	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.3	0.3	0.6	1.1	1.4	1.2	1.0	0.9	0.9	0.6	0.5	0.4	0.4	0.3	0.5	1.4	0.1
26	0.3	0.3	0.3	0.3	0.1	0.3	0.4	0.5	1.1	1.6	0.9	0.6	0.5	0.7	1.0	0.7	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.3	0.5	1.6	0.1
27	0.4	0.4	0.4	0.3	0.6	2.2	4.5	3.8	2.1	1.8	1.2	1.1	1.5	0.8	0.4	0.4	0.4	0.5	0.6	0.6	0.5	0.5	0.4	0.3	1.1	4.5	0.3
28	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.4	0.2
Avg	0.5	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.6	1.0	0.9	1.0	1.1	0.9	0.8	0.8	0.9	0.8	0.7	0.6	0.6	0.5	0.7	0.6	0.7	--	--
Max	2.7	5.0	2.0	2.0	1.6	2.2	4.5	3.8	2.2	7.3	5.6	5.7	9.2	3.2	2.5	2.4	2.8	2.5	2.3	2.2	1.8	1.3	3.4	2.7	--	9.2	--
Min	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.0	0.2	0.1	0.2	0.2	--	--	0.0

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: TableAmbient_Hourly, SO2_ppb"
Month: Mar 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.4	0.2	
2	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.1	0.2	0.2	0.3	0.1	0.1	0.2	0.3	0.5	0.1	
3	0.3	0.3	0.2	0.2	0.3	0.3	0.4	0.3	0.2	0.4	0.8	0.7	0.6	0.4	0.3	0.4	0.3	0.1	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.8	0.1	
4	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.3	--	--	0.1	0.1	0.1	0.1	0.0	0.0	0.0	-0.1	-0.1	0.2	0.4	-0.1	
5	0.0	0.0	0.1	-0.1	0.0	0.0	0.1	0.5	0.4	1.0	1.6	0.4	0.0	-0.1	-0.1	-0.1	0.2	1.3	0.7	0.0	0.0	0.2	0.0	0.0	0.3	1.6	-0.1	
6	0.0	0.0	0.4	1.1	1.4	0.4	0.5	0.1	0.4	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.4	-0.1	
7	0.1	0.1	0.0	0.0	0.1	0.3	0.9	0.4	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.1	0.1	0.1	0.2	0.1	0.9	0.0	
8	0.2	--	0.1	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.2	1.1	2.8	2.7	1.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.5	2.8	0.0	
9	0.1	0.1	0.1	0.1	0.1	0.1	0.0	-0.1	0.1	0.2	2.4	3.0	2.3	2.2	0.8	0.3	0.3	0.3	0.1	0.2	0.2	0.1	0.1	0.1	0.5	3.0	-0.1	
10	0.2	0.1	0.1	0.2	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	-0.1	0.1	0.1	0.4	-0.1	
11	0.1	0.1	0.1	0.0	0.0	0.2	4.5	5.0	4.7	1.7	0.7	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.2	0.3	0.5	0.4	0.3	0.1	0.8	5.0	0.0	
12	0.0	0.0	0.1	0.1	0.0	0.1	0.5	0.4	0.2	0.7	0.7	0.9	3.6	0.4	0.1	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.4	3.6	0.0	
13	0.2	1.7	0.7	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.7	2.5	0.2	0.1	0.1	0.1	0.3	0.7	0.7	0.6	0.6	0.3	1.8	1.4	0.6	2.5	0.1	
14	1.3	3.0	9.2	5.2	1.9	0.4	0.1	0.5	-0.1	0.9	0.4	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1.0	9.2	-0.1	
15	0.0	-0.1	-0.2	0.0	0.2	0.3	0.2	0.2	0.0	0.0	0.0	-0.1	-0.1	0.0	0.1	-0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.3	-0.2	
16	0.0	0.1	0.1	0.1	0.1	0.4	1.8	1.9	0.3	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.3	1.9	0.0	
17	0.1	0.2	0.3	0.2	0.3	0.4	4.4	4.9	2.0	1.2	0.3	0.3	0.3	0.4	0.5	0.5	0.3	0.4	0.5	0.6	0.3	0.3	0.3	0.2	0.8	4.9	0.1	
18	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.2	0.5	0.0	
19	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	
20	0.0	0.3	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.4	0.3	-0.4	-0.2	0.3	--	0.4	0.4	0.4	0.3	0.2	0.9	1.7	1.6	3.3	0.5	3.3	-0.4	
21	1.9	3.1	1.3	0.6	0.5	0.4	0.3	0.3	0.3	0.2	0.3	0.4	0.7	1.2	0.6	0.7	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.7	3.1	0.2	
22	0.2	0.1	0.2	0.2	0.3	0.1	0.3	0.3	10.3	4.7	3.8	1.0	1.1	1.0	0.5	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.3	1.1	10.3	0.1	
23	0.2	0.3	0.3	0.5	0.3	0.3	0.3	0.3	0.9	1.1	2.1	8.7	2.8	0.5	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.9	8.7	0.2	
24	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.3	1.9	2.1	4.6	1.1	0.9	0.7	0.4	0.2	0.0	0.3	0.4	0.4	0.2	0.2	0.3	0.3	0.7	4.6	0.0	
25	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.5	0.4	0.1	0.4	--	--	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.2	-1.2	-1.2	-1.2	-0.4	0.5	-1.3	
26	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.0	-1.1	-1.2	-1.2	-1.0	0.0	-0.3	-0.3	-0.5	-0.4	-0.3	-0.5	-1.0	-1.1	-1.0	-1.2	-1.1	-1.2	-0.9	0.0	-1.2	
27	-1.2	-0.9	-0.1	-0.5	-0.9	-0.9	0.3	1.6	3.5	1.8	0.6	1.0	0.0	-0.3	-0.4	-0.6	-0.9	-1.2	-1.3	-1.3	-1.2	-1.2	-1.3	-1.2	-0.3	3.5	-1.3	
28	-1.2	-1.1	-1.2	-1.2	-1.1	-1.1	-1.1	-1.2	-1.0	-0.3	-1.0	-1.4	-1.0	-0.1	-0.7	-1.2	-1.3	-1.3	-1.4	-1.4	-1.3	-1.3	-1.3	-1.3	-1.1	-0.1	-1.4	
29	-1.2	-1.2	-1.2	-1.1	-1.2	-1.1	-1.1	-1.1	-1.2	-1.2	-0.8	-0.4	-0.5	1.2	-0.9	-1.2	-1.4	-1.5	-1.4	-1.4	-1.3	-1.3	-1.2	-1.2	-1.0	1.2	-1.5	
30	-1.1	-1.2	-1.2	-1.1	-1.1	-1.1	-1.1	-1.1	-0.9	-0.8	-0.3	-0.2	-0.6	-0.8	-1.0	-1.2	-1.3	-1.3	-1.3	-1.3	-1.3	-1.2	-1.2	-1.2	-1.0	-0.2	-1.3	
31	-1.2	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-0.3	4.2	2.6	1.1	2.2	0.2	-1.3	-1.3	-1.3	-1.3	-1.3	-1.2	-1.2	-1.1	-1.1	-1.0	-1.0	-0.5	4.2	-1.3	
Avg	0.0	0.2	0.3	0.2	0.1	0.0	0.4	0.5	0.9	0.6	0.6	0.7	0.5	0.3	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.2	--	--	
Max	1.9	3.1	9.2	5.2	1.9	0.5	4.5	5.0	10.3	4.7	4.6	8.7	3.6	2.7	1.1	0.7	0.5	1.3	0.7	0.6	0.9	1.7	1.8	3.3	--	10.3	--	
Min	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.1	-1.2	-1.2	-1.2	-1.0	-1.4	-1.0	-1.3	-1.3	-1.3	-1.4	-1.5	-1.4	-1.4	-1.3	-1.3	-1.3	-1.3	--	--	-1.5	

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant, rolling 8-hour average
"Component, Channel: TableAmbient_Hourly, O3_ppm"
Month: Jan 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	0.035	0.035	0.035	0.035	0.036	0.036	0.037	0.037	0.038	0.038	0.038	0.038	0.038	0.037	0.036	0.035	0.035	0.036	0.037	0.038	0.039	0.041	0.042	0.042	0.037	0.042	0.035	
2	0.043	0.043	0.043	0.042	0.042	0.041	0.041	0.041	0.040	0.040	0.040	0.039	0.039	0.039	0.038	0.037	0.037	0.037	0.036	0.036	0.036	0.037	0.037	0.037	0.039	0.043	0.036	
3	0.036	0.036	0.036	0.036	0.037	0.037	0.039	0.040	0.041	0.043	0.045	0.045	0.045	0.044	0.042	0.041	0.040	0.039	0.038	0.038	0.038	0.038	0.038	0.039	0.040	0.045	0.036	
4	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.040	0.039	
5	0.039	0.039	0.039	0.039	0.040	0.040	0.041	0.041	0.041	0.042	0.042	0.042	0.042	0.041	0.041	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.042	0.039	
6	0.040	0.040	0.039	0.039	0.039	0.039	0.040	0.040	0.041	0.041	0.042	0.042	0.042	0.042	0.041	0.040	0.039	0.038	0.038	0.037	0.037	0.036	0.035	0.035	0.039	0.042	0.035	
7	0.034	0.034	0.033	0.032	0.032	0.033	0.033	0.033	0.034	0.035	0.036	0.036	0.037	0.037	0.037	0.037	0.037	0.037	0.036	0.035	0.033	0.032	0.031	0.030	0.034	0.037	0.030	
8	0.029	0.028	0.027	0.027	0.028	0.028	0.029	0.030	0.030	0.029	0.029	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.029	0.029	0.029	0.030	0.027	
9	0.028	0.027	0.027	0.026	0.026	0.026	0.027	0.027	0.028	0.029	0.030	0.031	0.031	0.032	0.032	0.031	0.030	0.030	0.029	0.029	0.028	0.028	0.028	0.028	0.029	0.032	0.026	
10	0.028	0.028	0.028	0.029	0.029	0.029	0.029	0.030	0.030	0.029	0.029	0.029	0.028	0.028	0.027	0.027	0.025	0.025	0.024	0.024	0.024	0.024	0.024	0.024	0.027	0.030	0.024	
11	0.024	0.025	0.025	0.025	0.025	0.025	0.026	0.028	0.029	0.030	0.031	0.032	0.033	0.034	0.034	0.033	0.033	0.032	0.032	0.031	0.030	0.030	0.030	0.029	0.029	0.034	0.024	
12	0.028	0.027	0.027	0.027	0.027	0.027	0.028	0.028	0.029	0.029	0.030	0.029	0.028	0.027	0.026	0.025	0.023	0.022	0.022	0.022	0.023	0.024	0.024	0.023	0.026	0.030	0.022	
13	0.022	0.021	0.020	0.020	0.019	0.020	0.021	0.023	0.025	0.028	0.030	0.031	0.031	0.031	0.030	0.029	0.027	0.026	0.025	0.024	0.025	0.026	0.027	0.028	0.026	0.031	0.019	
14	0.029	0.030	0.031	0.030	0.030	0.030	0.030	0.031	0.032	0.033	0.034	0.035	0.036	0.036	0.036	0.036	0.035	0.035	0.035	0.035	0.035	0.035	0.034	0.033	0.033	0.036	0.029	
15	0.032	0.031	0.031	0.030	0.030	0.030	0.031	0.032	0.033	0.035	0.035	0.036	0.036	0.036	0.036	0.035	0.034	0.034	0.033	0.033	0.032	0.032	0.032	0.032	0.033	0.036	0.030	
16	0.033	0.033	0.033	0.034	0.034	0.035	0.036	0.037	0.037	0.038	0.038	0.038	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.038	0.038	0.038	0.037	0.036	0.037	0.039	0.033	
17	0.035	0.035	0.035	0.035	0.036	0.036	0.037	0.039	0.040	0.042	0.042	0.043	0.043	0.042	0.041	0.040	0.038	0.037	0.036	0.035	0.034	0.034	0.034	0.034	0.038	0.043	0.034	
18	0.034	0.034	0.034	0.035	0.035	0.035	0.036	0.037	0.037	0.038	0.039	0.040	0.040	0.040	0.039	0.039	0.038	0.038	0.037	0.036	0.036	0.035	0.035	0.034	0.037	0.040	0.034	
19	0.033	0.032	0.031	0.031	0.031	0.032	0.032	0.033	0.034	0.036	0.037	0.038	0.039	0.039	0.039	0.038	0.038	0.038	0.038	0.038	0.039	0.038	0.037	0.036	0.036	0.039	0.031	
20	0.035	0.033	0.032	0.031	0.031	0.032	0.033	0.035	0.037	0.039	0.041	0.041	0.041	0.040	0.039	0.038	0.037	0.037	0.037	0.037	0.037	0.038	0.038	0.037	0.037	0.041	0.031	
21	0.037	0.036	0.035	0.035	0.036	0.037	0.038	0.041	0.044	0.045	0.047	0.047	0.046	0.046	0.045	0.043	0.041	0.040	0.040	0.040	0.040	0.040	0.041	0.041	0.047	0.035		
22	0.041	0.042	0.042	0.042	0.042	0.042	0.042	0.041	0.041	0.041	0.040	0.040	0.039	0.039	0.038	0.036	0.035	0.034	0.034	0.033	0.033	0.032	0.033	0.033	0.038	0.042	0.032	
23	0.034	0.034	0.034	0.035	0.035	0.036	0.037	0.038	0.038	0.039	0.039	0.039	0.040	0.039	0.039	0.039	0.040	0.040	0.040	0.041	0.040	0.040	0.040	0.040	0.038	0.041	0.034	
24	0.040	0.039	0.039	0.039	0.039	0.039	0.040	0.040	0.041	0.041	0.042	0.042	0.042	0.043	0.042	0.042	0.041	0.041	0.040	0.039	0.039	0.038	0.037	0.037	0.040	0.043	0.037	
25	0.037	0.037	0.037	0.037	0.037	0.038	0.038	0.039	0.039	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.039	0.039	0.039	0.040	0.040	0.040	0.040	0.039	0.040	0.037	
26	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.040	0.039	0.039	0.039	0.037	0.035	0.034	0.033	0.033	0.032	0.031	0.031	0.032	0.037	0.040	0.031	
27	0.033	0.033	0.032	0.031	0.031	0.032	0.031	0.030	0.031	0.030	--	--	--	--	--	--	--	--	--	--	--	0.028	0.028	0.027	--	--	--	
28	0.026	0.026	0.025	0.026	0.027	0.028	0.030	0.031	0.033	0.035	0.037	0.038	0.038	0.037	0.036	0.035	0.033	0.032	0.031	0.030	0.029	0.029	0.029	0.029	0.031	0.038	0.025	
29	0.029	0.030	0.030	0.030	0.030	0.030	0.031	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.031	0.031	0.031	0.031	0.032	0.032	0.031	0.031	0.031	0.031	0.032	0.029	
30	0.031	0.030	0.030	0.030	0.030	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.028	0.028	0.027	0.027	0.027	0.026	0.026	0.026	0.026	0.029	0.031	0.026	
31	0.026	0.026	0.026	0.026	0.026	0.027	0.028	0.029	0.029	0.030	0.030	0.030	0.030	0.029	0.029	0.028	0.026	0.025	0.025	0.024	0.023	0.023	0.023	0.023	0.027	0.030	0.023	
Avg	0.033	0.033	0.033	0.033	0.033	0.033	0.034	0.035	0.035	0.036	0.037	0.037	0.037	0.037	0.036	0.036	0.035	0.034	0.034	0.034	0.034	0.033	0.033	0.033	0.035	--	--	
Max	0.043	0.043	0.043	0.042	0.042	0.042	0.042	0.041	0.044	0.045	0.047	0.047	0.046	0.046	0.045	0.043	0.041	0.041	0.040	0.041	0.040	0.041	0.042	0.042	--	0.047	--	
Min	0.022	0.021	0.020	0.020	0.019	0.020	0.021	0.023	0.025	0.028	0.029	0.029	0.028	0.027	0.026	0.025	0.023	0.022	0.022	0.022	0.023	0.023	0.023	0.023	-	--	0.019	

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant, rolling 8-hour average
"Component, Channel: TableAmbient_Hourly, O3_ppm"
Month: Feb 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.024	0.025	0.026	0.028	0.030	0.032	0.034	0.034	0.035	0.035	0.035	0.035	0.034	0.032	0.031	0.031	0.032	0.032	0.033	0.034	0.035	0.037	0.038	0.038	0.033	0.038	0.024
2	0.038	0.037	0.037	0.036	0.035	0.035	0.035	0.035	0.036	0.037	0.038	0.040	0.040	0.040	0.040	0.039	0.039	0.038	0.037	0.036	0.035	0.035	0.035	0.034	0.037	0.040	0.034
3	0.034	0.033	0.033	0.033	0.034	0.034	0.036	0.037	0.039	0.040	0.042	0.043	0.043	0.044	0.043	0.043	0.042	0.042	0.042	0.041	0.041	0.041	0.040	0.040	0.039	0.044	0.033
4	0.038	0.037	0.036	0.035	0.035	0.037	0.038	0.040	0.043	0.046	0.050	0.051	0.053	0.053	0.052	0.051	0.049	0.047	0.044	0.042	0.040	0.038	0.037	0.035	0.043	0.053	0.035
5	0.034	0.034	0.033	0.032	0.032	0.032	0.033	0.035	0.038	0.040	0.041	0.041	0.041	0.041	0.042	0.041	0.040	0.040	0.040	0.039	0.039	0.039	0.039	0.039	0.038	0.042	0.032
6	0.038	0.038	0.037	0.037	0.036	0.037	0.038	0.039	0.040	0.041	0.043	0.044	0.044	0.044	0.043	0.043	0.042	0.041	0.041	0.040	0.040	0.040	0.040	0.040	0.040	0.044	0.036
7	0.040	0.040	0.039	0.039	0.040	0.041	0.042	0.043	0.044	0.046	0.048	0.049	0.050	0.051	0.051	0.050	0.049	0.048	0.047	0.046	0.045	0.043	0.043	0.042	0.045	0.051	0.039
8	0.042	0.042	0.042	0.042	0.042	0.043	0.044	0.046	0.048	0.050	0.052	0.053	0.055	0.054	0.053	0.050	0.048	0.045	0.043	0.041	0.038	0.036	0.035	0.035	0.045	0.055	0.035
9	0.034	0.033	0.032	0.032	0.032	0.032	0.033	0.035	0.037	0.040	0.043	0.045	0.047	0.047	0.046	0.044	0.042	0.040	0.039	0.037	0.035	0.034	0.034	0.034	0.038	0.047	0.032
10	0.033	0.032	0.032	0.032	0.032	0.033	0.035	0.037	0.039	0.042	0.045	0.047	0.049	0.050	0.050	0.050	0.050	0.049	0.047	0.046	0.044	0.043	0.042	0.041	0.042	0.050	0.032
11	0.041	0.041	0.041	0.042	0.043	0.044	0.045	0.046	0.047	0.048	0.049	0.049	0.049	0.049	0.048	0.047	0.046	0.044	0.043	0.042	0.041	0.040	0.039	0.039	0.044	0.049	0.039
12	0.039	0.039	0.039	0.040	0.040	0.041	0.043	0.044	0.046	0.046	0.047	0.047	0.047	0.046	0.046	0.045	0.044	0.044	0.044	0.044	0.044	0.044	0.045	0.045	0.044	0.047	0.039
13	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.045	0.046	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.046	0.046	0.046	0.046	0.045	0.045	0.044	0.046	0.047	0.044
14	0.044	0.044	0.043	0.043	0.044	0.045	0.046	0.047	0.048	0.048	0.050	0.049	0.048	0.047	0.046	0.044	0.043	0.042	0.041	0.040	0.040	0.039	0.039	0.038	0.044	0.050	0.038
15	0.037	0.036	0.036	0.037	0.038	0.039	0.041	0.043	0.045	0.047	0.050	0.051	0.051	0.052	0.052	0.051	0.051	0.050	0.049	0.048	0.046	0.045	0.044	0.043	0.045	0.052	0.036
16	0.042	0.040	0.039	0.039	0.040	0.040	0.041	0.043	0.044	0.047	0.048	0.049	0.050	0.050	0.049	0.048	0.047	0.046	0.045	0.044	0.043	0.043	0.043	0.044	0.045	0.050	0.039
17	0.044	0.044	0.045	0.046	0.046	0.046	0.047	0.047	0.048	0.049	0.049	0.050	0.050	0.051	0.050	0.050	0.049	0.048	0.048	0.047	0.047	0.046	0.046	0.046	0.047	0.051	0.044
18	0.045	0.044	0.043	0.044	0.043	0.044	0.044	0.046	0.048	0.050	0.052	0.053	0.054	0.054	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045	0.048	0.054	0.043
19	0.043	0.042	0.042	0.042	0.042	0.043	0.044	0.046	0.048	0.051	0.053	0.054	0.054	0.054	0.054	0.053	0.053	0.052	0.051	0.051	0.050	0.050	0.050	0.050	0.049	0.054	0.042
20	0.050	0.049	0.048	0.047	0.048	0.049	0.049	0.050	0.050	0.052	0.054	0.054	0.053	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045	0.045	0.043	0.049	0.054	0.043
21	0.042	0.040	0.040	0.040	0.040	0.040	0.041	0.042	0.043	0.044	0.044	0.044	0.043	0.043	0.043	0.043	0.043	0.043	0.042	0.042	0.041	0.041	0.041	0.040	0.042	0.044	0.040
22	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
23	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.041	0.041	0.041	0.041	0.042	0.042	0.041	0.041	0.040	0.040	0.039	0.039	0.040	0.041	0.041	0.041	0.040	0.040	0.039
24	0.041	0.042	0.043	0.043	0.043	0.043	0.044	0.045	0.045	0.045	0.046	0.046	0.045	0.043	0.042	0.040	0.040	0.038	0.038	0.037	0.037	0.038	0.038	0.039	0.042	0.046	0.037
25	0.039	0.038	0.038	0.039	0.041	0.042	0.043	0.044	0.046	0.048	0.049	0.050	0.050	0.050	0.049	0.049	0.049	0.048	0.046	0.045	0.044	0.043	0.042	0.041	0.045	0.050	0.038
26	0.040	0.039	0.039	0.040	0.040	0.041	0.042	0.044	0.045	0.047	0.048	0.049	0.050	0.051	0.051	0.051	0.051	0.050	0.049	0.048	0.047	0.046	0.045	0.044	0.046	0.051	0.039
27	0.044	0.043	0.043	0.044	0.045	0.046	0.047	0.048	0.049	0.050	0.051	0.051	0.052	0.052	0.051	0.051	0.051	0.051	0.050	0.050	0.049	0.048	0.048	0.047	0.048	0.052	0.043
28	0.046	0.045	0.044	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.042	0.042	0.041	0.041	0.040	0.039	0.039	0.039	0.039	0.039	0.038	0.042	0.046	0.038
Avg	0.040	0.039	0.039	0.039	0.040	0.040	0.041	0.042	0.044	0.045	0.046	0.047	0.047	0.047	0.047	0.046	0.045	0.044	0.044	0.043	0.042	0.042	0.041	0.041	0.043	--	--
Max	0.050	0.049	0.048	0.047	0.048	0.049	0.049	0.050	0.050	0.052	0.054	0.054	0.055	0.054	0.054	0.053	0.053	0.052	0.051	0.051	0.050	0.050	0.050	0.050	--	0.055	--
Min	0.024	0.025	0.026	0.028	0.030	0.032	0.033	0.034	0.035	0.035	0.035	0.035	0.034	0.032	0.031	0.031	0.032	0.032	0.033	0.034	0.035	0.034	0.034	0.034	--	--	0.024

SAROAD for Resolution, East_Plant, rolling 8-hour average
"Component, Channel: TableAmbient_Hourly, O3_ppm"
Month: Mar 2015

Hour of day																												
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	0.037	0.037	0.037	0.038	0.038	0.038	0.038	0.039	0.040	0.041	0.041	0.041	0.041	0.040	0.040	0.040	0.039	0.039	0.038	0.037	0.037	0.036	0.036	0.035	0.039	0.041	0.035	
2	0.035	0.036	0.036	0.036	0.037	0.037	0.038	0.038	0.039	0.040	0.041	0.042	0.042	0.043	0.042	0.042	0.041	0.040	0.038	0.037	0.035	0.035	0.034	0.033	0.038	0.043	0.033	
3	0.032	0.032	0.033	0.033	0.035	0.036	0.038	0.040	0.042	0.044	0.045	0.045	0.046	0.046	0.045	0.044	0.043	0.042	0.041	0.040	0.039	0.037	0.037	0.036	0.040	0.046	0.032	
4	0.035	0.034	0.035	0.036	0.037	0.038	0.039	0.040	0.042	0.044	0.045	0.046	0.046	0.046	0.045	0.045	0.044	0.043	0.043	0.043	0.043	0.044	0.045	0.046	0.042	0.046	0.034	
5	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.048	0.048	0.048	0.047	0.047	0.047	0.046	0.045	0.045	0.044	0.044	0.044	0.044	0.044	0.043	0.046	0.048	0.043	
6	0.043	0.043	0.043	0.043	0.044	0.045	0.045	0.046	0.047	0.048	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.048	0.048	0.047	0.049	0.043	
7	0.047	0.046	0.045	0.044	0.043	0.043	0.044	0.044	0.045	0.045	0.046	0.047	0.047	0.047	0.047	0.046	0.045	0.045	0.044	0.045	0.044	0.043	0.042	0.041	0.045	0.047	0.041	
8	0.041	0.040	0.039	0.038	0.039	0.040	0.042	0.043	0.045	0.048	0.050	0.052	0.054	0.055	0.056	0.056	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.057	0.038	
9	0.048	0.046	0.045	0.045	0.046	0.047	0.047	0.048	0.050	0.052	0.053	0.054	0.054	0.054	0.054	0.053	0.052	0.051	0.049	0.047	0.046	0.045	0.044	0.044	0.049	0.054	0.044	
10	0.043	0.043	0.043	0.044	0.044	0.045	0.046	0.048	0.049	0.051	0.053	0.055	0.056	0.057	0.057	0.056	0.056	0.055	0.054	0.053	0.052	0.050	0.050	0.049	0.050	0.057	0.043	
11	0.048	0.047	0.046	0.046	0.047	0.048	0.049	0.050	0.052	0.053	0.054	0.054	0.054	0.053	0.052	0.051	0.049	0.048	0.047	0.047	0.046	0.047	0.047	0.047	0.049	0.054	0.046	
12	0.047	0.047	0.047	0.047	0.048	0.048	0.049	0.050	0.051	0.053	0.053	0.054	0.054	0.054	0.054	0.053	0.053	0.053	0.052	0.052	0.052	0.052	0.051	0.051	0.051	0.054	0.047	
13	0.051	0.051	0.050	0.050	0.050	0.051	0.051	0.051	0.052	0.052	0.053	0.053	0.053	0.053	0.053	0.053	0.052	0.052	0.051	0.051	0.050	0.049	0.048	0.048	0.051	0.053	0.048	
14	0.047	0.047	0.046	0.047	0.047	0.048	0.049	0.049	0.050	0.051	0.051	0.051	0.050	0.049	0.048	0.047	0.045	0.045	0.044	0.043	0.043	0.043	0.043	0.043	0.047	0.051	0.043	
15	0.043	0.044	0.044	0.044	0.045	0.046	0.047	0.049	0.050	0.051	0.052	0.053	0.054	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.050	0.054	0.043	
16	0.052	0.052	0.051	0.050	0.050	0.049	0.048	0.048	0.048	0.048	0.048	0.048	0.047	0.047	0.046	0.044	0.043	0.043	0.041	0.040	0.039	0.039	0.038	0.039	0.046	0.052	0.038	
17	0.038	0.038	0.038	0.039	0.040	0.041	0.042	0.044	0.046	0.048	0.050	0.053	0.056	0.058	0.059	0.059	0.058	0.058	0.056	0.054	0.052	0.051	0.050	0.050	0.049	0.059	0.038	
18	0.049	0.047	0.047	0.047	0.047	0.046	0.046	0.046	0.047	0.048	0.048	0.048	0.048	0.047	0.046	0.044	0.042	0.040	0.039	0.037	0.035	0.035	0.036	0.037	0.044	0.049	0.035	
19	0.038	0.040	0.041	0.042	0.044	0.045	0.046	0.047	0.048	0.049	0.050	0.051	0.052	0.052	0.052	0.052	0.051	0.049	0.047	0.044	0.041	0.040	0.038	0.037	0.046	0.052	0.037	
20	0.035	0.035	0.036	0.038	0.040	0.041	0.043	0.045	0.047	0.049	0.050	0.052	0.052	0.052	0.050	0.049	0.048	0.047	0.045	0.043	0.043	0.042	0.042	0.042	0.044	0.052	0.035	
21	0.042	0.042	0.043	0.044	0.045	0.047	0.048	0.050	0.053	0.056	0.057	0.060	0.061	0.062	0.063	0.064	0.064	0.063	0.062	0.061	0.061	0.060	0.059	0.059	0.055	0.064	0.042	
22	0.056	0.056	0.055	0.054	0.053	0.053	0.052	0.052	0.054	0.055	0.056	0.056	0.056	0.055	0.055	0.054	0.054	0.053	0.052	0.051	0.050	0.050	0.049	0.049	0.053	0.056	0.049	
23	0.047	0.046	0.045	0.045	0.045	0.046	0.048	0.049	0.051	0.053	0.054	0.055	0.055	0.055	0.054	0.053	0.052	0.050	0.049	0.047	0.046	0.045	0.045	0.044	0.049	0.055	0.044	
24	0.043	0.043	0.043	0.044	0.045	0.047	0.048	0.049	0.052	0.054	0.055	0.057	0.057	0.058	0.057	0.057	0.056	0.055	0.054	0.053	0.051	0.050	0.049	0.049	0.051	0.058	0.043	
25	0.048	0.047	0.047	0.047	0.049	0.046	0.046	0.047	0.049	0.050	0.052	0.053	0.053	0.057	0.058	0.058	0.056	0.054	0.052	0.050	0.049	0.048	0.049	0.050	0.051	0.058	0.046	
26	0.051	0.053	0.055	0.055	0.056	0.056	0.055	0.054	0.054	0.054	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.046	0.045	0.044	0.044	0.044	0.043	0.043	0.050	0.056	0.043	
27	0.043	0.042	0.042	0.042	0.043	0.044	0.045	0.047	0.048	0.050	0.053	0.057	0.059	0.061	0.061	0.062	0.062	0.062	0.061	0.060	0.060	0.059	0.059	0.058	0.053	0.062	0.042	
28	0.057	0.056	0.055	0.055	0.054	0.054	0.054	0.055	0.057	0.058	0.059	0.060	0.061	0.061	0.061	0.061	0.061	0.060	0.058	0.057	0.056	0.055	0.055	0.054	0.057	0.061	0.054	
29	0.054	0.053	0.053	0.054	0.053	0.053	0.053	0.053	0.054	0.055	0.055	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.055	0.054	0.055	0.056	0.053	
30	0.053	0.052	0.051	0.051	0.051	0.052	0.053	0.053	0.054	0.055	0.056	0.056	0.056	0.056	0.056	0.055	0.055	0.054	0.054	0.053	0.054	0.053	0.053	0.053	0.054	0.056	0.051	
31	0.052	0.051	0.051	0.051	0.050	0.050	0.050	0.051	0.053	0.055	0.055	0.056	0.056	0.056	0.056	0.056	0.055	0.053	0.051	0.049	0.047	0.046	0.044	0.042	0.051	0.056	0.042	
Avg	0.045	0.045	0.045	0.045	0.046	0.046	0.047	0.048	0.049	0.050	0.051	0.052	0.052	0.053	0.052	0.052	0.051	0.050	0.049	0.048	0.047	0.047	0.046	0.046	0.048	--	--	
Max	0.057	0.056	0.055	0.055	0.056	0.056	0.055	0.055	0.057	0.058	0.059	0.060	0.061	0.062	0.063	0.064	0.064	0.063	0.062	0.061	0.061	0.060	0.059	0.059	--	0.064	--	
Min	0.032	0.032	0.033	0.033	0.035	0.036	0.038	0.038	0.039	0.040	0.041	0.041	0.041	0.040	0.040	0.040	0.039	0.039	0.038	0.037	0.035	0.035	0.034	0.033	--	--	0.032	

SAROAD for Resolution, East_Plant
"Component, Channel: TableAmbient_Hourly, O3_ppm"
Month: Jan 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.038	0.031	0.035	0.036	0.036	0.036	0.035	0.035	0.034	0.033	0.037	0.039	0.040	0.041	0.040	0.039	0.037	0.035	0.035	0.035	0.033	0.034	0.036	0.038	0.036	0.041	0.031
2	0.040	0.043	0.044	0.044	0.044	0.043	0.043	0.042	0.041	0.041	0.040	0.040	0.040	0.041	0.041	0.039	0.038	0.038	0.038	0.038	0.037	0.036	0.034	0.036	0.040	0.044	0.034
3	0.036	0.036	0.036	0.040	0.039	0.036	0.034	0.036	0.032	0.035	0.040	0.042	0.044	0.046	0.047	0.047	0.046	0.046	0.044	0.038	0.037	0.036	0.036	0.038	0.039	0.047	0.032
4	0.039	0.039	0.039	0.039	0.039	0.039	0.038	0.039	0.039	0.039	0.039	0.038	0.041	0.042	0.041	0.041	0.041	0.039	0.039	0.040	0.041	0.040	0.039	0.039	0.040	0.042	0.038
5	0.038	0.039	0.040	0.039	0.039	0.039	0.040	0.040	0.039	0.039	0.040	0.041	0.042	0.043	0.043	0.043	0.041	0.041	0.040	0.040	0.039	0.039	0.040	0.039	0.040	0.043	0.038
6	0.040	0.041	0.041	0.040	0.039	0.039	0.040	0.040	0.040	0.038	0.038	0.040	0.041	0.043	0.044	0.044	0.044	0.042	0.040	0.038	0.039	0.038	0.038	0.037	0.040	0.044	0.037
7	0.037	0.038	0.035	0.034	0.033	0.033	0.033	0.033	0.031	0.031	0.033	0.034	0.035	0.036	0.036	0.037	0.038	0.038	0.037	0.038	0.037	0.037	0.037	0.036	0.035	0.038	0.031
8	0.034	0.031	0.029	0.027	0.027	0.027	0.027	0.028	0.027	0.027	0.029	0.030	0.031	0.032	0.032	0.029	0.026	0.027	0.029	0.031	0.032	0.032	0.030	0.029	0.029	0.034	0.026
9	0.030	0.030	0.029	0.028	0.028	0.027	0.026	0.026	0.025	0.025	0.026	0.027	0.029	0.030	0.032	0.033	0.032	0.031	0.032	0.032	0.032	0.029	0.028	0.027	0.029	0.033	0.025
10	0.027	0.027	0.027	0.028	0.028	0.029	0.029	0.029	0.029	0.028	0.029	0.030	0.031	0.031	0.031	0.028	0.028	0.027	0.026	0.026	0.027	0.025	0.027	0.019	0.028	0.031	0.019
11	0.023	0.021	0.023	0.025	0.026	0.026	0.025	0.026	0.025	0.025	0.025	0.024	0.027	0.033	0.038	0.035	0.033	0.033	0.034	0.034	0.032	0.030	0.032	0.033	0.029	0.038	0.021
12	0.030	0.028	0.028	0.028	0.029	0.032	0.025	0.023	0.026	0.028	0.028	0.028	0.030	0.032	0.031	0.029	0.030	0.031	0.023	0.020	0.019	0.021	0.024	0.018	0.027	0.032	0.018
13	0.022	0.025	0.025	0.031	0.022	0.021	0.015	0.017	0.013	0.016	0.024	0.025	0.028	0.032	0.032	0.034	0.033	0.035	0.031	0.026	0.024	0.026	0.022	0.020	0.025	0.035	0.013
14	0.023	0.025	0.029	0.031	0.034	0.031	0.031	0.031	0.033	0.028	0.026	0.027	0.032	0.035	0.039	0.038	0.039	0.039	0.032	0.033	0.036	0.033	0.034	0.036	0.032	0.039	0.023
15	0.036	0.036	0.036	0.036	0.031	0.028	0.028	0.028	0.028	0.030	0.031	0.033	0.035	--	0.038	0.038	0.037	0.036	0.036	0.036	0.034	0.033	0.032	0.031	0.033	0.038	0.028
16	0.032	0.033	0.033	0.032	0.031	0.032	0.035	0.036	0.035	0.034	0.036	0.036	0.037	0.039	0.041	0.040	0.040	0.038	0.038	0.039	0.040	0.041	0.040	0.039	0.036	0.041	0.031
17	0.037	0.036	0.036	0.035	0.037	0.034	0.033	0.033	0.034	0.037	0.038	0.041	0.042	0.042	0.044	0.044	0.045	0.044	0.043	0.038	0.035	0.033	0.036	0.034	0.038	0.045	0.033
18	0.034	0.035	0.032	0.035	0.034	0.034	0.035	0.035	0.035	0.035	0.035	0.035	0.038	0.042	0.041	0.038	0.043	0.041	0.039	0.036	0.037	0.038	0.037	0.037	0.037	0.043	0.032
19	0.036	0.037	0.034	0.033	0.032	0.031	0.032	0.031	0.029	0.029	0.032	0.035	0.034	0.038	0.039	0.040	0.040	0.040	0.039	0.039	0.036	0.036	0.038	0.037	0.035	0.040	0.029
20	0.041	0.039	0.040	0.041	0.034	0.030	0.029	0.027	0.027	0.031	0.033	0.035	0.040	0.043	0.044	0.044	0.043	0.041	0.038	0.034	0.034	0.034	0.037	0.038	0.037	0.044	0.027
21	0.039	0.039	0.039	0.039	0.037	0.038	0.030	0.033	0.036	0.033	0.035	0.045	0.045	0.050	0.054	0.053	0.050	0.042	0.038	0.040	0.042	0.040	0.039	0.039	0.041	0.054	0.030
22	0.039	0.040	0.040	0.041	0.042	0.044	0.044	0.042	0.041	0.040	0.041	0.042	0.042	0.041	0.040	0.040	0.040	0.038	0.037	0.037	0.036	0.034	0.029	0.030	0.039	0.044	0.029
23	0.032	0.034	0.034	0.034	0.034	0.034	0.034	0.035	0.035	0.036	0.037	0.038	0.040	0.041	0.040	0.039	0.039	0.037	0.039	0.042	0.039	0.040	0.041	0.041	0.037	0.042	0.032
24	0.041	0.040	0.041	0.040	0.039	0.040	0.039	0.038	0.039	0.039	0.038	0.039	0.041	0.043	0.045	0.042	0.043	0.043	0.042	0.042	0.042	0.041	0.040	0.037	0.041	0.045	0.037
25	0.037	0.037	0.037	0.037	0.034	0.036	0.038	0.038	0.038	0.038	0.038	0.038	0.040	0.040	0.041	0.042	0.044	0.040	0.038	0.039	0.039	0.041	0.040	0.040	0.039	0.044	0.034
26	0.038	0.040	0.040	0.040	0.040	0.040	0.039	0.040	0.039	0.038	0.039	0.040	0.039	0.038	0.039	0.040	0.041	0.041	0.040	0.037	0.037	0.035	0.025	0.025	0.038	0.041	0.025
27	0.033	0.036	0.034	0.032	0.030	0.033	0.034	0.030	0.032	0.032	0.029	0.033	0.031	0.032	0.027	--	--	--	--	--	--	--	--	0.031	--	--	--
28	0.027	0.029	0.025	0.026	0.028	0.027	0.027	0.022	0.023	0.025	0.029	0.034	0.039	0.040	0.039	0.039	0.039	0.038	0.037	0.034	0.030	0.030	0.031	0.028	0.031	0.040	0.022
29	0.028	0.029	0.029	0.030	0.030	0.029	0.029	0.031	0.031	0.031	0.030	0.031	0.032	0.035	0.032	0.033	0.033	0.030	0.027	0.032	0.034	0.033	0.031	0.031	0.031	0.035	0.027
30	0.031	0.031	0.031	0.030	0.030	0.030	0.030	0.030	0.029	0.029	0.029	0.029	0.029	0.030	0.030	0.030	0.029	0.029	0.029	0.029	0.028	0.026	0.026	0.027	0.029	0.031	0.026
31	0.027	0.026	0.026	0.027	0.026	0.025	0.025	0.026	0.026	0.027	0.027	0.029	0.030	0.031	0.033	0.033	0.032	0.027	0.027	0.027	0.026	0.025	0.026	0.021	0.027	0.033	0.021
Avg	0.034	0.034	0.034	0.034	0.033	0.033	0.032	0.032	0.032	0.032	0.033	0.035	0.036	0.038	0.038	0.038	0.038	0.037	0.036	0.035	0.035	0.034	0.033	0.033	0.035	--	--
Max	0.041	0.043	0.044	0.044	0.044	0.044	0.044	0.042	0.041	0.041	0.041	0.045	0.045	0.050	0.054	0.053	0.050	0.046	0.044	0.042	0.042	0.041	0.041	0.041	--	0.054	--
Min	0.022	0.021	0.023	0.025	0.022	0.021	0.015	0.017	0.013	0.016	0.024	0.024	0.027	0.030	0.027	0.028	0.026	0.027	0.023	0.020	0.019	0.021	0.022	0.018	--	--	0.013

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: TableAmbient_Hourly, O3_ppm"
Month: Feb 2015

Hour of day

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.024	0.024	0.017	0.021	0.023	0.025	0.030	0.031	0.031	0.033	0.033	0.035	0.038	0.039	0.033	0.034	0.034	0.034	0.032	0.028	0.025	0.028	0.035	0.038	0.030	0.039	0.017
2	0.038	0.039	0.039	0.040	0.037	0.037	0.036	0.037	0.035	0.033	0.031	0.032	0.036	0.039	0.040	0.041	0.044	0.044	0.043	0.037	0.035	0.034	0.035	0.036	0.037	0.044	0.031
3	0.035	0.036	0.036	0.035	0.033	0.032	0.032	0.033	0.031	0.034	0.037	0.038	0.039	0.042	0.043	0.045	0.045	0.045	0.044	0.044	0.040	0.042	0.038	0.041	0.038	0.045	0.031
4	0.042	0.043	0.043	0.041	0.037	0.038	0.035	0.031	0.030	0.032	0.038	0.043	0.047	0.050	0.053	0.054	0.055	0.057	0.053	0.052	0.049	0.044	0.042	0.038	0.044	0.057	0.030
5	0.037	0.038	0.039	0.036	0.032	0.031	0.031	0.031	0.032	0.034	--	--	0.035	0.038	0.043	0.044	0.044	0.042	0.041	0.041	0.040	0.039	0.039	0.039	0.038	0.044	0.031
6	0.040	0.039	0.039	0.039	0.039	0.038	0.037	0.035	0.035	0.035	0.035	0.039	0.041	0.044	0.046	0.046	0.047	0.045	0.044	0.041	0.039	0.041	0.042	0.040	0.040	0.047	0.035
7	0.040	0.040	0.041	0.041	0.039	0.039	0.040	0.041	0.035	0.036	0.044	0.045	0.048	0.048	0.048	0.049	0.050	0.051	0.053	0.054	0.054	0.047	0.043	0.040	0.044	0.054	0.035
8	0.043	0.042	0.044	0.044	0.043	0.041	0.041	0.039	0.039	0.042	0.043	0.045	0.050	0.052	0.054	0.055	0.057	0.056	0.056	0.057	0.048	0.040	0.035	0.034	0.046	0.057	0.034
9	0.037	0.037	0.037	0.034	0.034	0.034	0.031	0.030	0.029	0.029	0.033	0.034	0.037	0.042	0.046	0.049	0.050	0.050	0.051	0.048	0.038	0.033	0.035	0.034	0.038	0.051	0.029
10	0.035	0.035	0.035	0.035	0.032	0.032	0.031	0.029	0.028	0.030	0.036	0.038	0.041	0.044	0.047	0.052	0.050	0.051	0.052	0.052	0.050	0.049	0.047	0.045	0.041	0.052	0.028
11	0.043	0.040	0.039	0.039	0.038	0.043	0.041	0.043	0.043	0.042	0.044	0.048	0.047	0.050	0.051	0.051	0.051	0.049	0.047	0.046	0.045	0.043	0.041	0.043	0.044	0.051	0.038
12	0.041	0.039	0.039	0.038	0.039	0.037	0.038	0.040	0.041	0.042	0.042	0.045	0.046	0.049	0.051	0.050	0.048	0.045	0.044	0.043	0.043	0.043	0.044	0.045	0.043	0.051	0.037
13	0.044	0.045	0.045	0.045	0.045	0.044	0.043	0.043	0.043	0.044	0.045	0.045	0.046	0.047	0.048	0.049	0.049	0.049	0.045	0.042	0.048	0.048	0.046	0.045	0.046	0.049	0.042
14	0.044	0.046	0.046	0.044	0.043	0.043	0.044	0.044	0.044	0.037	0.047	0.050	0.050	0.051	0.051	0.052	0.050	0.047	0.044	0.042	0.041	0.040	0.040	0.040	0.045	0.052	0.037
15	0.042	0.039	0.036	0.038	0.038	0.036	0.034	0.035	0.034	0.036	0.043	0.047	0.048	0.049	0.051	0.053	0.052	0.053	0.054	0.052	0.050	0.048	0.048	0.048	0.044	0.054	0.034
16	0.047	0.047	0.043	0.038	0.042	0.041	0.041	0.038	0.033	0.040	0.041	0.042	0.047	0.049	0.053	0.051	0.052	0.050	0.049	0.048	0.047	0.044	0.045	0.044	0.045	0.053	0.033
17	0.043	0.041	0.041	0.043	0.045	0.047	0.047	0.046	0.046	0.045	0.046	0.047	0.048	0.050	0.050	0.051	0.052	0.052	0.051	0.051	0.050	0.045	0.046	0.046	0.047	0.052	0.041
18	0.047	0.047	0.046	0.046	0.045	0.046	0.043	0.042	0.040	0.041	0.047	0.045	0.049	0.050	0.054	0.055	0.058	0.057	0.055	0.053	0.048	0.049	0.050	0.049	0.048	0.058	0.040
19	0.048	0.045	0.046	0.045	0.045	0.043	0.042	0.033	0.037	0.043	0.048	0.048	0.051	0.054	0.057	--	0.056	0.056	0.054	0.052	0.052	0.052	0.052	0.050	0.048	0.057	0.033
20	0.050	0.050	0.050	0.048	0.050	0.048	0.051	0.050	0.041	0.043	0.048	0.054	0.054	0.054	0.055	0.055	0.055	0.055	0.055	0.052	0.049	0.048	0.046	0.048	0.050	0.050	0.041
21	0.047	0.045	0.045	0.042	0.040	0.040	0.037	0.039	0.034	0.042	0.043	0.044	0.045	0.045	0.044	0.044	0.042	0.043	0.042	0.043	0.043	0.043	0.043	0.043	0.042	0.047	0.034
22	0.041	0.040	0.038	0.039	0.040	0.042	0.041	0.040	0.039	0.038	0.039	0.039	0.040	0.042	0.041	0.041	0.040	0.040	0.040	0.040	0.040	0.040	0.039	0.040	0.040	0.042	0.038
23	0.040	0.041	0.041	0.041	0.040	0.040	0.040	0.039	0.039	0.039	0.040	0.041	0.042	0.042	0.041	0.042	0.042	0.042	0.041	0.041	0.040	0.039	0.040	0.040	0.041	0.042	0.039
24	0.036	0.038	0.042	0.045	0.046	0.041	0.037	0.042	0.046	0.044	0.044	0.045	0.047	0.045	0.044	0.043	0.049	0.048	0.045	0.035	0.034	0.035	0.035	0.036	0.042	0.049	0.034
25	0.040	0.041	0.037	0.038	0.039	0.039	0.038	0.038	0.031	0.045	0.046	0.048	0.048	0.048	0.049	0.050	0.051	0.053	0.051	0.048	0.047	0.043	0.050	0.047	0.044	0.053	0.031
26	0.043	0.042	0.038	0.040	0.039	0.039	0.038	0.038	0.039	0.044	0.044	0.044	0.046	0.047	0.048	0.050	0.052	0.052	0.051	0.052	0.052	0.051	0.048	0.047	0.045	0.052	0.038
27	0.046	0.045	0.045	0.043	0.043	0.043	0.045	0.041	0.042	0.044	0.049	0.051	0.051	0.052	0.052	0.050	0.052	0.052	0.053	0.052	0.051	0.049	0.050	0.050	0.048	0.053	0.041
28	0.049	0.049	0.048	0.046	0.045	0.044	0.043	0.043	0.043	0.042	0.041	0.042	0.043	0.043	0.044	0.044	0.043	0.043	0.041	0.041	0.040	0.039	0.038	0.039	0.043	0.049	0.038
Avg	0.042	0.041	0.041	0.040	0.040	0.039	0.039	0.038	0.037	0.039	0.042	0.043	0.045	0.047	0.048	0.048	0.049	0.049	0.048	0.046	0.044	0.043	0.043	0.042	0.043	--	--
Max	0.050	0.050	0.050	0.048	0.050	0.048	0.051	0.050	0.046	0.045	0.049	0.054	0.054	0.054	0.057	0.055	0.058	0.057	0.056	0.057	0.054	0.052	0.052	0.050	--	0.058	--
Min	0.024	0.024	0.017	0.021	0.023	0.025	0.030	0.029	0.028	0.029	0.031	0.032	0.035	0.038	0.033	0.034	0.034	0.034	0.032	0.028	0.025	0.028	0.035	0.034	--	--	0.017

-- Indicates Invalid Data

SAROAD for Resolution, East_Plant
"Component, Channel: TableAmbient_Hourly, O3_ppm"
Month: Mar 2015

Hour of day																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.038	0.037	0.039	0.039	0.040	0.039	0.036	0.031	0.036	0.039	0.041	0.041	0.041	0.042	0.042	0.041	0.041	0.041	0.040	0.039	0.039	0.039	0.038	0.037	0.039	0.042	0.031
2	0.036	0.035	0.035	0.035	0.035	0.035	0.035	0.037	0.037	0.037	0.039	0.038	0.038	0.041	0.041	0.044	0.044	0.045	0.045	0.043	0.039	0.039	0.037	0.035	0.039	0.045	0.035
3	0.034	0.034	0.034	0.030	0.034	0.031	0.031	0.030	0.032	0.039	0.041	0.042	0.044	0.044	0.045	0.046	0.047	0.047	0.046	0.046	0.046	0.040	0.038	0.035	0.039	0.047	0.030
4	0.039	0.038	0.036	0.037	0.035	0.034	0.032	0.030	0.033	0.041	0.043	0.044	0.045	0.040	--	0.048	0.048	0.049	0.048	0.046	0.042	0.037	0.039	0.041	0.040	0.049	0.030
5	0.045	0.047	0.045	0.047	0.047	0.048	0.048	0.048	0.047	0.046	0.045	0.047	0.048	0.048	0.049	0.049	0.048	0.049	0.045	0.043	0.045	0.046	0.045	0.044	0.047	0.049	0.043
6	0.044	0.044	0.044	0.044	0.043	0.043	0.042	0.042	0.043	0.045	0.045	0.048	0.050	0.049	0.049	0.049	0.050	0.050	0.050	0.047	0.047	0.050	0.051	0.049	0.047	0.051	0.042
7	0.049	0.050	0.051	0.049	0.044	0.044	0.044	0.043	0.043	0.042	0.043	0.044	0.044	0.045	0.047	0.049	0.049	0.049	0.048	0.045	0.047	0.045	0.042	0.040	0.046	0.051	0.040
8	0.045	--	0.050	0.039	0.038	0.038	0.038	0.037	0.037	0.039	0.042	0.044	0.047	0.050	0.052	0.053	0.055	0.057	0.060	0.059	0.057	0.056	0.055	0.054	0.048	0.060	0.037
9	0.053	0.051	0.050	0.050	0.048	0.046	0.044	0.041	0.038	0.045	0.051	0.053	0.054	0.054	0.053	0.054	0.054	0.056	0.056	0.054	0.053	0.049	0.048	0.047	0.050	0.056	0.038
10	0.047	0.042	0.040	0.043	0.044	0.043	0.043	0.042	0.044	0.045	0.046	0.049	0.050	0.052	0.053	0.056	0.058	0.059	0.059	0.060	0.058	0.050	0.049	0.051	0.049	0.060	0.040
11	0.053	0.053	0.051	0.048	0.047	0.045	0.045	0.044	0.046	0.046	0.051	0.053	0.055	0.055	0.054	0.056	0.056	0.055	0.052	0.049	0.047	0.046	0.044	0.045	0.050	0.056	0.044
12	0.045	0.048	0.049	0.047	0.050	0.045	0.046	0.046	0.043	0.049	0.052	0.052	0.052	0.054	0.054	0.055	0.055	0.054	0.054	0.054	0.052	0.052	0.052	0.052	0.050	0.055	0.043
13	0.052	0.051	0.051	0.051	0.050	0.051	0.051	0.050	0.049	0.049	0.050	0.053	0.053	0.054	0.054	0.054	0.053	0.053	0.050	0.053	0.055	0.053	0.051	0.049	0.052	0.055	0.049
14	0.048	0.051	0.048	0.047	0.047	0.046	0.046	0.045	0.046	0.046	0.050	0.052	0.052	0.051	0.051	0.051	0.051	0.051	0.049	0.046	0.042	0.041	0.042	0.041	0.048	0.052	0.041
15	0.045	0.046	0.046	0.044	0.041	0.042	0.042	0.042	0.046	0.047	0.048	0.050	0.051	0.053	0.055	0.054	0.055	0.055	0.055	0.051	0.048	0.052	0.055	0.053	0.049	0.055	0.041
16	0.053	0.055	0.054	0.053	0.053	0.051	0.050	0.049	0.048	0.049	0.048	0.049	0.047	0.047	0.048	0.048	0.048	0.049	0.048	0.045	0.043	0.040	0.034	0.040	0.048	0.055	0.034
17	0.042	0.040	0.038	0.037	0.039	0.038	0.036	0.038	0.040	0.041	0.042	0.044	0.047	0.048	0.049	0.058	0.057	0.059	0.065	0.065	0.059	0.056	0.054	0.051	0.048	0.065	0.036
18	0.051	0.049	0.048	0.049	0.050	0.051	0.049	0.043	0.040	0.047	0.047	0.047	0.046	0.047	0.049	0.051	0.049	0.048	0.047	0.046	0.041	0.037	0.035	0.032	0.046	0.051	0.032
19	0.034	0.036	0.033	0.034	0.039	0.043	0.045	0.044	0.045	0.043	0.044	0.047	0.049	0.051	0.051	0.051	0.054	0.054	0.053	0.052	0.052	0.049	0.048	0.045	0.046	0.054	0.033
20	0.041	0.034	0.029	0.034	0.039	0.038	0.035	0.031	0.036	0.043	0.047	0.050	0.051	0.052	0.051	--	0.050	0.052	0.058	0.051	0.049	0.042	0.039	0.041	0.043	0.058	0.029
21	0.040	0.042	0.043	0.047	0.041	0.043	0.039	0.039	0.043	0.052	0.051	0.053	0.054	0.055	0.056	0.061	0.064	0.067	0.070	0.066	0.062	0.063	0.060	0.064	0.053	0.070	0.039
22	0.057	0.060	0.060	0.060	0.059	0.056	0.055	0.045	0.049	0.054	0.055	0.054	0.055	0.052	0.056	0.057	0.058	0.059	0.058	0.056	0.049	0.049	0.050	0.051	0.055	0.060	0.045
23	0.051	0.053	0.051	0.049	0.045	0.042	0.045	0.037	0.043	0.048	0.050	0.053	0.052	0.053	0.055	0.058	0.056	0.055	0.055	0.053	0.052	0.051	0.047	0.043	0.050	0.058	0.037
24	0.042	0.047	0.045	0.045	0.044	0.046	0.043	0.037	0.043	0.047	0.050	0.054	0.055	0.054	0.054	0.057	0.058	0.062	0.061	0.060	0.056	0.052	0.049	0.052	0.050	0.062	0.037
25	0.051	0.051	0.053	0.044	0.049	0.049	0.046	0.043	0.046	0.049	0.055	0.056	0.028	0.049	0.053	0.055	0.058	0.061	0.061	0.061	0.059	0.056	0.050	0.043	0.051	0.061	0.028
26	0.043	0.042	0.049	0.050	0.056	0.058	0.058	0.057	0.055	0.055	0.055	0.055	0.054	0.053	0.051	0.053	0.054	0.054	0.051	0.047	0.043	0.045	0.045	0.044	0.051	0.058	0.042
27	0.044	0.044	0.043	0.043	0.043	0.041	0.041	0.041	0.043	0.042	0.044	0.047	0.050	0.053	0.056	--	0.058	0.066	0.067	0.064	0.059	0.059	0.059	0.061	0.051	0.067	0.041
28	0.058	0.062	0.059	0.059	0.058	0.055	0.053	0.052	0.052	0.053	0.055	0.056	0.057	0.058	0.061	0.061	0.063	0.063	0.063	0.060	0.059	0.061	0.058	0.057	0.058	0.063	0.052
29	0.055	0.052	0.051	0.054	0.056	0.056	0.055	0.051	0.050	0.053	0.053	0.053	0.054	0.056	0.055	0.056	0.058	0.058	0.058	0.056	0.054	0.054	0.055	0.055	0.054	0.058	0.050
30	0.058	0.057	0.057	0.056	0.053	0.050	0.047	0.047	0.048	0.055	0.055	0.056	0.057	0.056	0.054	0.053	0.057	0.057	0.057	0.055	0.058	0.052	0.051	0.052	0.054	0.058	0.047
31	0.053	0.053	0.053	0.057	0.054	0.052	0.047	0.044	0.046	0.053	0.054	0.054	0.052	0.054	0.055	0.057	0.059	0.059	0.057	0.055	0.055	0.054	0.053	0.046	0.053	0.059	0.044
Avg	0.047	0.047	0.046	0.046	0.046	0.045	0.044	0.042	0.043	0.046	0.048	0.050	0.049	0.051	0.052	0.053	0.054	0.055	0.054	0.052	0.051	0.049	0.048	0.047	0.048	--	--
Max	0.058	0.062	0.060	0.060	0.059	0.058	0.058	0.057	0.055	0.055	0.055	0.056	0.057	0.058	0.061	0.061	0.064	0.067	0.070	0.066	0.062	0.063	0.060	0.064	--	0.070	--
Min	0.034	0.034	0.029	0.030	0.034	0.031	0.031	0.030	0.032	0.037	0.039	0.038	0.028	0.040	0.041	0.041	0.041	0.041	0.040	0.039	0.039	0.037	0.034	0.032	--	--	0.028

-- Indicates Invalid Data

Appendix D: West Plant Meteorological Site Check Forms

**WEST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 01/08/2015

Time: 1:52

Operator: Karen Ballard

YES NO **

✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The tower is intact and upright.
2. The anemometer propeller and the wind direction vane are turning freely.
3. All temperature shields are intact, and the probes are inside their shields.
4. The aspirator fans are operating.
5. The solar radiation sensor is level and has been cleaned.
6. The solar panel is facing south and is clean.
7. The precipitation gauge is clean and free of bugs and dust.
8. The data logger is reading the correct time and day.
9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	4 m/s	4.71	4.76
Direction* 10m (deg)	ESE	128.81	59.4
Ambient Temperature (°C)	15°	14.33	14.2
Relative Humidity (%)	35%	38.07	38.3
Aspirated Temp 2m	15°	14.37	14.1
Aspirated Temp 10m	14°	13.51	13.6
Delta Temperature (°C)	N/A	-0.81	-0.484
Solar Radiation (w/m ²)	Sunny (Partly cloudy) Cloudy	244.19	278
Barometric Pressure (mmHg)	N/A	684.29	684
Battery Voltage (V)	N/A	12.98	13
Time (MST)	N/A	1:54	14:00-L.T.
Date	N/A	?	01/08/2015

66.
104 - 13:30
+ 77.3 - 13:45
* 60.1 - 14:15
+ 76.5 - 14:30
+
+
+
+
+
+
+
+
+
+

*Direction wind is from

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: _____

Karen Ballard

Kami Baloca

**WEST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 02/05/2015

Time: 3:04

Operator: Kenn Ballou

YES NO **

✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The tower is intact and upright.
2. The anemometer propeller and the wind direction vane are turning freely.
3. All temperature shields are intact, and the probes are inside their shields.
4. The aspirator fans are operating.
5. The solar radiation sensor is level and has been cleaned.
6. The solar panel is facing south and is clean.
7. The precipitation gauge is clean and free of bugs and dust.
8. The data logger is reading the correct time and day.
9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	2 m/s	3.1 m/s	2.61
Direction* 10m (deg)	SE	123.10	88.8
Ambient Temperature (°C)	23°	25.03	26.1
Relative Humidity (%)	15%	12.22	14
Aspirated Temp 2m	23°	26.04	26
Aspirated Temp 10m	22°	25.07	25
Delta Temperature (°C)	N/A	-1.12	-1.04
Solar Radiation (w/m²)	Sunny Partly cloudy Cloudy	719.20	554
Barometric Pressure (mmHg)	N/A	685.00	685
Battery Voltage (V)	N/A	12.76	12.8
Time (MST)	N/A	3:07	15:00 - LT.
Date	N/A	02/05/2015	02/05/2015

66-
82.9-14:30
+92.4-14:45
*93.7-15:15
+76.2-15:30
+
+
+
+
66-
+609-14:30
*590-14:45
519-15:15
+476-15:30
+
+
+

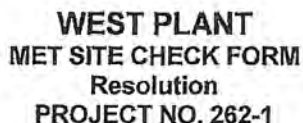
*Direction wind is from

Comments/Unusual Occurrences or Weather:

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature:

Kenn Ballou



Operator: Rami B. Oard

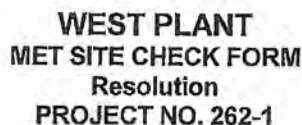
[illegible]

1. The tower is intact and upright.
2. The anemometer propeller and the wind direction vane are turning freely.
3. All temperature shields are intact, and the probes are inside their shields.
4. The aspirator fans are operating.
5. The solar radiation sensor is level and has been cleaned.
6. The solar panel is facing south and is clean.
7. The precipitation gauge is clean and free of bugs and dust.
8. The data logger is reading the correct time and day.
9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	8 m/s	6.94	4.85
Direction* 10m (deg)	8W	254.44	290
Ambient Temperature (°C)	20°	20.74	21.3
Relative Humidity (%)	15%	14.67	14.7
Aspirated Temp 2m	20°	20.42	21
Aspirated Temp 10m	19°	19.90	20.2
Delta Temperature (°C)	N/A	-0.43	-0.715
Solar Radiation (w/m²)	Sunny Partly cloudy Cloudy	671.63	682
Barometric Pressure (mmHg)	N/A	683.37	683
Battery Voltage (V)	N/A	12.85	12.9
Time (MST)	N/A	14:14	14:15 - L.T.
Date	N/A	02/11/2015	02/11/2015

Comments/Unusual Occurrences or Weather: filled swap pan. Monitor not working. ✓ 66.

Site Operator Signature: James B. CO. a



Operator: Kane Ballard

[illegible]

1. The tower is intact and upright.
2. The anemometer propeller and the wind direction vane are turning freely.
3. All temperature shields are intact, and the probes are inside their shields.
4. The aspirator fans are operating.
5. The solar radiation sensor is level and has been cleaned.
6. The solar panel is facing south and is clean.
7. The precipitation gauge is clean and free of bugs and dust.
8. The data logger is reading the correct time and day.
9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	1.7 m/s	1.74	2.03
Direction* 10m (deg)	8	297.22	288
Ambient Temperature (°C)	20°	22.84	23
Relative Humidity (%)	15%	16.59	16.2
Aspirated Temp 2m	20°	22.72	22.6
Aspirated Temp 10m	19°	22.20	22
Delta Temperature (°C)	N/A	-0.48	-0.557
Solar Radiation (w/m²)	Sunny <u>Partly cloudy</u> Cloudy	566.43	343
Barometric Pressure (mmHg)	N/A	683.05	683
Battery Voltage (V)	N/A	12.82	12.8
Time (MST)	N/A	3:53	16:00-L.T.
Date	N/A	02.19.2015	02/19/2015

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature:

John Ball

**WEST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 03-04-2015

Time: 10:37

Operator: Kenn B. Cord

YES NO **

✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The tower is intact and upright.
2. The anemometer propeller and the wind direction vane are turning freely.
3. All temperature shields are intact, and the probes are inside their shields.
4. The aspirator fans are operating.
5. The solar radiation sensor is level and has been cleaned.
6. The solar panel is facing south and is clean.
7. The precipitation gauge is clean and free of bugs and dust.
8. The data logger is reading the correct time and day.
9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit <i>gpc</i>
Speed 10m (m/s)	<u>1ms</u>	<u>1.02</u>	<u>1.48 m/s</u>
Direction* 10m (deg)	<u>W</u>	<u>256.84</u>	<u>231°</u>
Ambient Temperature (°C)	<u>15°</u>	<u>14.82</u>	<u>14.7°C</u>
Relative Humidity (%)	<u>40%</u>	<u>39.75</u>	<u>36.6%</u>
Aspirated Temp 2m	<u>15°</u>	<u>13.34</u>	<u>13.3°C</u>
Aspirated Temp 10m	<u>14°</u>	<u>12.39</u>	<u>12.5°C</u>
Delta Temperature (°C)	N/A	<u>-0.95</u>	<u>-0.845°C</u>
Solar Radiation (w/m ²)	<u>Sunny Partly cloudy Cloudy</u>	<u>769.02</u>	<u>767 w/m²</u>
Barometric Pressure (mmHg)	N/A	<u>682.15</u>	<u>682 mmHg</u>
Battery Voltage (V)	N/A	<u>12.94</u>	<u>12.9 V</u>
Time (MST)	N/A	<u>10:39</u>	<u>10:45 MST</u>
Date	N/A	<u>03/04/2015</u>	<u>3/4/2015</u>

10:15 156°
 10:30 188°
 11:00 227°
 11:15 240°

*Direction wind is from

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: _____

Kenn B. Cord

**WEST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 3/13/2015

Time: 1:10

Operator: Mary Morissette

YES NO **

☒	1. The tower is intact and upright.
☒	2. The anemometer propeller and the wind direction vane are turning freely.
☒	3. All temperature shields are intact, and the probes are inside their shields.
☒	4. The aspirator fans are operating.
☒	5. The solar radiation sensor is level and has been cleaned.
☒	6. The solar panel is facing south and is clean.
☒	7. The precipitation gauge is clean and free of bugs and dust.
☒	8. The data logger is reading the correct time and day.
☒	9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
☒	10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit <i>jr</i>
Speed 10m (m/s)	<u>3 m/s</u>	<u>4.50</u>	<u>283</u>
Direction* 10m (deg)	<u>SE</u>	<u>104.91</u>	<u>95.7°</u>
Ambient Temperature (°C)	<u>25°</u>	<u>26.24</u>	<u>26.1°C</u>
Relative Humidity (%)	<u>15%</u>	<u>15.76</u>	<u>16.2%</u>
Aspirated Temp 2m	<u>25°</u>	<u>26.07</u>	<u>25.5°C</u>
Aspirated Temp 10m	<u>24°</u>	<u>24.32</u>	<u>24.3°C</u>
Delta Temperature (°C)	N/A	<u>-1.47</u>	<u>-1.27°C</u>
Solar Radiation (w/m ²)	<u>Sunny</u> Partly cloudy Cloudy	<u>237.00</u>	<u>957 w/m²</u>
Barometric Pressure (mmHg)	N/A	<u>683.42</u>	<u>683 mmHg</u>
Battery Voltage (V)	N/A	<u>12.79</u>	<u>12.8 V</u>
Time (MST)	N/A	<u>1:14</u>	<u>13:15 MST</u>
Date	N/A	<u>3/13/2015</u>	<u>3/13/2015</u>

w/m²
 { 12:45 903
 13:00 932
 13:30 505
 13:45 378

*Direction wind is from

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: Mary Morissette

**WEST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 3-19-2015 ✓

Time: 2:30 ✓

Operator: K. Bacci

YES NO **

✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The tower is intact and upright.
2. The anemometer propeller and the wind direction vane are turning freely.
3. All temperature shields are intact, and the probes are inside their shields.
4. The aspirator fans are operating.
5. The solar radiation sensor is level and has been cleaned.
6. The solar panel is facing south and is clean.
7. The precipitation gauge is clean and free of bugs and dust.
8. The data logger is reading the correct time and day.
9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	2 m/s	235	3.32
Direction* 10m (deg)	W	216.74	257
Ambient Temperature (°C)	20°	18.81	19.1
Relative Humidity (%)	50%	48.89	48.7
Aspirated Temp 2m	20°	18.24	18.6
Aspirated Temp 10m	19°	17.43	17.9
Delta Temperature (°C)	N/A	-0.79	-0.741
Solar Radiation (w/m ²)	Sunny Partly cloudy <u>Cloudy</u>	333.15	681
Barometric Pressure (mmHg)	N/A	681.68	682
Battery Voltage (V)	N/A	12.87	12.9
Time (MST)	N/A	14:33	14:30 - L.T.
Date	N/A	03/19/2015	03/19/2015

33-
+ 268 - 14:00
★ 255 - 14:15
+ 264 - 14:45
+ 264 15:00
+
+ 66-
+ 617 - 14:00
+ 644 - 14:15
★ 623 - 14:45
+ 574 - 15:00
+

★ 0.024" of precip. in total @ 14:45 hrs! 66.

*Direction wind is from

Comments/Unusual Occurrences or Weather: Filled w/vap. pan & tipped precip gauge ✓ 66.

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: K. Bacci

**WEST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 3.26.2015 ✓

Time: 2:32 ✓

Operator: Kane Ballard

YES NO **

✓		1. The tower is intact and upright.
✓		2. The anemometer propeller and the wind direction vane are turning freely.
✓		3. All temperature shields are intact, and the probes are inside their shields.
✓		4. The aspirator fans are operating.
✓		5. The solar radiation sensor is level and has been cleaned.
✓		6. The solar panel is facing south and is clean.
✓		7. The precipitation gauge is clean and free of bugs and dust.
✓		8. The data logger is reading the correct time and day.
✓		9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
✓		10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	3m/s	3.07	1.97
Direction* 10m (deg)	8W	155.11	112
Ambient Temperature (°C)	25°	27.23	27.3
Relative Humidity (%)	15%	7.19	6.83
Aspirated Temp 2m	25°	27.41	27.1
Aspirated Temp 10m	24°	25.62	25.6
Delta Temperature (°C)	N/A	-1.62	-1.46
Solar Radiation (w/m²)	Sunny Partly cloudy Cloudy	789.49	830
Barometric Pressure (mmHg)	N/A	684.73	685
Battery Voltage (V)	N/A	12.78	12.8
Time (MST)	N/A	2:34	14:30 - L.T.
Date	N/A	03/26/2015	03/26/2015

*0.004" of precip. invalid total @ 14:45 hrs! GG.

*Direction wind is from

Comments/Unusual Occurrences or Weather: Tipped precip gauge ★ GG.

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature:

Kane Ballard

Appendix E: West Plant PM₁₀ and PM_{2.5} Site Check Forms and Flow Audits

WEST PLANT
BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 01/08/2015 Time: 1:33 Operator: Karen Beland

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 01/04-01/08 → BAM Cal Mem-brane 5%
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☒	☐

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☒	☐
☒	☐

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: Self Test - "Passed"

* PM10 conc + flow invalidated @ 15:00 hrs! GG

Signature: Karen Beland

WEST PLANT
BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 01/15/2015 Time: 12:14 Operator: K Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). *Pump Cal Membrane 5% ✓ GG*
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences:

Signature: K Ballard

WEST PLANT
 BAM PM10 WEEKLY SITE CHECK FORM
 RESOLUTION MONITORING PROJECT
 PROJECT NO. 262-1



Date: 1-23-15 Time: 14:07 Operator: K Bank

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 1/19 - 1/23
BAM Membrane 5/1 ✓ 66-
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66-

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66-

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66-

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66-

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: * PM10 conf. + flow invalidated @ 16:00 hrs.
due to count error! 66-

Signature: K Bank

WEST PLANT
BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 02/05/2015 Time: 3:09 Operator: K. B. C. A.

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual).
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: K. B. C. A.

WEST PLANT
BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 02/11/2015 ✓ Time: 2:05 ✓ Operator: R. Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 12/07 - 02/11 → BAM Cal Membrane 50% ✓ 66
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

	✓
	✓
	✓
	✓
	✓

1. Inlet Flow check Performed
2. Visual Inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

	✓
	✓

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

	✓
	✓

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

	✓
	✓

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: R. Ballard

WEST PLANT
BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 02-19-2015

Time: 3:55

Operator: Hami Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 2/15 → 2/19 → BAM Cal
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool). Mem-bran 5%

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

Comments/Unusual Occurrences: _____

Signature: Hami Ball

WEST PLANT
BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 03/04/2015

Time: 10:39

Operator: Karen B. C. d

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 4/28 → 10/4 → BAM Cal Membrane 5%
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☒	☐
☒	☐
☒	☐
☐	☒
☒	☐

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☒	☐

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

Comments/Unusual Occurrences: _____

Signature: Karen B. C. d



Monthly Flow Verification PM₁₀

West Plant
PARTICULATE MONITORING PROJECT
PROJECT NO. 262-1

Met One BAM 1020 PM₁₀: S/N: 8712
Firmware: Delta Cal S/N: _____
Calibrator: _____

Date of Flow Audit: 03/04/2015
Time of Flow Audit: 10:43

	BAM	STD
Ambient Temperature (AT) °C	17.7	17.0
Barometric Pressure mmHg	684	682

	Set Point (lpm)	BAM	% Diff (1)	STD Flow Meter	% Diff (2)	
(1) Actual Flow	15	15.0	0%	15.24	-1.6%	gr
Acceptable		14.700 - 15.300	+/- 2%	14.250 - 15.750	+/- 5%	
Differential						
(2) Actual Flow	18.4	18.4	0%	18.66	-1.4%	gr
Acceptable		18.032 - 18.768	+/- 2%	17.480 - 19.320	+/- 5%	
Differential						
(3) Actual Flow	16.7	16.7	0%	16.94	-1.4%	gr
Acceptable		16.336 - 17.034	+/- 2%	15.865 - 17.535	+/- 5%	
Differential						

Calculations:

(1) % Diff = [(BAM - Set Point)/Set Point]*100 (+/- 2%)

(2) % Diff = [(BAM - Calibrator)/Calibrator]*100 (+/- 5%)

(2) Leak Test

BAM
0.3

 Should be < 1.0 LPM

* PM₁₀ data invalidated for 11:00 MST. gr

Comments/Abnormalities: Self Test Passed

Signature: [Signature]

Upon completion of this form, fax to Air Sciences at 303-279-3796

WEST PLANT
 BAM PM10 WEEKLY SITE CHECK FORM
 RESOLUTION MONITORING PROJECT
 PROJECT NO. 262-1



Date: 3.13.2015

Time: 1:17

Operator: Mary Morissette

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual).
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

Comments/Unusual Occurrences: _____

Signature: Mary Morissette

WEST PLANT
BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 03/19/2015

Time: 2:34

Operator: Karen Bell

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 3/15 3/19 BAM cal Membrane 50%
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool) 66-

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66-

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66-

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66-

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences:

Signature: Karen Bell

WEST PLANT
BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 3/26/2015 ✓ Time: 2:38 ✓

Operator: R Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 3/22 - 3/24 → BAM Cal Membrane 50% ✓
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool) GG

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO GG

	✓
	✓
	✓
	✓
✓	

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

✓	
✓	

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO GG

	✓
	✓

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO GG

	✓
	✓

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: Self Test Passed

*PM10 conc. & flow invalidated @ 15:00 hrs! GG

Signature: R Ballard

WEST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 01/08/2015 Time: 1:59

Operator: Kenn. B. C. d

I. BAM SAMPLER -- Weekly Checks.

YES NO

✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 01/04 - 01/08 → BAM Cal Membrane 5%
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER -- Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓
	✓
	✓
✓	

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER -- Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

✓	
✓	

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER -- Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER -- Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: Self Test - "PASSED"

* PM2.5 conc + flow invalidated @ 14:00 and 15:00 hrs!

Signature: K. B. C. d

WEST PLANT
 BAM PM 2.5 WEEKLY SITE CHECK FORM
 RESOLUTION MONITORING PROJECT
 PROJECT NO. 262-1



Date: 01/17/2014 Time: 12:10 Operator: K. B. D.

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). *BAM Del Membrane 5% ✓ 66-*
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO *66-*

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO *66-*

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO *66-*

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO *66-*

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: K. B. D.

WEST PLANT
 BAM PM 2.5 WEEKLY SITE CHECK FORM
 RESOLUTION MONITORING PROJECT
 PROJECT NO. 262-1



Date: 1-23-15 Time: 14:02 Operator: K Back

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 1/23 Bam Membrane SY ✓ 66
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66 -

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66 -

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66 -

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66 -

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: K Back

WEST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 22/05/2015 Time: 3:11

Operator: K. Balla

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual).
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

Comments/Unusual Occurrences: _____

Signature: K. Balla

WEST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 02/11/2015 ✓

Time: 2:06 ✓

Operator: Kane Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 04/07-02/11 → BAM Cal Membrane 5/8 ✓
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool) 56-

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 56-

	✓
	✓
	✓
	✓
	✓

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 56-

	✓
	✓

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 56-

	✓
	✓

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 56-

	✓
	✓

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

"Comments/Unusual Occurrences: _____

Signature: Kane Ballard

WEST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 02/14/2015

Time: 3:57

Operator: Kami Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	
☒	
☒	
☒	
☒	
☒	
☒	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 2/15-2/19 → BAM Cal
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool) Membrane 5% ✓

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	☒
	☒
	☒
	☒
	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	☒
	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	☒
	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	☒
	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences:

Signature: Kami Ballard

WEST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 03/04/2015

Time: 10 40

Operator: Kame B. Coleman

I. BAM SAMPLER -- Weekly Checks.

YES	NO
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 2/28-3/4 → BAM Cal Membrane
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool) 8/10

II. BAM SAMPLER -- Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☒	☐
☒	☐
☒	☐
☐	☒
☒	☐

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER -- Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☐	☒
☒	☐

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER -- Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER -- Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: Kame B. Coleman



Monthly Flow Verification PM_{2.5}

West Plant
PARTICULATE MONITORING PROJECT
PROJECT NO. 262-1

Met One BAM 1020 PM_{2.5}: S/N: M8193
Firmware: _____
Calibrator: Delta Cal S/N: _____

Date of Flow Audit: 03/04/2015
Time of Flow Audit: 15:54

	BAM	STD
Ambient Temperature (AT) °C	<u>15.4</u> 17.4	<u>15.6</u>
Barometric Pressure mmHg	<u>68.5</u>	<u>68.2</u>

	Set Point (lpm)	BAM	% Diff (1)	STD Flow Meter	% Diff (2)
(1) Actual Flow	15	<u>15.0</u>	<u>0%</u>	<u>14.97</u>	<u>0.2%</u> <i>gr</i>
Acceptable		14.700 - 15.300	+/- 2%	14.250 - 15.750	+/- 5%
Differential					
(2) Actual Flow	18.4	<u>18.4</u>	<u>0%</u>	<u>18.33</u>	<u>0.4%</u> <i>gr</i>
Acceptable		18.032 - 18.768	+/- 2%	17.480 - 19.320	+/- 5%
Differential					
(3) Actual Flow	16.7	<u>16.7</u>	<u>0%</u>	<u>16.74</u>	<u>-0.2%</u> <i>gr</i>
Acceptable		16.336 - 17.034	+/- 2%	15.865 - 17.535	+/- 5%
Differential					

Calculations:

(1) % Diff = [(BAM - Set Point)/Set Point]*100 (+/- 2%)

(2) % Diff = [(BAM - Calibrator)/Calibrator]*100 (+/- 5%)

(2) Leak Test BAM
0.1 Should be < 1.0 LPM

* PM_{2.5} data invalidated
for 11:00 MST. *gr*

Comments/Abnormalities: Self-Test Passed

Signature: Kame Ballard

Upon completion of this form, fax to Air Sciences at 303-279-3796

WEST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 3.13.2015

Time: 1:17

Operator: Mary Morrisette

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual).
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: Mary Morrisette

WEST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 3/19/2015 Time: 2:37 Operator: K. Balla

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 3/15 - 3/19 BAM Cal Mismatch 5010 ✓
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool) 60

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: K. Balla

WEST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 3/26/2015 ✓ Time: 2:45 ✓ Operator: Karen Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 3/22 - 3/24 → BAM cal membrane 5% ✓
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓
	✓
	✓
✓	

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

✓	
✓	

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: Self Test Passed

* PM2.5 conc & flow invalidated from 07:00 hrs through 15:00 hrs! GG

Signature: Karen Ballard

Appendix F: East Plant Meteorological Site Check Forms

**EAST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 01/08/2015

Time: 1:22

Operator: Karen Balland

YES NO **

☒	1. The tower is intact and upright.
☒	2. The anemometer propeller and the wind direction vane are turning freely.
☒	3. All temperature shields are intact, and the probes are inside their shields.
☒	4. The aspirator fans are operating.
☒	5. The solar radiation sensor is level and has been cleaned.
☒	6. The solar panel is facing south and is clean.
☒	7. The precipitation gauge is clean and free of bugs and dust.
☒	8. The data logger is reading the correct time and day.
☒	9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
☒	10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit	
Speed 10m (m/s)	<u>7 m/s</u>	<u>9.01</u>	<u>6.55</u>	+
Direction* 10m (deg)	<u>NE</u>	<u>56.35</u>	<u>58.1</u>	+
Ambient Temperature (°C)	<u>10°</u>	<u>9.40</u>	<u>9.4</u>	+
Relative Humidity (%)	<u>35%</u>	<u>43.87</u>	<u>46</u>	+
Aspirated Temp 2m	<u>10°</u>	<u>9.22</u>	<u>9.24</u>	+
Aspirated Temp 10m	<u>9°</u>	<u>8.61</u>	<u>8.61</u>	+
Delta Temperature (°C)	<u>N/A</u>	<u>-0.62</u>	<u>-0.625</u>	+
Solar Radiation (w/m²)	<u>Sunny (Partly cloudy) Cloudy</u>	<u>359.91</u>	<u>382</u>	+
Barometric Pressure (mmHg)	<u>N/A</u>	<u>1034.41</u>	<u>654</u>	+
Battery Voltage (V)	<u>N/A</u>	<u>13.01</u>	<u>13</u>	+
Time (MST)	<u>N/A</u>	<u>1:24</u>	<u>13:30_L.T.</u>	+
Date	<u>N/A</u>	<u>01/08/2015</u>	<u>01/08/2015</u>	+

*Direction wind is from

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: Karen Balland

**EAST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 1/15/2015

Time: 12:49

Operator: K. Baller

YES NO **

☒	1. The tower is intact and upright.
☒	2. The anemometer propeller and the wind direction vane are turning freely.
☒	3. All temperature shields are intact, and the probes are inside their shields.
☒	4. The aspirator fans are operating.
☒	5. The solar radiation sensor is level and has been cleaned.
☒	6. The solar panel is facing south and is clean.
☒	7. The precipitation gauge is clean and free of bugs and dust.
☒	8. The data logger is reading the correct time and day.
☒	9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
☒	10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	4ms	5.63	7.56
Direction* 10m (deg)	E	86.88	60
Ambient Temperature (°C)	11°	10.93	10.9
Relative Humidity (%)	90%	39.46	40.6
Aspirated Temp 2m	11°	10.83	10.7
Aspirated Temp 10m	10°	10.03	9.94
Delta Temperature (°C)	N/A	-0.79	-0.755
Solar Radiation (w/m²)	Sunny Partly cloudy Cloudy	680.47	685
Barometric Pressure (mmHg)	N/A	657.84	658
Battery Voltage (V)	N/A	12.98	13
Time (MST)	N/A	12:51	12:45 - L.T.
Date	N/A	01/15/2015	01/15/2015

66-
+ 53.3 - 12:15
* 53.9 - 12:30
+ 52 - 13:00
+ 56 - 13:15

*Direction wind is from

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: K. Baller

**EAST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 1-23-15

Time: 14:45

Operator: K. Baak

YES NO **

✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The tower is intact and upright.
2. The anemometer propeller and the wind direction vane are turning freely.
3. All temperature shields are intact, and the probes are inside their shields.
4. The aspirator fans are operating.
5. The solar radiation sensor is level and has been cleaned.
6. The solar panel is facing south and is clean.
7. The precipitation gauge is clean and free of bugs and dust.
8. The data logger is reading the correct time and day.
9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit	
Speed 10m (m/s)		5.53	3.41	+
Direction* 10m (deg)	east	57.3	60.6	+
Ambient Temperature (°C)		10.36	10.3	+
Relative Humidity (%)		21.1%	23.2	+
Aspirated Temp 2m		10.14	10	+
Aspirated Temp 10m		9.52	9.38	+
Delta Temperature (°C)	N/A	- .61	-0.662	+
Solar Radiation (w/m ²)	Sunny Partly cloudy Cloudy	335.67	364	+
Barometric Pressure (mmHg)	N/A	655.77	656	+
Battery Voltage (V)	N/A	13.00	13	+
Time (MST)	N/A	14:43	14:45-L.T.	+
Date	N/A	1-23-15	1-23-15	+

*Direction wind is from

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: _____

K. Baak

**EAST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 02/05/2015

Time: 10:53

Operator: K. Balla d

YES NO **

☒	1. The tower is intact and upright.
☒	2. The anemometer propeller and the wind direction vane are turning freely.
☒	3. All temperature shields are intact, and the probes are inside their shields.
☒	4. The aspirator fans are operating.
☒	5. The solar radiation sensor is level and has been cleaned.
☒	6. The solar panel is facing south and is clean.
☒	7. The precipitation gauge is clean and free of bugs and dust.
☒	8. The data logger is reading the correct time and day.
☒	9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
☒	10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	3 m/s	4.8	4.2
Direction* 10m (deg)	N	27.57	57.5
Ambient Temperature (°C)	17°	18.35	18.3
Relative Humidity (%)	15%	19.21	21.1
Aspirated Temp 2m	17°	17.87	17.9
Aspirated Temp 10m	16	17.15	17.1
Delta Temperature (°C)	N/A	-0.66	-0.754
Solar Radiation (w/m²)	Sunny Partly cloudy Cloudy	692.66	686
Barometric Pressure (mmHg)	N/A	675.05 ?	657
Battery Voltage (V)	N/A	12.84	12.8
Time (MST)	N/A	10:55	11:00 L.T.
Date	N/A	02/05/15	02/05/15

*BP values way off 675 instead of 657! Suspected site operator types
 *Direction wind is from
 Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: K. Balla d

EAST PLANT MET SITE CHECK FORM Resolution PROJECT NO. 262-1

Date: 02/11/2015 + Time: 9:05 + Operator: Kanu Ballard

YES NO **

✓		1. The tower is intact and upright.
✓		2. The anemometer propeller and the wind direction vane are turning freely.
✓		3. All temperature shields are intact, and the probes are inside their shields.
✓		4. The aspirator fans are operating.
✓		5. The solar radiation sensor is level and has been cleaned.
✓		6. The solar panel is facing south and is clean.
✓		7. The precipitation gauge is clean and free of bugs and dust.
✓		8. The data logger is reading the correct time and day.
✓		9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
✓		10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	7 m/s	5.73	9.02
Direction* 10m (deg)	NE	40.20	40.5
Ambient Temperature (°C)	18°	16.93	17.1
Relative Humidity (%)	15%	17.29	17.4
Aspirated Temp 2m	18°	17.13	17.1
Aspirated Temp 10m	17°	16.35	16.5
Delta Temperature (°C)	N/A	-0.78	-0.64
Solar Radiation (w/m²)	Sunny Partly cloudy Cloudy	556.29	596
Barometric Pressure (mmHg)	N/A	653.55	654
Battery Voltage (V)	N/A	12.85	12.9
Time (MST)	N/A		15:00 - LT
Date	N/A		02/11/2015

10.5 - 14:30
★ 8.55 - 14:45
+ 8.08 - 15:15
+ 9.13 - 15:30
+
+
+
+
+
+
+
+
+
+
+

*Direction wind is from

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: Kanu Ballard

**EAST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 02/19/2015 ✓

Time: 1:51 ✓

Operator: K. Ballard

YES NO **

✓	1. The tower is intact and upright.
✓	2. The anemometer propeller and the wind direction vane are turning freely.
✓	3. All temperature shields are intact, and the probes are inside their shields.
✓	4. The aspirator fans are operating.
✓	5. The solar radiation sensor is level and has been cleaned.
✓	6. The solar panel is facing south and is clean.
✓	7. The precipitation gauge is clean and free of bugs and dust.
✓	8. The data logger is reading the correct time and day.
✓	9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
✓	10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	1 m/s	2.54	2.04 +
Direction* 10m (deg)	SW	242.05	249 +
Ambient Temperature (°C)	20°	20.51	20.6 +
Relative Humidity (%)	15%	16.48	15.5 +
Aspirated Temp 2m	20°	20.09	19.6 +
Aspirated Temp 10m	19°	19.08	18.9 +
Delta Temperature (°C)	N/A	-0.93	-0.725 +
Solar Radiation (w/m²)	Sunny Partly cloudy Cloudy	845.53	787 +
Barometric Pressure (mmHg)	N/A	654.34	654 +
Battery Voltage (V)	N/A	12.79	12.8 +
Time (MST)	N/A	1:54	14:00 LT. +
Date	N/A	02/19/2015	02/19/2015 +

*Direction wind is from

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: Kame Ballard

**EAST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 03/04/2015

Time: 12:49

Operator: K. Ballard

YES NO **

✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The tower is intact and upright.
2. The anemometer propeller and the wind direction vane are turning freely.
3. All temperature shields are intact, and the probes are inside their shields.
4. The aspirator fans are operating.
5. The solar radiation sensor is level and has been cleaned.
6. The solar panel is facing south and is clean.
7. The precipitation gauge is clean and free of bugs and dust.
8. The data logger is reading the correct time and day.
9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit <i>gr</i>
Speed 10m (m/s)	<u>1 m/s</u>	<u>1.024</u>	<u>1.76 m/s</u>
Direction* 10m (deg)	<u>S</u>	<u>194.16</u>	<u>274°</u>
Ambient Temperature (°C)	<u>10°</u>	<u>10.98</u>	<u>11.0 °C</u>
Relative Humidity (%)	<u>40%</u>	<u>48.56</u>	<u>49.4 %</u>
Aspirated Temp 2m	<u>10°</u>	<u>10.49</u>	<u>10.1 °C</u>
Aspirated Temp 10m	<u>9°</u>	<u>9.94</u>	<u>9.58 °C</u>
Delta Temperature (°C)	<u>N/A</u>	<u>-0.55</u>	<u>-0.48 °C</u>
Solar Radiation (w/m ²)	<u>Sunny</u> <u>Partly cloudy</u> <u>Cloudy</u>	<u>257.09</u>	<u>330 w/m²</u>
Barometric Pressure (mmHg)	<u>N/A</u>	<u>651.96</u>	<u>652 mmHg</u>
Battery Voltage (V)	<u>N/A</u>	<u>12.94</u>	<u>12.9 V</u>
Time (MST)	<u>N/A</u>	<u>12:51</u>	<u>13:00 MST</u>
Date	<u>N/A</u>	<u>3/04/2015</u>	<u>3/4/2015</u>

{ 12:30 227°
 12:45 238°
 13:15 261°
 13:30 261°

*Direction wind is from

Comments/Unusual Occurrences or Weather:

Check Solar Radiation

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature:

Kimi Ballard

**EAST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 3.13.2015

Time: 1:36

Operator: Mary Morissette

YES NO **

✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The tower is intact and upright.
2. The anemometer propeller and the wind direction vane are turning freely.
3. All temperature shields are intact, and the probes are inside their shields.
4. The aspirator fans are operating.
5. The solar radiation sensor is level and has been cleaned.
6. The solar panel is facing south and is clean.
7. The precipitation gauge is clean and free of bugs and dust.
8. The data logger is reading the correct time and day.
9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit <i>gr</i>
Speed 10m (m/s)	<u>2m/s</u>	<u>1.94</u>	<u>1.67 m/s</u>
Direction* 10m (deg)	<u>8E</u>	<u>155.84</u>	<u>151°</u>
Ambient Temperature (°C)	<u>21°</u>	<u>20.64</u>	<u>20.6°C</u>
Relative Humidity (%)	<u>15%</u>	<u>18.42</u>	<u>18.5%</u>
Aspirated Temp 2m	<u>21°</u>	<u>20.27</u>	<u>20.4°C</u>
Aspirated Temp 10m	<u>20°</u>	<u>19.80</u>	<u>19.8°C</u>
Delta Temperature (°C)	N/A	<u>-0.64</u>	<u>-0.547°C</u>
Solar Radiation (w/m ²)	Sunny <u>Partly cloudy</u> Cloudy	<u>214.68</u>	<u>243 w/m²</u>
Barometric Pressure (mmHg)	N/A	<u>653.79</u>	<u>654 mmHg</u>
Battery Voltage (V)	N/A	<u>12.73</u>	<u>12.8 V</u>
Time (MST)	N/A	<u>1:39</u>	<u>13:45 MST</u>
Date	N/A	<u>3/13/2015</u>	<u>3/13/2015</u>

*Direction wind is from

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: Mary Morissette

**EAST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 03-20-2015 ✓

Time: 2:01 ✓

Operator: Kame Ballard

YES NO **

✓		1. The tower is intact and upright.
✓		2. The anemometer propeller and the wind direction vane are turning freely.
✓		3. All temperature shields are intact, and the probes are inside their shields.
✓		4. The aspirator fans are operating.
✓		5. The solar radiation sensor is level and has been cleaned.
✓		6. The solar panel is facing south and is clean.
✓		7. The precipitation gauge is clean and free of bugs and dust.
✓		8. The data logger is reading the correct time and day.
✓		9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
✓		10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	<u>1 m/s</u>	<u>0.13</u>	<u>1.6</u>
Direction* 10m (deg)	<u>150 E</u>	<u>115.27</u>	<u>227</u>
Ambient Temperature (°C)	<u>18°</u>	<u>17.42</u>	<u>18.1</u>
Relative Humidity (%)	<u>35%</u>	<u>41.08</u>	
Aspirated Temp 2m	<u>18°</u>	<u>16.89</u>	<u>17.4</u>
Aspirated Temp 10m	<u>17°</u>	<u>16.89</u>	<u>16.6</u>
Delta Temperature (°C)	N/A	<u>10.47</u>	<u>-0.719</u>
Solar Radiation (w/m²)	Sunny <u>Partly cloudy</u> Cloudy	<u>182.95</u>	<u>355</u>
Barometric Pressure (mmHg)	N/A	<u>654.21</u>	<u>654</u>
Battery Voltage (V)	N/A	<u>12.79</u>	<u>12.8</u>
Time (MST)	N/A	<u>2:03</u>	<u>14:00 L.T.</u>
Date	N/A	<u>03/20/2015</u>	<u>03/20/2015</u>

66.
+ 140 - 13:30
* 210 - 13:45
+ 141 - 14:15
+ 97.3 - 14:30
+
+
+ 935 - 13:30
* 831 - 13:45
+ 201 - 14:15
+ 444 - 14:30
+
+
+

*Direction wind is from

Comments/Unusual Occurrences or Weather: Refused swap pan r 66-

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: Kame Ballard

**EAST PLANT
MET SITE CHECK FORM
Resolution
PROJECT NO. 262-1**

Date: 3/25/2015 ✓

Time: 12:44 ✓

Operator: Kami Ballard

YES NO **

✓		1. The tower is intact and upright.
✓		2. The anemometer propeller and the wind direction vane are turning freely.
✓		3. All temperature shields are intact, and the probes are inside their shields.
✓		4. The aspirator fans are operating.
✓		5. The solar radiation sensor is level and has been cleaned.
✓		6. The solar panel is facing south and is clean.
✓		7. The precipitation gauge is clean and free of bugs and dust.
✓		8. The data logger is reading the correct time and day.
✓		9. The site has been visually inspected for unusual wildlife occurrences (dead birds, etc.).
✓		10. Estimate and document the parameters below.

Parameter	Estimated	Logger	Audit
Speed 10m (m/s)	<u>1 m/s</u>	<u>1.95</u>	<u>2.06</u> +
Direction* 10m (deg)	<u>W</u>	<u>238.32</u>	<u>222</u> +
Ambient Temperature (°C)	<u>20°</u>	<u>21.98</u>	<u>21.4</u> +
Relative Humidity (%)	<u>15°</u>	<u>18.51</u>	<u>18.8</u> +
Aspirated Temp 2m	<u>20°</u>	<u>21.48</u>	<u>20.6</u> +
Aspirated Temp 10m	<u>19°</u>	<u>20.21</u>	<u>19.5</u> +
Delta Temperature (°C)	N/A	<u>-1.26</u>	<u>-1.09</u> +
Solar Radiation (w/m ²)	Sunny Partly cloudy Cloudy	<u>954.4</u>	<u>959</u> +
Barometric Pressure (mmHg)	N/A	<u>653.99</u>	<u>654</u> +
Battery Voltage (V)	N/A	<u>12.74</u>	<u>12.8</u> +
Time (MST)	N/A	<u>12:47</u>	<u>12:45 - L.T.</u> +
Date	N/A	<u>03/25/2015</u>	<u>03/25/2015</u> +

*Direction wind is from

Comments/Unusual Occurrences or Weather: _____

When form is completed, please fax to Air Sciences Inc. @ 303-279-3796 (no cover sheet is necessary).

Site Operator Signature: _____

Kami Ballard

Appendix G: East Plant PM₁₀ and PM_{2.5} Site Check Forms and Flow Audits

EAST PLANT
 BAM PM10 WEEKLY SITE CHECK FORM
 RESOLUTION MONITORING PROJECT
 PROJECT NO. 262-1



Date: 01/08/2015

Time: 1:20

Operator: Kane Bellard

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 12/19 → Maintenance **YES.**
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO **GG-**

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO **GG-**

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO **GG-**

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO **GG-**

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

Comments/Unusual Occurrences: _____

Signature: Kane Bellard

EAST PLANT
 BAM PM10 WEEKLY SITE CHECK FORM
 RESOLUTION MONITORING PROJECT
 PROJECT NO. 262-1



Date: 11/15/2015 Time: 12:54 Operator: 01/15/2015

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 12/19 → Maintenance ✓ GG
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: Karen B. O'Connell

EAST PLANT

BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 1-23-15 Time: 14:45 Operator: K Baak

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual).
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: _____

EAST PLANT

BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 02.05.2015

Time: 10:58

Operator: K. Balla

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	
☒	
☒	
☒	
☒	
☒	
☒	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 1/27 → Maintenance ✓ 66-
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: K. Balla

EAST PLANT

BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 02/11/2015

Time: 8:16

Operator: Kanu B. C. d

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 01/27 → Maintenance ✓ 66
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences:

Signature: Kanu B. C. d

EAST PLANT

BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



PRINTED - CONTINUE

Date: 02/19/2015

Time: 1:56

Operator: Kami Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 01/27 → Maint. ✓ BG
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

IV. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

V. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

Comments/Unusual Occurrences: _____

Signature: Kami Ballard

EAST PLANT
BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 8/04/2015 Time: 12:54 Operator: Kami BaClard

I. BAM SAMPLER -- Weekly Checks.

YES	NO
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). D3/02 - Tape Sensor
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER -- Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☒	☐
☒	☐
☒	☐
☐	☒
☒	☐

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER -- Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☒	☒
☒	☐

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER -- Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER -- Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

"Comments/Unusual Occurrences: Self-Test "Passed"

Signature: Kami BaClard



Monthly Flow Verification PM₁₀

East Plant
PARTICULATE MONITORING PROJECT
PROJECT NO. 262-1

Met One PM₁₀: S/N: M8714
Firmware: _____
Calibrator: Delta Cal S/N: _____

Date of Flow Audit: 03/04/2015
Time of Flow Audit: 12:11

	BAM	STD
Ambient Temperature (AT) °C	12.7	11.8
Barometric Pressure mmHg	654	652

	Set Point (lpm)	BAM	% Diff (1)	STD Flow Meter	% Diff (2)
(1) Actual Flow Acceptable Differential	15	15.0 14.700 - 15.300	0% +/- 2%	15.01 14.250 - 15.750	-0.1% +/- 5%
(2) Actual Flow Acceptable Differential	18.4	18.4 18.032 - 18.768	0% +/- 2%	18.45 17.480 - 19.320	-0.3% +/- 5%
(3) Actual Flow Acceptable Differential	16.7	16.7 16.336 - 17.034	0% +/- 2%	16.67 15.865 - 17.535	0.2% +/- 5%

Calculations:

- (1) % Diff = [(BAM - Set Point)/Set Point]*100 (+/- 2%)
(2) % Diff = [(BAM - Calibrator)/Calibrator]*100 (+/- 5%)

(2) Leak Test 0.4 **Should be < 1.0 LPM**

* PM10 data invalidated
for 15:00 MST gr

Comments/Abnormalities: Self Test Passed

Signature: Kanu Balla

Upon completion of this form, fax to Air Sciences at 303-279-3796

EAST PLANT

BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 3/13/2015

Time: 1:41

Operator: Mary Morissette

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual).
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☐
☐	☐

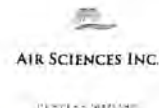
1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: Mary Morissette

EAST PLANT

BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 05 20 2015 ✓

Time: 2:04 ✓

Operator: Kam Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 03/04 → Delta-Pressure ✓ GG
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓
	✓
	✓
	✓

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: Kam Ballard

EAST PLANT

BAM PM10 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 3/25/2015 ✓ Time: 12:30 ✓

Operator: K Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). Power Fail 3/22 ✓ CG
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO CG

	✓
	✓
	✓
	✓
	✓

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO CG

	✓
	✓

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO CG

	✓
	✓

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO CG

	✓
	✓

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: Kam Ballard

EAST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 01/08/2015

Time: 1:28

Operator: Karen Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 01/02 → BAM Cal 50% ✓ 66-
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: Karen Ballard

EAST PLANT
 BAM PM 2.5 WEEKLY SITE CHECK FORM
 RESOLUTION MONITORING PROJECT
 PROJECT NO. 262-1



Date: 01/15/2015 Time: 12:36 Operator: K. Ball

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day. DI
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 01/02 → BAM OR Membrane S6
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: K. Ball

EAST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 1-23-15 Time: 14:45 Operator: K. Baak

I. BAM SAMPLER – Weekly Checks.

YES	NO	
☒	☐	1. The sampler is intact and the inlet head is unobstructed.
☒	☐	2. The vacuum pump is running and sounds normal.
☒	☐	3. The temperature shield is intact, and the sensor is inside of it.
☒	☐	4. The BAM is reading the correct time and day.
☒	☐	5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
☒	☐	6. Error log was checked (F3), and errors followed up on (see manual). <u>1/18 - 1/21</u> <u>BAM Membran 5%.</u>
☒	☐	7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool) <u>EG.</u>

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO EG.

☐	☒	1. Inlet Flow check Performed
☐	☒	2. Visual inspection and dust removal
☐	☒	3. Leak check performed
☐	☒	4. PM10 and 2.5 cyclone particle trap cleaned
☐	☒	5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO EG.

☐	☒	1. Filter tape replaced
☐	☒	2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO EG.

☐	☒	1. Replaced muffler on the pump (*Work performed by Air Sciences)
☐	☒	2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO EG.

☐	☒	1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
☐	☒	2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: K. Baak

EAST PLANT
 BAM PM 2.5 WEEKLY SITE CHECK FORM
 RESOLUTION MONITORING PROJECT
 PROJECT NO. 262-1



Date: 02-05-15

Time: 10:57

Operator: Kam Balla

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 1/27 - Maintenance ✓ GB
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: Kam Balla

EAST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 02/11/2015

Time: 3:17

Operator: Kanu Ballard

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 01/27 - Maintenance **V66**
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO **V66**

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

III. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO **V66**

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO **V66**

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO **V66**

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences:

Signature: Kanu Ballard

EAST PLANT

BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 02-19-2015 Time: 1:57

Operator: Kane B. C. d

I. BAM SAMPLER – Weekly Checks.

YES NO

☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 01/27 → Maint. 16.6-
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66-

☐	☒
☐	☒
☐	☒
☐	☒
☐	☒

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

☐	☒
☐	☒

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66

☐	☒
☐	☒

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 66-

☐	☒
☐	☒

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

Comments/Unusual Occurrences: _____

Signature: [Signature]

EAST PLANT
BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 3/04/2015 Time: 12:56 Operator: Kame B. Clend

I. BAM SAMPLER – Weekly Checks.

YES	NO	
☒	☐	1. The sampler is intact and the Inlet head is unobstructed.
☒	☐	2. The vacuum pump is running and sounds normal.
☒	☐	3. The temperature shield is intact, and the sensor is inside of it.
☒	☐	4. The BAM is reading the correct time and day.
☒	☐	5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
☒	☐	6. Error log was checked (F3), and errors followed up on (see manual). <u>03/02 Tape sensor</u>
☒	☐	7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO	
☒	☐	1. Inlet Flow check Performed
☒	☐	2. Visual inspection and dust removal
☒	☐	3. Leak check performed
☐	☒	4. PM10 and 2.5 cyclone particle trap cleaned
☒	☐	5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO	
☒	☒	1. Filter tape replaced
☒	☐	2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO	
☐	☒	1. Replaced muffler on the pump (*Work performed by Air Sciences)
☐	☒	2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO	
☐	☒	1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
☐	☒	2. Inlet system cleaned (*Work performed by Air Sciences)

"Comments/Unusual Occurrences: Self Test "Passed"

Signature: Kame B. Clend



Monthly Flow Verification PM_{2.5}

East Plant
PARTICULATE MONITORING PROJECT
PROJECT NO. 262-1

Met One PM_{2.5}: S/N: 60464
Firmware: Delta Cal S/N:
Calibrator:

Date of Flow Audit: 09/04/2015
Time of Flow Audit: 2:20

	BAM	STD
Ambient Temperature (AT) °C	11.6	11.0
Barometric Pressure mmHg	1254	1252

	Set Point (lpm)	BAM	% Diff (1)	STD Flow Meter	% Diff (2)	
(1) Actual Flow	15	15.0	0%	14.91	0.6%	gr
Acceptable Differential		14.700 - 15.300	+/- 2%	14.250 - 15.750	+/- 5%	
(2) Actual Flow	18.4	18.4	0%	18.28	0.7%	gr
Acceptable Differential		18.032 - 18.768	+/- 2%	17.480 - 19.320	+/- 5%	
(3) Actual Flow	16.7	16.7	0%	16.10	0.6%	gr
Acceptable Differential		16.336 - 17.034	+/- 2%	15.865 - 17.535	+/- 5%	

Calculations:

- (1) % Diff = [(BAM - Set Point)/Set Point]*100 (+/- 2%)
(2) % Diff = [(BAM - Calibrator)/Calibrator]*100 (+/- 5%)

(2) Leak Test BAM 0.5 Should be < 1.0 LPM

Comments/Abnormalities:

Self Test Passed

*PM_{2.5} data invalidated for 15:00 MST, gr

Signature:

Rami Kallala

Upon completion of this form, fax to Air Sciences at 303-279-3796

EAST PLANT

BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 3.13.2015

Time: 1:43

Operator: Mary Morissette

I. BAM SAMPLER – Weekly Checks.

YES	NO
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual).
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☐	☐
☐	☐

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☐	☐
☐	☐

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES	NO
☐	☐
☐	☐

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

**Comments/Unusual Occurrences: _____

Signature: Mary Morissette

EAST PLANT

BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 03-20-2015 ✓ Time: 2:08 ✓ Operator: Kanu Belland

I. BAM SAMPLER – Weekly Checks.

YES NO

✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 3/4 Maintenance ✓ 66
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓
	✓
	✓
	✓

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO

	✓
	✓

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

Comments/Unusual Occurrences: _____

Signature: Kanu Belland

EAST PLANT

BAM PM 2.5 WEEKLY SITE CHECK FORM
RESOLUTION MONITORING PROJECT
PROJECT NO. 262-1



Date: 3/25/2015 ✓ Time: 12:42 ✓

Operator: Kame B. O'Quinn

I. BAM SAMPLER – Weekly Checks.

YES NO

✓	
✓	
✓	
✓	
✓	
✓	
✓	

1. The sampler is intact and the inlet head is unobstructed.
2. The vacuum pump is running and sounds normal.
3. The temperature shield is intact, and the sensor is inside of it.
4. The BAM is reading the correct time and day.
5. The tape is in the proper position and does not need to be changed (tape should be changed every 2 months).
6. Error log was checked (F3), and errors followed up on (see manual). 3/22 → Power Fail ✓ 6.6
7. Climate control appears operational (If it's cold out the shelter should feel warm, if it's hot out the shelter should feel cool)

II. BAM SAMPLER – Routine Maintenance (monthly). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 6.6

	✓
	✓
	✓
	✓
	✓

1. Inlet Flow check Performed
2. Visual inspection and dust removal
3. Leak check performed
4. PM10 and 2.5 cyclone particle trap cleaned
5. Inlet nozzle and nozzle are cleaned

II. BAM SAMPLER – Routine Maintenance (every 2 months). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 6.6

	✓
	✓

1. Filter tape replaced
2. Ran the Self-Test function

III. BAM SAMPLER – Routine Maintenance (semiannual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 6.6

	✓
	✓

1. Replaced muffler on the pump (*Work performed by Air Sciences)
2. Complete calibration of flow system (*Work performed by Air Sciences)

IV. BAM SAMPLER – Routine Maintenance (annual). Check yes if maintenance was performed during this visit. See page 56 of BAM manual.

YES NO 6.6

	✓
	✓

1. Carbon vanes in pump checked/replaced (*Work performed by Air Sciences)
2. Inlet system cleaned (*Work performed by Air Sciences)

Comments/Unusual Occurrences: _____

Signature: Kame B. O'Quinn

Appendix H: East Plant SO₂, NO_x, and O₃ Site Check and Audit Forms

East Plant
SO₂ Level 1 Zero and Span Calibration
Resolution Copper Mining



01/19/15 PORTLAND

Operator: <i>R. ATTREIDGE</i>	Teledyne API T100 SO ₂ Analyzer S/N	<i>193</i>	Calibration Start Time	<i>1543</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Calibration Stop Time	<i>1630</i>
Date: <i>1-27-15</i>	NIST Traceable Gas Conc.	<i>40.4</i>	T100 Analyzer Range	<i>500 ppb</i>
			Shelter Temperature (5-40 °C)	<i>22.2</i>

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	SO ₂ Response	Analyzer Stability	Acceptance Criteria	Final Response
Zero Air	<i>0.0</i>	<i>0.23</i>	<i>0.16</i>	Zero Drift $\leq \pm 1.5\%$	<i>-0.13</i>
400 ppb	<i>400</i>	<i>308.3</i>	<i>0.7</i>	Span Drift $\leq \pm 10\%$	<i>427.8</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	<i>-0.13</i>	<i>0.34</i>	± 2 ppb	<i>NO</i>
400 ppb	<i>427.8</i>	<i>428.8</i>	± 2 ppb	<i>NO</i>

Analyzer Parameters

Sample Flow (650 $\pm$ 65 cc/min)	<i>624</i>	Sample Press. (Ambient $\pm$ 2 in-Hg)	<i>25.9</i>
UV Lamp (1000 - 4800 mV)	<i>2093.1</i>	Lamp Ratio (30 - 120%)	<i>88.5</i>
Slope (1 $\pm$ 0.3)	<i>1.116</i>	BOX Temp. (Ambient $\pm$ 5°C)	<i>33.3</i>
Offset (< 250 mV)	<i>25.5</i>	HVPS (400 - 900 V)	<i>614</i>

Operator Comments:

*Changed particle filter
1500-1600 hrs FANALIO - RPA*

Operator Signature:

Rory Attreidge

East Plant
SO₂ Level 1 Zero and Span Calibration
Resolution Copper Mining



DENVER • PORTLAND

Operator: <i>Kenn Ballard</i> Date: <i>02-19-2015</i>	Teledyne API T100 SO ₂ Analyzer S/N	<i>193</i>	Calibration Start Time	<i>2:45</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Calibration Stop Time	<i>3:10</i>
	NIST Traceable Gas Conc.	<i>40 ± 1%</i>	T100 Analyzer Range	<i>500 PPM</i>
			Shelter Temperature (5-40 °C)	<i>22.50</i>

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	SO ₂ Response	Analyzer Stability	Acceptance Criteria	Final Response
Zero Air	<i>0</i>	<i>0.017</i>	<i>0.143</i>	Zero Drift ≤ ±1.5 %	<i>No</i>
400 ppb	<i>400</i>	<i>401.260</i>	<i>0.404</i>	Span Drift ≤ ±10 %	<i>No</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	<i>0.017</i>	<i>0.09</i>	± 2 ppb	<i>No</i>
400 ppb	<i>401.260</i>	<i>402.494</i>	± 2 ppb	<i>No</i>

Analyzer Parameters

Sample Flow (650 ± 65 cc/min)	<i>622</i>	Sample Press. (Ambient ± 2 in-Hg)	<i>25.8</i>
UV Lamp (1000 - 4800 mV)	<i>2098.2</i>	Lamp Ratio (30 - 120%)	<i>88.8</i>
Slope (1 ± 0.3)	<i>1.070</i>	BOX Temp. (Ambient ± 5°C)	<i>33.1</i>
Offset (< 250 mV)	<i>25.8</i>	HVPS (400 - 900 V)	<i>614</i>

Operator Comments:

Operator Signature: *Kenn Ballard*

Resolution Copper Mining
East Plant Monitoring Station
SO₂ Level 1 Zero and Span Calibration



BIRYIE • PORTLAND

Operator: <i>Kami Ballard</i> Date: <i>03/04/2015</i>	Teledyne API T100 SO ₂ Analyzer S/N	<i>193</i>	Calibration Start Time	<i>1:35</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Calibration Stop Time	<i>1:54</i>
	NIST Traceable Gas Conc.	<i>40%</i>	T100 Analyzer Range	<i>500 PPB</i>
			Shelter Temperature (5-40 °C)	<i>28.54</i>

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	SO ₂ Response	Analyzer Stability	Acceptance Criteria	Final Response
Zero Air	<i>0</i>	<i>-0.022</i>	<i>0.152</i>	Zero Drift $\leq \pm 1.5\%$	<i>-0.022</i>
400 ppb	<i>400</i>	<i>402.143</i>	<i>0.554</i>	Span Drift $\leq \pm 10\%$	<i>402.143</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	<i>-0.022</i>	<i>0.39</i>	± 2 ppb	<i>No</i>
400 ppb	<i>402.143</i>	<i>403.52</i>	± 2 ppb	<i>No</i>

Analyzer Parameters

Sample Flow (650 $\pm$ 65 cc/min)	<i>619</i>	Sample Press. (Ambient $\pm$ 2 in-Hg)	<i>25.7</i>
UV Lamp (1000 - 4800 mV)	<i>2102.4</i>	Lamp Ratio (30 - 120%)	<i>89.1</i>
Slope (1 $\pm$ 0.3)	<i>1.070</i>	BOX Temp. (Ambient $\pm$ 5°C)	<i>32.7</i>
Offset (< 250 mV)	<i>25.8</i>	HVPS (400 - 900 V)	<i>614</i>

Operator Comments:

Operator Signature:

Kami Ballard

Resolution Copper Mining
East Plant Monitoring Station
SO₂ Level 1 Zero and Span Calibration



AIR SCIENCES INC.

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Operator: <i>Kami Ballard</i>	Teledyne API T100 SO ₂ Analyzer S/N	<i>193</i>	Calibration Start Time	<i>2:48</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Calibration Stop Time	<i>3:04</i>
Date: <i>3/20/2015</i>	NIST Traceable Gas Conc.	<i>40%</i>	T100 Analyzer Range	<i>500PPB</i>
			Shelter Temperature (5-40 ° C)	<i>21.40</i>

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	SO ₂ Response	Analyzer Stability	Acceptance Criteria	Final Response
Zero Air	<i>0</i>	<i>-2.30</i>	<i>0.287</i>	Zero Drift $\leq \pm 1.5\%$	<i>-0.010</i>
400 ppb	<i>400</i>	<i>0.722</i>	<i>400.714</i>	Span Drift $\leq \pm 10\%$	<i>401.080</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	<i>-2.30</i>	<i>0.36</i>	± 2 ppb	<i>No</i>
400 ppb	<i>400.714</i>	<i>401.83</i>	± 2 ppb	<i>No</i>

Analyzer Parameters

Sample Flow (650 $\pm$ 65 cc/min)	<i>623</i>	Sample Press. (Ambient $\pm$ 2 in-Hg)	<i>25.8</i>
UV Lamp (1000 - 4800 mV)	<i>2111.1</i>	Lamp Ratio (30 - 120%)	<i>89.3</i>
Slope (1 $\pm$ 0.3)	<i>1.075</i>	BOX Temp. (Ambient $\pm$ 5°C)	<i>32.6</i>
Offset (< 250 mV)	<i>26.0</i>	HVPS (400 - 900 V)	<i>614</i>

Operator Comments:



INITIATED THE 15001605 HOURS CONCENTRATION - RPA

Operator Signature:

Kami Ballard

Resolution Copper Mining
East Plant Monitoring Station
SO₂ Level 1 Zero and Span Calibration



AIR SCIENCES INC.

DESIGN • CONSTRUCTION

Operator:	Teledyne API T100 SO ₂ Analyzer S/N	193	Calibration Start Time	1:17
Date:	Teledyne API T700 Primary Standard Dilution Calibrator S/N	191	Calibration Stop Time	1:34
	NIST Traceable Gas Conc.	40%	T100 Analyzer Range	500 PPM
			Shelter Temperature (5-40 ° C)	23.64

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	SO ₂ Response	Analyzer Stability	Acceptance Criteria	Final Response
Zero Air	0	0.060	0.557	Zero Drift $\leq \pm 1.5\%$	0.272
400 ppb	400	401.37	0.259	Span Drift $\leq \pm 10\%$	0.259

400.264

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	0.060	0.43	± 2 ppb	No
400 ppb	401.37	402.37	± 2 ppb	No

Analyzer Parameters

Sample Flow (650 $\pm$ 65 cc/min)	621	Sample Press. (Ambient $\pm$ 2 in-Hg)	25.8
UV Lamp (1000 - 4800 mV)	2103.4	Lamp Ratio (30 - 120%)	89.0
Slope (1 $\pm$ 0.3)	1.075	BOX Temp. (Ambient $\pm$ 5°C)	32.3
Offset (< 250 mV)	28.7	HVPS (400 - 900 V)	614

Operator Comments:

Operator Signature:

Kanu Ballera

Resolution Copper Mining
East Plant Monitoring Station
SO₂ Level 2 Zero and Span Verification



DENVER • PORTLAND

Operator: <i>Kami Ballard</i> Date: <i>01/15/2015</i>	Teledyne API T100 SO ₂ Analyzer S/N	<i>143</i>	Verification Start Time	<i>1:20</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Verification Stop Time	<i>1:34</i>
	NIST Traceable Gas Conc.	<i>40%</i>	T100 Analyzer Range	<i>500 PPM</i>
			Shelter Temperature (5-40 °C)	<i>23.6</i>

Biweekly Manual Level 2 Zero and Span Verification

Target Dilution (ppb)	Actual Target Dilution Generated	NO ₂ Response	Analyzer Stability	Acceptance Criteria	Adjustment Required?
Zero Air	<i>0</i>	<i>-0.085</i>	<i>0.068</i>	Zero Drift $\leq \pm 1.5\%$	<i>No</i>
400 ppb	<i>400</i>	<i>392.328</i>	<i>0.304</i>	Span Drift $\leq \pm 10\%$	<i>No</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	<i>-0.085</i>	<i>0.364</i>	± 2 ppb	<i>No</i>
400 ppb	<i>392.328</i>	<i>393.05</i>	± 2 ppb	<i>No</i>

Analyzer Parameters

Sample Flow (650 $\pm$ 65 cc/min)	<i>634</i>	Sample Press. (Ambient $\pm$ 2 in-Hg)	<i>26.3</i>
UV Lamp (1000 - 4800 mV)	<i>2111.9</i>	Lamp Ratio (30 - 120%)	<i>89.3</i>
Slope (1 $\pm$ 0.3)	<i>1.064</i>	BOX Temp. (Ambient $\pm$ 5°C)	<i>33.4</i>
Offset (< 250 mV)	<i>25.1</i>	HVPS (400 - 900 V)	<i>614</i>

Operator Comments: *INVALIDATED THE 1400 HRS CONCENTRATION FOR SO₂ - R. ATTITUDE*

Operator Signature: *Kami Ballard*

Resolution Copper Mining
East Plant Monitoring Station
SO₂ Level 2 Zero and Span Verification



DENVER, COLORADO

Operator: <i>Kami Ballard</i>	Teledyne API T100 SO ₂ Analyzer S/N	<i>193</i>	Verification Start Time	<i>11:01</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Verification Stop Time	<i>11:30</i>
Date: <i>02/05/2015</i>	NIST Traceable Gas Conc.	<i>40%</i>	T100 Analyzer Range	<i>500 PPM</i>
			Shelter Temperature (5-40 °C)	<i>22.46</i>

Biweekly Manual Level 2 Zero and Span Verification

Target Dilution (ppb)	Actual Target Dilution Generated	NO ₂ Response	Analyzer Stability	Acceptance Criteria	Adjustment Required?
Zero Air	<i>0</i>	<i>-0.099</i>	<i>0.054</i>	Zero Drift $\leq \pm 1.5\%$	<i>No</i>
400 ppb	<i>400</i>	<i>413.589</i>	<i>0.984</i>	Span Drift $\leq \pm 10\%$	<i>No</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	<i>-0.099</i>	<i>-0.016</i>	± 2 ppb	<i>No</i>
400 ppb	<i>413.589</i>	<i>414.532</i>	± 2 ppb	<i>No</i>

Analyzer Parameters

Sample Flow (650 $\pm$ 65 cc/min)	<i>625</i>	Sample Press. (Ambient $\pm$ 2 in-Hg)	<i>26.0</i>
UV Lamp (1000 - 4800 mV)	<i>2896.3</i>	Lamp Ratio (30 - 120%)	<i>88.7</i>
Slope (1 $\pm$ 0.3)	<i>1.166</i>	BOX Temp. (Ambient $\pm$ 5°C)	<i>33.7</i>
Offset (< 250 mV)	<i>25.5</i>	HVPS (400 - 900 V)	<i>614</i>

Operator Comments:

** 1100-1200 HRS CONCENTRATIONS
 INVALIDATED AS A RESULT OF
 LEVEL 2 PROBLEMS - RPA*

Operator Signature:

Kami Ballard

East Plant
NOx Level 1 Zero and Span Calibration
Resolution Copper Mining



DENVER • TORRANS

Operator: <i>R. ARMSTRONG</i>	Teledyne API T200 NOx Analyzer S/N	<i>197</i>	Calibration Start Time	<i>1543</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Calibration Stop Time	<i>1830</i>
Date: <i>1/27/15</i>	NIST Traceable Gas Conc.	<i>40.1</i>	T200 Analyzer Range	<i>500ppb</i>
			Shelter Temperature (5-40 ° C)	<i>22.2</i>

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	NO Response	NO ₂ Response	NOx Response	Analyzer Stability	Acceptance Criteria	Final NOx / Zero Response
Zero Air	<i>ZERO</i>	<i>0.0</i>	<i>-1.7</i>	<i>-1.7</i>	<i>0.8</i>	Zero Drift $\leq \pm 1.5\%$	<i>0.1</i>
400 ppb	<i>400</i>	<i>379.8</i>	<i>0.2</i>	<i>379.1</i>	<i>0.9</i>	Span Drift $\leq \pm 10\%$	<i>398.1</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)		Logger Response (ppb)		Acceptance Criteria	Adjustment Required?
Zero Air	NO	<i>0.0</i>	NO	<i>-0.14</i>	± 2 ppb	<i>NO</i>
	NO ₂	<i>0.1</i>	NO ₂	<i>0.06</i>		
	NO _x	<i>0.1</i>	NO _x	<i>0.14</i>		
400 ppb	NO	<i>395.4</i>	NO	<i>395.7</i>	± 2 ppb	<i>NO</i>
	NO ₂	<i>2.4</i>	NO ₂	<i>2.1</i>		
	NO _x	<i>398.1</i>	NO _x	<i>398.7</i>		

Analyzer Parameters

Sample Flow (500 $\pm$ 50 cc/min)	<i>476</i>	Moly Temp. (315 $\pm$ 5°C)	<i>316.6</i>
Ozone Flow (80 $\pm$ 15 cc/min)	<i>81</i>	HVPS (400 - 900 V)	<i>643</i>
NOx Slope (1 $\pm$ 0.3)	<i>1.340</i>	NO Slope (1 $\pm$ 0.3)	<i>1.345</i>
NOx Offset (0 $\pm$ 100)	<i>3.4</i>	NO Offset (0 $\pm$ 100)	<i>-0.6</i>

Operator Comments: *NOx & NO slope almost outside of the recommended threshold - new particle filter changed 1600-1900 hrs 2/2/15*

Operator Signature:

Roy Atty

East Plant
NOx Level 1 Zero and Span Calibration
Resolution Copper Mining



DENVER • PORTLAND

Operator:	Teledyne API T200 NOx Analyzer S/N	197	Calibration Start Time	2:12
<i>Kami Ballard</i>	Teledyne API T700 Primary Standard Dilution Calibrator S/N	191	Calibration Stop Time	2:45
Date:	NIST Traceable Gas Conc.	40%	T200 Analyzer Range	500 ppb
02/19/2015			Shelter Temperature (5-40 °C)	23.74

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	NO Response	NO ₂ Response	NOx Response	Analyzer Stability	Acceptance Criteria	Final NOx/Zero Response
Zero Air	0	-0.1	0.3	0.2	0.1	Zero Drift $\leq \pm 1.5\%$	No
400 ppb	400	395.2	-3.1	392.1	0.7	Span Drift $\leq \pm 10\%$	No

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)		Logger Response (ppb)		Acceptance Criteria	Adjustment Required?
Zero Air	NO	-0.1	NO	-0.16	± 2 ppb	No
	NO ₂	0.3	NO ₂	-0.06		
	NO _x	0.2	NO _x	0.21		
400 ppb	NO	395.2	NO	395.91	± 2 ppb	No
	NO ₂	-3.1	NO ₂	-3.29		
	NO _x	392.1	NO _x	393.46		

Analyzer Parameters

Sample Flow (500 $\pm$ 50 cc/min)	478	Moly Temp. (315 $\pm$ 5°C)	315.0
Ozone Flow (80 $\pm$ 15 cc/min)	80	HVPS (400 - 900 V)	674
NOx Slope (1 $\pm$ 0.3)	0.938	NO Slope (1 $\pm$ 0.3)	0.944
NOx Offset (0 $\pm$ 100)	6.0	NO Offset (0 $\pm$ 100)	0.2

Operator Comments:

Operator Signature:

Kami Ballard

Resolution Copper Mining
East Plant Monitoring Station
NOx Level 1 Zero and Span Calibration



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Operator: <i>Kami Ballard</i>	Teledyne API T200 NOx Analyzer S/N	<i>197</i>	Calibration Start Time	<i>1:14</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Calibration Stop Time	<i>1:34</i>
	NIST Traceable Gas Conc.	<i>40%</i>	T200 Analyzer Range	<i>500 PPB</i>
Date: <i>03/04/2015</i>			Shelter Temperature (5-40 °C)	<i>25.19</i>

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	NO Response	NO ₂ Response	NO _x Response	Analyzer Stability	Acceptance Criteria	Final NO _x /Zero Response
Zero Air	<i>0</i>	<i>-0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.6</i>	Zero Drift $\leq \pm 1.5\%$	<i>0.1</i>
400 ppb	<i>400</i>	<i>401.3</i>	<i>-0.9</i>	<i>400.4</i>	<i>0.8</i>	Span Drift $\leq \pm 10\%$	<i>400.4</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)		Logger Response (ppb)		Acceptance Criteria	Adjustment Required?
Zero Air	NO	<i>-0.0</i>	NO	<i>-0.26</i>	± 2 ppb	<i>No</i>
	NO ₂	<i>0.1</i>	NO ₂	<i>-0.03</i>		
	NO _x	<i>0.1</i>	NO _x	<i>-0.06</i>		
400 ppb	NO	<i>401.3</i>	NO	<i>401.25</i>	± 2 ppb	<i>No</i>
	NO ₂	<i>-0.9</i>	NO ₂	<i>-1.14</i>		
	NO _x	<i>400.4</i>	NO _x	<i>400.42</i>		

Analyzer Parameters

Sample Flow (500 $\pm$ 50 cc/min)	<i>477</i>	Moly Temp. (315 $\pm$ 5°C)	<i>315.4</i>
Ozone Flow (80 $\pm$ 15 cc/min)	<i>80</i>	HVPS (400 - 900 V)	<i>674</i>
NO _x Slope (1 $\pm$ 0.3)	<i>0.938</i>	NO Slope (1 $\pm$ 0.3)	<i>0.944</i>
NO _x Offset (0 $\pm$ 100)	<i>6.0</i>	NO Offset (0 $\pm$ 100)	<i>0.2</i>

Operator Comments:

Operator Signature:

Kami Ballard

Resolution Copper Mining
East Plant Monitoring Station
NOx Level 1 Zero and Span Calibration



AIR SCIENCES INC.

03/20/2015

Operator: <i>Kame Ballard</i>	Teledyne API T200 NOx Analyzer S/N	<i>197</i>	Calibration Start Time	<i>2:10</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Calibration Stop Time	<i>2:48</i>
Date: <i>03/20/2015</i>	NIST Traceable Gas Conc.	<i>40%</i>	T200 Analyzer Range	<i>500PPB</i>
			Shelter Temperature (5-40 ° C)	<i>24.62</i>

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	NO Response	NO ₂ Response	NO _x Response	Analyzer Stability	Acceptance Criteria	Final NO _x /Zero Response
Zero Air	<i>0</i>	<i>-0.5</i>	<i>7.5</i>	<i>7.0</i>	<i>0.8</i>	Zero Drift $\leq \pm 1.5\%$	<i>-0.5</i>
400 ppb	<i>400</i>	<i>378.6</i>	<i>-1.0</i>	<i>377.9</i>	<i>0.8</i>	Span Drift $\leq \pm 10\%$	<i>408.2 ??</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)		Logger Response (ppb)		Acceptance Criteria	Adjustment Required?
Zero Air	NO	<i>-0.5</i>	NO	<i>-0.74</i>	± 2 ppb	<i>No</i>
	NO ₂	<i>7.5</i>	NO ₂	<i>7.39</i>		
	NO _x	<i>7.0</i>	NO _x	<i>7.02</i>		
400 ppb	NO	<i>378.6</i>	NO	<i>379.8</i>	± 2 ppb	<i>No</i>
	NO ₂	<i>-1.0</i>	NO ₂	<i>-1.19</i>		
	NO _x	<i>377.9</i>	NO _x	<i>379.22</i>		

Analyzer Parameters

Sample Flow (500 $\pm$ 50 cc/min)	<i>487</i>	Moly Temp. (315 $\pm$ 5°C)	<i>315.3</i>
Ozone Flow (80 $\pm$ 15 cc/min)	<i>80</i>	HVPS (400 - 900 V)	<i>674</i>
NOx Slope (1 $\pm$ 0.3)	<i>1.007</i>	NO Slope (1 $\pm$ 0.3)	<i>0.986</i>
NOx Offset (0 $\pm$ 100)	<i>22.8</i>	NO Offset (0 $\pm$ 100)	<i>0.7</i>

Operator Comments: *INVALIDATED THE 1000hrs hourly concentration - RPA*

Operator Signature: *Kame Ballard*

Resolution Copper Mining
East Plant Monitoring Station
NOx Level 1 Zero and Span Calibration



AIR SCIENCES INC.

TELETYPE • TELEPHONE

Operator: <i>Kami Ballard</i>	Teledyne API T200 NOx Analyzer S/N	<i>197</i>	Calibration Start Time	<i>12:38</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Calibration Stop Time	<i>1:16</i>
Date: <i>8/25/2015</i>	NIST Traceable Gas Conc.	<i>40%</i>	T200 Analyzer Range	<i>500 PPB</i>
			Shelter Temperature (5-40 ° C)	<i>23.46</i>

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	NO Response	NO ₂ Response	NOx Response	Analyzer Stability	Acceptance Criteria	Final NOx/Zero Response
Zero Air	<i>0</i>	<i>-0.2</i>	<i>0.3</i>	<i>0.1</i>	<i>0.3</i>	Zero Drift $\leq \pm 1.5\%$	<i>-0.1</i>
400 ppb		<i>400.1</i>	<i>-0.3</i>	<i>399.6</i>	<i>0.9</i>	Span Drift $\leq \pm 10\%$	<i>400.5</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)		Logger Response (ppb)		Acceptance Criteria	Adjustment Required?
Zero Air	NO	<i>-0.2</i>	NO	<i>-0.97</i>	± 2 ppb	<i>No</i>
	NO ₂	<i>-0.3</i>	NO ₂	<i>-0.69</i>		
	NO _x	<i>0.1</i>	NO _x	<i>-0.64</i>		
400 ppb	NO	<i>400.1</i>	NO	<i>399.86</i>	± 2 ppb	<i>No</i>
	NO ₂	<i>-0.3</i>	NO ₂	<i>-0.62</i>		
	NO _x	<i>399.6</i>	NO _x	<i>399.69</i>		

Analyzer Parameters

Sample Flow (500 $\pm$ 50 cc/min)	<i>478</i>	Moly Temp. (315 $\pm$ 5°C)	<i>314.9</i>
Ozone Flow (80 $\pm$ 15 cc/min)	<i>80</i>	HVPS (400 - 900 V)	<i>1674</i>
NOx Slope (1 $\pm$ 0.3)	<i>0.988</i>	NO Slope (1 $\pm$ 0.3)	<i>0.986</i>
NOx Offset (0 $\pm$ 100)	<i>7.1</i>	NO Offset (0 $\pm$ 100)	<i>0.5</i>

Operator Comments:

Operator Signature:

Kami Ballard

Resolution Copper Mining
East Plant Monitoring Station
NOx Level 2 Zero and Span Verification



DENVER • PORTLAND

Operator: <i>Kami Ballard</i> Date: <i>01/15/2015</i>	Teledyne API T200 NOx Analyzer S/N	<i>197</i>	Verification Start Time	<i>12:58</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Verification Stop Time	<i>1:20</i>
	NIST Traceable Gas Conc.	<i>40%</i>	T200 Analyzer Range	<i>500PPB</i>
			Shelter Temperature (5-40 °C)	<i>24.61</i>

Biweekly Manual Level 2 Zero and Span Verification

Target Dilution (ppb)	Actual Target Dilution Generated	NO Response	NO ₂ Response	NOx Response	Analyzer Stability	Acceptance Criteria	Adjustment Required?
Zero Air	<i>0</i>	<i>0.6</i>	<i>-2.2</i>	<i>-1.6</i>	<i>0.5</i>	Zero Drift $\leq \pm 1.5\%$	<i>No</i>
400 ppb	<i>400</i>	<i>383.7</i>	<i>0.2</i>	<i>384.0</i>	<i>0.4</i>	Span Drift $\leq \pm 10\%$	<i>No</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)			Logger Response (ppb)			Acceptance Criteria	Adjustment Required?
Zero Air	NO	<i>0.6</i>		NO	<i>0.45</i>		± 2 ppb	<i>No</i>
	NO ₂	<i>-2.2</i>		NO ₂	<i>-2.34</i>			
	NO _x	<i>-1.6</i>		NO _x	<i>-1.62</i>			
400 ppb	NO	<i>383.7</i>		NO	<i>383.74</i>		± 2 ppb	<i>No</i>
	NO ₂	<i>0.2</i>		NO ₂	<i>-0.09</i>			
	NO _x	<i>384.0</i>		NO _x	<i>384.33</i>			

Analyzer Parameters

Sample Flow (500 $\pm$ 50 cc/min)	<i>487</i>	Moly Temp. (315 $\pm$ 5°C)	<i>516.3</i>
Ozone Flow (80 $\pm$ 15 cc/min)	<i>31</i>	HVPS (400 - 900 V)	<i>1.43</i>
NOx Slope (1 $\pm$ 0.3)	<i>1.292</i>	NO Slope (1 $\pm$ 0.3)	<i>1.282</i>
NOx Offset (0 $\pm$ 100)	<i>5.9</i>	NO Offset (0 $\pm$ 100)	<i>0.4</i>

Operator Comments:

INVALIDATED THE 1300 AND 1400 HRS CONCENTRATIONS FOR NOx - R. ATTENAK

Operator Signature:

Kami Ballard

East Plant
NOx Level 1 Zero and Span Verification
Resolution Copper Mining



DENVER • TORRANCE

Operator: <i>R. Arradice</i>	Teledyne API T200 NOx Analyzer S/N	<i>197</i>	Verification Start Time	<i>1543</i>	<i>1000</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Verification Stop Time	<i>1830</i>	<i>1180</i>
	NIST Traceable Gas Conc.	<i>40.1</i>	T200 Analyzer Range	<i>500 ppb</i>	
Date: <i>1/29/15</i>			Shelter Temperature (5-40 °C)	<i>28.6</i>	

Biweekly Manual Level 2 Zero and Span Verification

Target Dilution (ppb)	Actual Target Dilution Generated	NO Response	NO ₂ Response	NOx Response	Analyzer Stability	Acceptance Criteria	Adjustment Required?
Zero Air	<i>0.0</i>	<i>-0.2</i>	<i>0.2</i>	<i>0.0</i>	<i>0.1</i>	Zero Drift $\leq \pm 1.5\%$	<i>0.0</i>
400 ppb	<i>400</i>	<i>413.3</i>	<i>1.4</i>	<i>414.4</i>	<i>0.8</i>	Span Drift $\leq \pm 10\%$	<i>406.6</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)		Logger Response (ppb)		Acceptance Criteria	Adjustment Required?
Zero Air	NO	<i>0.0</i>	NO	<i>-0.16</i>	± 2 ppb	<i>NO</i>
	NO ₂	<i>-0.0</i>	NO ₂	<i>-0.03</i>		
	NO _x	<i>-0.0</i>	NO _x	<i>-0.06</i>		
400 ppb	NO	<i>405.5</i>	NO	<i>404.9</i>	± 2 ppb	<i>NO</i>
	NO ₂	<i>0.5</i>	NO ₂	<i>0.1</i>		
	NO _x	<i>405.3</i>	NO _x	<i>405.4</i>		

Analyzer Parameters

Sample Flow (500 $\pm$ 50 cc/min)	<i>484</i>	Moly Temp. (315 $\pm$ 5°C)	<i>316.6</i>
Ozone Flow (80 $\pm$ 15 cc/min)	<i>81</i>	HVPS (400 - 900 V)	<i>674</i>
NOx Slope (1 $\pm$ 0.3)	<i>0.865</i>	NO Slope (1 $\pm$ 0.3)	<i>0.867</i>
NOx Offset (0 $\pm$ 100)	<i>2.4</i>	NO Offset (0 $\pm$ 100)	<i>-0.2</i>

Operator Comments: *NOx ANALYZER WAS LEFT — RPA*

Operator Signature:

Rory Atty

Resolution Copper Mining
East Plant Monitoring Station
NOx Level 2 Zero and Span Verification



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Operator: <i>Kami Ballard</i>	Teledyne API T200 NOx Analyzer S/N	<i>197</i>	Verification Start Time	<i>11:50</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Verification Stop Time	<i>12:27</i>
Date: <i>02-05-2015</i>	NIST Traceable Gas Conc.	<i>40%</i>	T200 Analyzer Range	<i>500 PPB</i>
			Shelter Temperature (5-40 °C)	<i>22.4</i>

* TAKEN FROM RAW DATA (Hourly)

Biweekly Manual Level 2 Zero and Span Verification

Target Dilution (ppb)	Actual Target Dilution Generated	NO Response	NO ₂ Response	NO _x Response	Analyzer Stability	Acceptance Criteria	Adjustment Required?
Zero Air	<i>10</i>	<i>0.1</i>	<i>1.0</i>	<i>1.2</i>	<i>0.3</i>	Zero Drift $\leq \pm 1.5\%$	<i>No</i>
400 ppb	<i>400</i>	<i>388.3</i>	<i>2.1</i>	<i>390.3</i>	<i>0.7</i>	Span Drift $\leq \pm 10\%$	<i>No</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)		Logger Response (ppb)		Acceptance Criteria	Adjustment Required?
Zero Air	NO	<i>0.1</i>	NO	<i>-0.17</i>	± 2 ppb	<i>No</i>
	NO ₂	<i>1.0</i>	NO ₂	<i>0.81</i>		
	NO _x	<i>1.2</i>	NO _x	<i>1.01</i>		
400 ppb	NO	<i>388.3</i>	NO	<i>388.26</i>	± 2 ppb	<i>No</i>
	NO ₂	<i>2.1</i>	NO ₂	<i>2.09</i>		
	NO _x	<i>390.3</i>	NO _x	<i>390.10</i>		

Analyzer Parameters

Sample Flow (500 $\pm$ 50 cc/min)	<i>481</i>	Moly Temp. (315 $\pm$ 5°C)	<i>315.1</i>
Ozone Flow (80 $\pm$ 15 cc/min)	<i>81</i>	HVPS (400 - 900 V)	<i>674</i>
NO _x Slope (1 $\pm$ 0.3)	<i>0.865</i>	NO Slope (1 $\pm$ 0.3)	<i>0.867</i>
NO _x Offset (0 $\pm$ 100)	<i>2.4</i>	NO Offset (0 $\pm$ 100)	<i>0.2</i>

Operator Comments:

Operator Signature:

~~#1~~ Optic Test :

#2 Optic Test :

PMT = 259.6 mV

PMT = 263.7

Kami Ballard
 - 1100-1300 HRS INVALID AS A RESULT OF THE LEVEL 2 OPTIC TESTING - RPA

East Plant
O₃ Level 1 Zero and Span Calibration
Resolution Copper Mining

Operator: R. Attridge Date: 01/27/2015	Teledyne API T400 O ₃ Analyzer S/N	224	Calibration Start Time	15:00
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	191	Calibration Stop Time	15:43
			T400 Analyzer Range	500ppb
			Shelter Temperature (5-40 ° C)	24.2

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	O ₃ Response	Analyzer Stability	Acceptance Criteria	Final Response
Zero Air	zero	-1.8	0.4	Zero Drift $\leq \pm 1.5\%$	0.5
400 ppb	401	397.7	0.7	Span Drift $\leq \pm 7\%$	401.3

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	0.500	0.900	± 2 ppb	no
400 ppb	401.300	401.900	± 2 ppb	no

Analyzer Parameters

Sample Flow (800 $\pm$ 80 cc/min)	755	Sample Temp. (10 - 50 °C)	40.6
Photo Lamp (58 $\pm$ 1 °C)	58.0	BOX Temp. (30 $\pm$ 20 °C)	28.8
Slope (1 $\pm$ 0.15)	1.027	O ₃ Measure (2500 - 4800 mV)	2804.0
Offset (0.0 $\pm$ 5 PPB)	-4.0	O ₃ Reference (2500 - 4800 mV)	2804.9

Operator Comments: *changed particle filter
1600 hrs FANUC - RPA*

Operator Signature:

Roy Attridge

East Plant
O₃ Level 1 Zero and Span Calibration
Resolution Copper Mining



DINITE • PORTLAND

Operator:	Teledyne API T400 O ₃ Analyzer S/N	224	Calibration Start Time	3:10
Date: <i>Kami Ballard</i> <i>02-19-2015</i>	Teledyne API T700 Primary Standard Dilution Calibrator S/N	191	Calibration Stop Time	
			T400 Analyzer Range	500 PPB
			Shelter Temperature (5-40 °C)	24.45

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	O ₃ Response	Analyzer Stability	Acceptance Criteria	Final Response
Zero Air	0	0.1	0.3	Zero Drift $\leq \pm 1.5\%$	No
400 ppb	400	400.1	0.5	Span Drift $\leq \pm 7\%$	No

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	0.1	0.62	± 2 ppb	No
400 ppb	400.1	400.37	± 2 ppb	No

Analyzer Parameters

Sample Flow (800 $\pm$ 80 cc/min)	754	Sample Temp. (10 - 50 °C)	40.0
Photo Lamp (58 $\pm$ 1 °C)	58.0	BOX Temp. (30 $\pm$ 20 °C)	28.2
Slope (1 $\pm$ 0.15)	1.017	O ₃ Measure (2500 - 4800 mV)	2777.3
Offset (0.0 $\pm$ 5 PPB)	3.5	O ₃ Reference (2500 - 4800 mV)	2787.0

Operator Comments:

Operator Signature: *Kami Ballard*

Resolution Copper Mining
East Plant Monitoring Station
O₃ Level 1 Zero and Span Calibration



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Operator:	Teledyne API T400 O ₃ Analyzer S/N	224	Calibration Start Time	1:55
<i>Kam Ballard</i>	Teledyne API T700 Primary Standard Dilution Calibrator S/N	191	Calibration Stop Time	2:11
Date:			T400 Analyzer Range	500 PPB
03/04/2015			Shelter Temperature (5-40 °C)	25.59

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	O ₃ Response	Analyzer Stability	Acceptance Criteria	Final Response
Zero Air	0	0.1	0.7	Zero Drift $\leq \pm 1.5\%$	0.1
400 ppb	400	400.2	0.5	Span Drift $\leq \pm 7\%$	400.2

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	0.1	0.53	± 2 ppb	No
400 ppb	400.2	400.95	± 2 ppb	No

Analyzer Parameters

Sample Flow (800 $\pm$ 80 cc/min)	751	Sample Temp. (10 - 50 °C)	41.0
Photo Lamp (58 $\pm$ 1 °C)	58.0	BOX Temp. (30 $\pm$ 20 °C)	28.7
Slope (1 $\pm$ 0.15)	1.018	O ₃ Measure (2500 - 4800 mV)	2768.3
Offset (0.0 $\pm$ 5 PPB)	3.3	O ₃ Reference (2500 - 4800 mV)	2774.8

Operator Comments:

Operator Signature:

Kam Ballard

Resolution Copper Mining
East Plant Monitoring Station
O₃ Level 1 Zero and Span Calibration



AIR SCIENCES INC.

FORM 1001 - 01/01/2011

Operator:	Teledyne API T400 O ₃ Analyzer S/N	224	Calibration Start Time	3:05
Date: 3/20/2015	Teledyne API T700 Primary Standard Dilution Calibrator S/N	191	Calibration Stop Time	3:23
			T400 Analyzer Range	500 PPB
			Shelter Temperature (5-40 °C)	23.18

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	O ₃ Response	Analyzer Stability	Acceptance Criteria	Final Response
Zero Air	0	-0.4	0.5	Zero Drift $\leq \pm 1.5\%$	0.2
400 ppb	400	398.2	0.8	Span Drift $\leq \pm 7\%$	399.8

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	-0.4	0.2	± 2 ppb	No
400 ppb	398.2	398.63	± 2 ppb	

Analyzer Parameters

Sample Flow (800 $\pm$ 80 cc/min)	641	Sample Temp. (10 - 50 °C)	40.3
Photo Lamp (58 $\pm$ 1 °C)	58.0	BOX Temp. (30 $\pm$ 20 °C)	28.1
Slope (1 $\pm$ 0.15)	1.019	O ₃ Measure (2500 - 4800 mV)	2762.4
Offset (0.0 $\pm$ 5 PPB)	3.4	O ₃ Reference (2500 - 4800 mV)	2762.5

Operator Comments:

INVALIDATED THE 1600 HRS
 Hourly Concentration - RPA

Operator Signature:

Kame Bellard

Resolution Copper Mining
East Plant Monitoring Station
O₃ Level 1 Zero and Span Calibration



AIR SCIENCES INC.

DESIGN • BUILD • OPERATE

Operator: <i>Kane Ballard</i>	Teledyne API T400 O ₃ Analyzer S/N	<i>224</i>	Calibration Start Time	<i>3:01</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Calibration Stop Time	<i>3:21</i>
Date: <i>5-27-2015</i>			T400 Analyzer Range	<i>500 PPB</i>
			Shelter Temperature (5-40 ° C)	

Biweekly Manual Level 1 Zero and Span Calibration

Target Dilution (ppb)	Actual Target Dilution Generated	O ₃ Response	Analyzer Stability	Acceptance Criteria	Final Response
Zero Air	<i>0</i>	<i>0.8</i>	<i>0.3</i>	Zero Drift $\leq \pm 1.5\%$	<i>0.1</i>
400 ppb	<i>400</i>	<i>402.3</i>	<i>0.6</i>	Span Drift $\leq \pm 7\%$	<i>400.3</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	<i>0.8</i>	<i>1.06</i>	± 2 ppb	<i>No</i>
400 ppb	<i>402.3</i>	<i>403.12</i>	± 2 ppb	<i>No</i>

Analyzer Parameters

Sample Flow (800 $\pm$ 80 cc/min)	<i>756</i>	Sample Temp. (10 - 50 °C)	<i>40.3</i>
Photo Lamp (58 $\pm$ 1 °C)	<i>58.0</i>	BOX Temp. (30 $\pm$ 20 °C)	<i>28.6</i>
Slope (1 $\pm$ 0.15)	<i>1.023</i>	O ₃ Measure (2500 - 4800 mV)	<i>2794.1</i>
Offset (0.0 $\pm$ 5 PPB)	<i>4.0</i>	O ₃ Reference (2500 - 4800 mV)	<i>2795.2</i>

Operator Comments:

Operator Signature: *Kane Ballard*

Resolution Copper Mining
East Plant Monitoring Station
O₃ Level 2 Zero and Span Verification



DENVER • PORTLAND

Operator: <i>Karen Ballard</i>	Teledyne API T400 O ₃ Analyzer S/N	<i>224</i>	Verification Start Time	<i>1:36</i>
	Teledyne API T700 Primary Standard Dilution Calibrator S/N	<i>191</i>	Verification Stop Time	
Date: <i>01/15/2015</i>			T400 Analyzer Range	<i>500PPB</i>
			Shelter Temperature (5-40 °C)	<i>22.73</i>

Biweekly Manual Level 2 Zero and Span Verification

Target Dilution (ppb)	Actual Target Dilution Generated	O ₃ Response	Analyzer Stability	Acceptance Criteria	Adjustment Required?
Zero Air	<i>0</i>	<i>-1.7</i>	<i>0.6</i>	Zero Drift $\leq \pm 1.5\%$	<i>No</i>
400 ppb	<i>400</i>	<i>400.4</i>	<i>0.8</i>	Span Drift $\leq \pm 7\%$	<i>No</i>

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air		<i>- 0.99</i>	± 2 ppb	<i>No</i>
400 ppb	<i>400.4</i>	<i>400.56</i>	± 2 ppb	<i>No</i>

Analyzer Parameters

Sample Flow (800 $\pm$ 80 cc/min)	<i>771</i>	Sample Temp. (10 - 50 °C)	<i>41.8</i>
Photo Lamp (58 $\pm$ 1 °C)	<i>58.0</i>	BOX Temp. (30 $\pm$ 20 °C)	<i>29.5</i>
Slope (1 $\pm$ 0.15)	<i>1.024</i>	O ₃ Measure (2500 - 4800 mV)	<i>2749.9</i>
Offset (0.0 $\pm$ 5 PPB)	<i>2.0</i>	O ₃ Reference (2500 - 4800 mV)	<i>2809.2</i>

Operator Comments: *INVALIDATES THE 1400 HRS CONCENTRATION OF O₃ - R. AIR MESS*

Operator Signature: *Karen Ballard*

Resolution Copper Mining
East Plant Monitoring Station
O₃ Level 2 Zero and Span Verification



DENVER • PORTLAND

Operator:	Teledyne API T400 O ₃ Analyzer S/N	224	Verification Start Time	11:30
<i>Rami</i>	Teledyne API T700 Primary Standard Dilution Calibrator S/N	191	Verification Stop Time	11:49
Date:			T400 Analyzer Range	500 PPB
02/05/2015			Shelter Temperature (5-40 °C)	21.44

Biweekly Manual Level 2 Zero and Span Verification

Target Dilution (ppb)	Actual Target Dilution Generated	O ₃ Response	Analyzer Stability	Acceptance Criteria	Adjustment Required?
Zero Air	0	0.9	0.6	Zero Drift $\leq \pm 1.5\%$	No
400 ppb	400	402.7	0.9	Span Drift $\leq \pm 7\%$	No

Real time Analyzer vs. Logger Data Comparison

Target Dilution (ppb)	Analyzer Response (ppb)	Logger Response (ppb)	Acceptance Criteria	Adjustment Required?
Zero Air	0.9	1.33	± 2 ppb	No
400 ppb	402.7	403.44	± 2 ppb	No

Analyzer Parameters

Sample Flow (800 $\pm$ 80 cc/min)	757	Sample Temp. (10 - 50 °C)	40.8
Photo Lamp (58 $\pm$ 1 °C)	58.0	BOX Temp. (30 $\pm$ 20 °C)	28.9
Slope (1 $\pm$ 0.15)	1.027	O ₃ Measure (2500 - 4800 mV)	2794.2
Offset (0.0 $\pm$ 5 PPB)	4.0	O ₃ Reference (2500 - 4800 mV)	2795.2

Operator Comments: ** 1100-1200 HOURS CONCENTRATIONS INVALIDATED AS A RESULT OF LEVEL 2 ZERO & SPAN VERIFICATIONS - RAA* Operator Signature: *Rami Balla*

Appendix I: Audits and Calibrations



AIR SCIENCES INC.

DENVER • PORTLAND

**Air Quality
Audit Report
Resolution Copper
East Plant
Monitoring Station**

PREPARED FOR:
RESOLUTION COPPER
MINING



PREPARED BY:
AIR SCIENCES INC.

PROJECT NO. 262-13-1
FEBRUARY 2015

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1.0 INTRODUCTION

On January 27, 2015 the meteorological and air quality instrumentation was audited and/or calibrated at the Resolution Copper East Plant near Superior, AZ. The East Plant monitoring station is operated by the Resolution Copper Mining Company and is located approximately two miles east of the West Plant (see Figure 1).

The purpose of this document is to provide a brief synopsis of the air quality monitoring system and of the audit and/or calibration procedures for the meteorological, particulate, and ambient gas instrumentation at the East Plant monitoring station. The audit was conducted in accordance with the following guideline documents:

- EPA-450/4-87-007, Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), May 1987
- EPA-454/R-99-005, Meteorological Monitoring Guidance for Regulatory Modeling Applications, Section 8.4, February 2000
- EPA-454/B-13-003, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Quality Monitoring Program, May 2013
- EPA-454/B-08-002, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0, March 2008
- EPA-454/B-13-004, Transfer Standards for the Audit of Ambient Air Monitoring Analyzers for Ozone
- Code of Federal Regulations (40 CFR Parts 50 and 58)

Figure 1. Project Location Map – Resolution Copper Monitoring Station Locations



2.0 SYSTEM DESCRIPTION

The instrumentation calibrated and/or audited at the East Plant monitoring site measures wind speed, wind direction, ambient temperature, vertical height temperature difference (delta temperature), solar radiation, relative humidity, precipitation, barometric pressure, particulate matter less than 10 and 2.5 microns in diameter (PM₁₀ & PM_{2.5}), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and ozone (O₃).

The meteorological sensors are mounted to a 35-foot, open-lattice, aluminum drop tower, and the particulate and gaseous analyzers are housed in a 60-square-foot climate-controlled trailer. The sensor and particulate inlet heights are listed in Table 1 (as measured from ground-level).

**Table 1. Sensors and Sample Inlet Heights
(meters above the ground)**

Parameter	Approximate Height(meters)
Wind Speed	10
Wind Direction	10
Ambient Temperature	2
Delta Temperature	2, 10
Solar Radiation	2
Relative Humidity	2
Precipitation	1
Barometric Pressure	1.5
PM ₁₀	3
PM _{2.5}	3
NO ₂	3
SO ₂	3
O ₃	3

The meteorological and ambient gas data are recorded via analog inputs on two Campbell Scientific CR3000 dataloggers, each powered independently by either DC solar or by locally supplied AC line power. All meteorological sensors are programmed on a two-second scan interval, and the output is digitally processed and recorded into 15-minute averages. The raw 15-minute averages are temporarily stored on the datalogger memory, and a local computer is automatically configured to permanently back up datalogger files on a 15-minute interval. The raw 15-minute data averages are securely transmitted, via cellular broadband Internet services, to the Air Sciences Inc. server and processed into the Data Acquisition and Storage System

(DASS) for quality assurance checks. These raw 15-minute averages are used as input for the calculation of one-hour averages.

PM₁₀ and PM_{2.5} are measured by two Met One Instruments model BAM-1020 particulate monitors. The BAM-1020 is a continuous monitoring device that produces 1-hour averages and a 24-hour average concentration for the period of 12:00 a.m. (midnight) through 11:59 p.m. for each calendar day. Particulate data are downloaded every hour onto the on-site datalogger via serial communications and are transported via wireless broadband modem directly to the DASS.

3.0 AUDIT AND CALIBRATION METHODOLOGY

This section provides the audit procedures for the meteorological, particulate, and ambient gas instrumentation at the Resolution Copper East Plant monitoring site. Copies of the completed audit forms are included in Appendix A.

3.1 Meteorological Sensor Audit Procedures

The wind speed sensor audit was performed by rotating the sensor shaft using a DC-powered variable-speed motor equipped with an optical encoder output referenced to a crystal oscillator. A target sensor speed was calculated based on the audit rotational speed and compared to the instantaneous datalogger reading. An R. M. Young Torque Disc was used to measure the anemometer starting torque. All data were recorded on a standardized form.

The audit of the wind direction system was performed by aligning the tail vane of the sensor to its mounting cross-arm. A Brunton Precision Magnetic Compass (BPMC) mounted on a tripod was used to establish the orientation of the cross-arm using the Magnetic Declination Method.¹ With the wind direction sensor oriented along the axis of the cross-arm, the sensor response was compared to the BPMC-measured value and recorded on a standardized form. The potentiometer linearity was checked by recording the system response at 45-degree intervals over the operating range of the system. Data were recorded on a standardized form.

The ambient temperature sensor audit was performed by comparing the temperature sensor in-situ to a NIST-traceable² temperature sensor. Both thermometer and datalogger readings were recorded on a standardized form.

The differential temperature sensor audit was performed by immersing both temperature sensors in a series of three water baths within the range of the temperature sensors. Positive and negative temperature differentials were checked by immersing the sensors in separate water baths. All cabling and associated wiring remained intact for the audit of both sensors. A Precision Temperature Sensor was used to measure the bath temperatures. All audit data were recorded on standardized forms.

The solar radiation sensor audit was performed by comparing the sensor in-situ to a calibrated pyranometer wired to an independent datalogger. Both the standard and the datalogger readings were recorded on a standardized form.

¹ Refer to section 2.5.2.2 of the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0, March 2008, for more details.

² National Institute of Standards and Technology

The relative humidity sensor audit was performed by comparing the humidity sensor in-situ to a NIST-traceable humidity sensor. Both the standard and datalogger readings were recorded on a standardized form.

The precipitation gauge was audited by employing a graduated syringe and distilled water. The volume of water required to cause the tipping bucket to activate was measured repeatedly, averaged, and compared to the calculated value for the activation. All volumes were recorded on a standardized form.

The barometric pressure sensor audit was performed by comparing the sensor in-situ to a NIST-traceable barometric pressure standard. Both the standard and datalogger readings were recorded on a standardized form.

3.2 Meteorological Sensor Calibration Procedures

The wind speed sensor calibration was performed by rotating the sensor shaft using a DC-powered variable-speed motor equipped with an optical encoder output referenced to a crystal oscillator. A target sensor speed was calculated based on the audit rotational speed and compared to the instantaneous datalogger reading. An R. M. Young Torque Disc was used to measure the anemometer starting torque. All data were recorded on a standardized form.

The calibration of the wind direction system was performed by aligning the tail vane of the sensor to its mounting cross-arm. A BPMC mounted on a tripod was used to establish the orientation of the cross-arm using the Magnetic Declination Method. With the wind direction sensor oriented along the axis of the cross-arm, the sensor response was compared to the BPMC-measured value and recorded on a standardized form. The potentiometer linearity was checked by recording the system response at 45-degree intervals over the operating range of the system. Data were recorded on a standardized form.

3.3 Particulate Matter Audit Procedures

The BAM-1020 PM₁₀ and PM_{2.5} monitors were audited by comparing and then adjusting the temperature, barometric pressure, and internal flow to a certified deltaCal Volumetric Air Flow Calibrator. All required maintenance was performed on the instruments to assure optimal operations. The temperature, barometric pressure, and flow output readings from the deltaCal and the BAM-1020 monitor were recorded on a standardized form.

3.4 Ambient Gas Audit Procedures

The audit of the Teledyne T100 SO₂ and T200 NO_x analyzers involved a Multi-Point Audit (MPA). The MPA was performed by using a Transfer Standard Teledyne API T700 Dilution Calibrator to dilute certified multi-component EPA-protocol audit gas with a clean zero-air source. The T100 SO₂ and T200 NO_x analyzer was challenged at zero, and at five points within the instruments range—typically a point from 100 to 500 parts per billion (ppb) of SO₂ or NO_x.

The audit of the Teledyne T400 O₃ analyzer involved an MPA. The MPA was performed by using a Transfer Standard Teledyne API T700 Dilution Calibrator to generate O₃ gas to audit the T400 analyzer at zero, and at a single point within the instrument range—typically a point from 100 to 500 ppb of O₃.

4.0 RESULTS AND RECOMMENDATIONS

On January 27, 2015, Air Sciences Inc. (Air Sciences) personnel encountered difficulties auditing the Teledyne T200 NO_x analyzer using the transfer standard dilution calibrator and EPA protocol audit gas. Using the primary standard dilution calibrator a Level 2 Zero and Span Verification was performed, resulting in the T200 NO_x analyzer displaying acceptable responses. The analyzer shall be subject to multipoint audit routines after a the transfer standard dilution calibrator and EPA protocol audit gas has been investigated.

All other instruments, sensors, and operating systems were found to be clean, serviceable, and within their recommended tolerance parameters.

Meteorological, particulate, and gaseous data collected during the on-site audit and calibration activities described in this report will be invalidated.

Appendix A – Audit Forms

METEOROLOGICAL STATION AUDIT SUMMARY



AIR SCIENCES INC.

DENVER • PORTLAND

Client : Resolution Copper Company
Project No. : 262-13
Site : East Plant
Date : 1/27/2015
Time: 09:45 - 11:00
Personnel: R. Attridge
A. Schlabaugh

SITE MONITORING PARAMETERS AND SENSORS				
Parameter	Sensors	Model #	Serial Number	Instrument Location on Site
Datalogger	Campbell Sci. Micrologger	CR3000	6591	1 meter
Wind Speed	R. M. Young Wind Monitor	5305	112953	10 meters
Wind Direction	R. M. Young Wind Monitor	5305	112953	10 meters
Ambient Temperature	Campbell Sci. Probe	HC2S3-L	60749863	2 meters
Relative Humidity	Campbell Sci. Probe	HC2S3-L	60749863	2 meters
Barometric Pressure	Vaisala PTB110 Barometer	PTB110	G0077095	1 meter
Delta Temperature (2m)	R. M. Young 1K RTD Temp. Sensor	41342	20208	2 meters
Delta Temperature (10m)	R. M. Young 1K RTD Temp. Sensor	41342	020213	10 meters
Solar Radiation	Campbell Sci. Pyranometer	CMP3	115422	2 meters
Precipitation	R. M. Young Heated Rain Gauge	52202	8721	Ground

QUALITY ASSURANCE AUDIT EQUIPMENT				
Parameter	Reference Device	Model #	Serial Number	Re-Calibration Date
Datalogger	Campbell Sci. Micrologger	CR 850	22877	
System Accuracy & Linearity	Compass	N/A	508031403	4/2/2014
Wind Speed	R. M. Young Anemometer Drive	18802	CA03377	02/27/2014
Torque	Disk 1	N/A	N/A	N/A
Ambient Temperature	HygroClip 2	HC2S3	61045434	02/20/2014
Relative Humidity	HygroClip 2	HC2S3	61045434	02/20/2014
Barometric Pressure	Vaisala PTB110 Barometer	CS106	C4240088	09/02/2013
Delta Temperature	Campbell Sci. RTD Probe	41342	TS22518	02/28/2014
Solar Radiation	Campbell Sci. Pyranometer	CMP6	123275	03/18/2014
Precipitation	10 mL Syringe	N/A	N/A	N/A

1100 N. V. P. & P. O. B. 1100

CA03377
Disk 1

	Standard	Target*	Logger Reading	Difference	Acceptance
	<u>RPM</u>	<u>m/s</u>	<u>m/s</u>	<u>m/s</u>	<u>Criteria</u>
CW	0.0	0.00	0.00	0.00	0.0
CW	200.0	1.02	1.02	0.00	0.3
CW	400.0	2.05	2.04	-0.01	0.3
CW	600.0	3.07	3.07	0.00	0.4
CW	800.0	4.10	4.09	-0.01	0.4
CW	1000.0	5.12	5.12	0.00	0.5
CW	2000.0	10.24	10.24	0.00	0.7
CW	3000.0	15.36	15.36	0.00	1.0
CW	4000.0	20.48	20.48	0.00	1.2
CW	5000.0	25.60	25.60	0.00	1.5

Clockwise	0.5	g-cm
Counterclockwise	0.5	g-cm

Audited By: R. Attridge

WIND DIRECTION, 10 METERS, AS FOUND
AUDIT SUMMARY



AIR SCIENCES INC.

OTWICK • PORTLAND

Operator: Air Sciences
Site Name: East Plant
Project: 262-13
Date: 1/27/2015

Model: 5305 Serial No: 112953 Compass No.: 508031403

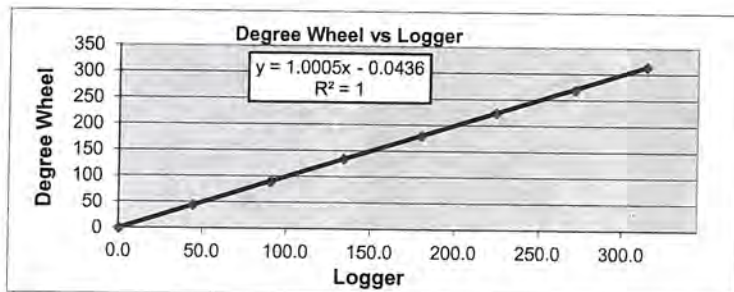
System Accuracy and Linearity Check

Declination^[1] = 10 °East

Orientation	Compass (w/o declination) (Degrees)	Compass (w/ declination) (Degrees)	Target (Degrees)	Logger Reading (Degrees)	Difference (Degrees)	Acceptance Criteria
1. Vane	187.0	179.0	180.1	178.2	-1.9	±5
Tail	7.0	1.0	3.1	0.1	-3.0	±5

	Initial Logger (Degrees)	Difference (Degrees)	Corrected Logger (Degrees)	Difference (Degrees)	Acceptance Criteria ^[2]
CW					
0	0.3	0.3	0.2	0.2	±3
45	44.6	-0.4	45.3	0.3	±3
90	90.6	0.6	89.7	-0.3	±3
135	134.3	-0.7	135.6	0.6	±3
180	180.1	0.1	179.8	-0.2	±3
225	224.3	-0.7	226.5	1.5	±3
270	271.2	1.2	271.5	1.5	±3
315	314.3	-0.7	319.4	4.4	±3
Avg		0.0			

	Initial Logger (Degrees)	Difference (Degrees)	Corrected Logger (Degrees)	Difference (Degrees)	Acceptance Criteria ^[2]
CCW					
0	0.4	0.4	0.6	0.6	±3
45	45.8	0.8	46.6	1.6	±3
90	90.1	0.1	89.4	-0.6	±3
135	134.6	-0.4	134.7	-0.3	±3
180	180.9	0.9	182.4	2.4	±3
225	224.0	-1.0	227.3	2.3	±3
270	269.3	-0.7	269.3	-0.7	±3
315	313.3	-1.7	316.2	1.2	±3
Avg		-0.2			



Audited By: R. Attridge

¹ Declination added to compass

² May reference wider acceptance criteria in QA Handbook for Air Pollution Measurement

Systems, Volume IV - Meteorological Measurements, August 1989

WIND SPEED, 10 METERS, AS LEFT
Calibration Summary



AIR SCIENCES INC.

RECOVER • DISTANCE

Operator: Air Sciences
Site Name: East Plant
Project: 262-13
Date: 1/27/2015

Model: 5305
Serial No: 77645

Calibration Motor No.:
Calibration Disk No.:

CA03377
Disk 1

System Linearity Check

	Standard	Target*	Logger Reading	Difference	Acceptance
	<u>RPM</u>	<u>m/s</u>	<u>m/s</u>	<u>m/s</u>	<u>Criteria</u>
CW	0.0	0.00	0.00	0.00	0.0
CW	200.0	1.02	1.02	0.00	0.3
CW	400.0	2.05	2.04	-0.01	0.3
CW	600.0	3.07	3.07	0.00	0.4
CW	800.0	4.10	4.09	-0.01	0.4
CW	1000.0	5.12	5.12	0.00	0.5
CW	2000.0	10.24	10.24	0.00	0.7
CW	3000.0	15.36	15.36	0.00	1.0
CW	4000.0	20.48	20.48	0.00	1.2
CW	5000.0	25.60	25.60	0.00	1.5

Bearing Torque Test (Passing 0.4 m/s = 0.6 g-cm)

Clockwise 0.2 g-cm
Counterclockwise 0.2 g-cm

RM Young
*Target (m/s) = rpm x
0.00512

Audited By: A. Schlabaugh

WIND DIRECTION, 10 METERS, AS LEFT
Calibration Summary



AIR SCIENCES INC.

Operator: Air Sciences
Site Name: East Plant
Project: 262-13
Date: 1/27/2015

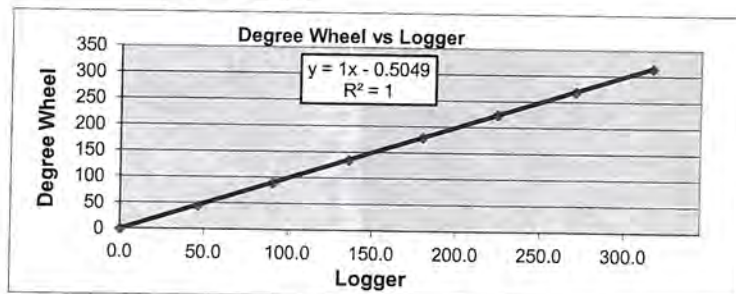
Model: 5305 Serial No: 77645 Compass No.: 508031403

System Accuracy and Linearity Check

Declination^[1] = 10 °East

Orientation	Compass (w/o declination) (Degrees)	Compass (w/ declination) (Degrees)	Target (Degrees)	Logger Reading (Degrees)	Difference (Degrees)	Acceptance Criteria
1. Vane	167.0	177.0	177.0	180.2	3.2	±5
Tail	3.0	357.0	357.0	1.6	4.6	±5

	Initial Logger (Degrees)	Difference (Degrees)	Corrected Logger (Degrees)	Difference (Degrees)	Acceptance Criteria ^[2]
CW					
0	0.3	0.3	-0.2	-0.2	±3
45	46.2	1.2	45.7	0.7	±3
90	90.7	0.7	90.2	0.2	±3
135	135.9	0.9	135.4	0.4	±3
180	179.7	-0.3	179.2	-0.8	±3
225	224.2	-0.8	223.7	-1.3	±3
270	270.6	0.6	270.1	0.1	±3
315	316.5	1.5	316.0	1.0	±3
Avg		0.5			
CCW					
0	0.2	0.2	0.4	0.4	±3
45	44.7	-0.3	44.9	-0.1	±3
90	90.2	0.2	90.4	0.4	±3
135	135.4	0.4	135.6	0.6	±3
180	179.3	-0.7	179.5	-0.5	±3
225	224.7	-0.3	224.9	-0.1	±3
270	268.3	-1.7	268.5	-1.5	±3
315	315.4	0.4	315.6	0.6	±3
Avg		-0.2			



Audited By: A. Schlabaugh

¹ Declination added to compass

² May reference wider acceptance criteria in *QA Handbook for Air Pollution Measurement Systems, Volume IV - Meteorological Measurements, August 1989*

AMBIENT TEMPERATURE, 2 METERS
AUDIT SUMMARY



Operator: Air Sciences
Site Name: East Plant
Project: 262-13
Date: 1/27/2015

Model: HC2S3-L
Std Model: HC2S3

Serial No: 60749863
Ref Serial No: 61045434

System Linearity Check

	Standard (°C)	Logger Reading (°C)	Difference (°C)	Acceptance Criteria
1.	13.8	13.9	-0.1	±2
2.	13.5	13.2	0.2	±2
3.	12.7	13.3	-0.7	±2
4.	13.0	13.0	0.0	±2
5.	12.5	12.5	0.0	±2
6.	12.3	12.8	-0.6	±2
7.	12.5	13.3	-0.8	±2
8.	12.8	13.0	-0.2	±2
9.	12.5	12.8	-0.4	±2
10.	12.1	12.3	-0.2	±2

Audited By: R. Attridge

RELATIVE HUMIDITY, 2 METERS
AUDIT SUMMARY

Operator: Air Sciences
Site Name: East Plant
Project: 262-13
Date: 1/27/2015



00000000000000000000

Model: HC2S3-L Serial No: 60749863
Std Model: HC2S3 Std Serial No: 61045434

	Standard	Logger	Difference	Acceptance
	(%)	Reading	(%)	Criteria
		(%)		(%)
1.	70.2	70.3	-0.1	±7
2.	68.5	67.5	1.0	±7
3.	68.2	68.9	-0.7	±7
4.	68.5	69.0	-0.5	±7
5.	68.2	68.4	-0.2	±7
6.	68.0	67.7	0.3	±7
7.	67.7	68.1	-0.4	±7
8.	68.8	68.8	0.0	±7
9.	68.6	67	1.6	±7
10.	66.1	66.2	-0.1	±7

Audited By: R. Attridge

DELTA TEMPERATURE, 2 and 10 METERS
AUDIT SUMMARY



AIR SCIENCES INC.

OWENSON - PORTLAND

Operator: Air Sciences
Site Name: East Plant
Project: 262-13
Date: 1/27/2015

Model: 41342	Serial No (2m): 20208
Std Model: 41342	Serial No (10m): 020213
	Std Serial No: TS22518

Aspirator Fans Working Properly? Y

	Standard (°C)	2 Meter (°C)	10 Meter (°C)	Difference 2 Meter ^[1] (°C)	Difference 10 Meter ^[1] (°C)
Bath 1	0.26	0.26	0.27	0.00	0.01
Bath 2	16.42	16.40	16.39	0.02	0.03
Bath 3	44.83	44.89	44.82	0.06	0.01

Delta T ^[2] (°C)	Difference 10M vs. 2M
	0.01
	0.01
	0.07

1. The acceptance criteria for deviation from the standard for both upper and lower temperatures is ± 0.5
2. The acceptance criteria for deviation from the standard for delta temperatures is ± 0.1

Audited By: R. Attridge

1999年 12月 25日 星期五

Model: PTB110
Std Model: CS106

Serial No: G0077095
Std Serial No: C4240088

	Standard (mmHg)	Logger Reading (mmHg)	Difference (mmHg)	Acceptance Criteria (mmHg)
1.	659.0	658.6	0.4	±2.3
2.	659.0	658.6	0.4	±2.3
3.	659.0	658.6	0.4	±2.3
4.	659.0	658.6	0.4	±2.3
5.	659.0	658.6	0.4	±2.3

10

SOLAR RADIATION, 2 METERS
AUDIT SUMMARY

Operator: Air Sciences
Site Name: East Plant
Project: 262-13
Date: 1/27/2015



01-1118-0001/15-01

Model: CMP3 Serial No: 115422
Std Model: CMP6 Std Serial No: 123275

System Linearity Check

	Standard (W/m^2)	Logger Reading (W/m^2)	Difference (W/m^2)	Difference (%)	Acceptance Criteria
Covered Reading	0.0	0.0	0.0		$\pm 25 \text{ W/m}^2$ or 5%
1.	212.2	218.5	-6.3	2.9	$\pm 25 \text{ W/m}^2$ or 5%
2.	205.0	202.6	2.4	-1.2	$\pm 25 \text{ W/m}^2$ or 5%
3.	222.9	240.5	-17.6	7.3	$\pm 25 \text{ W/m}^2$ or 5%
4.	220.1	240.4	-20.3	8.4	$\pm 25 \text{ W/m}^2$ or 5%
5.	223.5	244.3	-20.8	8.5	$\pm 25 \text{ W/m}^2$ or 5%
6.	219.4	245.3	-25.9	10.6	$\pm 25 \text{ W/m}^2$ or 5%
7.	221.8	245.8	-24.0	9.8	$\pm 25 \text{ W/m}^2$ or 5%
8.	224.8	244.7	-19.9	8.1	$\pm 25 \text{ W/m}^2$ or 5%
9.	225.8	244.0	-18.2	7.5	$\pm 25 \text{ W/m}^2$ or 5%
10.	226.8	243.4	-16.6	6.8	$\pm 25 \text{ W/m}^2$ or 5%
		Average	-16.7		

Audited By: R. Attridge

PRECIPITATION, GROUND LEVEL
AUDIT SUMMARY

Operator: Air Sciences
Site Name: East Plant
Project: 262-13
Date: 1/27/2015



DATE: 1/27/2015

Model: 52202 Serial No: 8721

System Linearity Check

	Water (cc)	Calculated Target* (inches)	Logger Reading (inches)	Difference (inches)
1.	2.00	0.0040	0.004	0.000
2.	2.10	0.0042	0.004	0.000
3.	2.00	0.0040	0.004	0.000
4.	2.00	0.0040	0.004	0.000
5.	2.10	0.0042	0.004	0.000
6.	2.10	0.0042	0.004	0.000
7.	2.10	0.0042	0.004	0.000
8.	2.20	0.0044	0.004	0.000
9.	2.20	0.0044	0.004	0.000
10.	2.20	0.0044	0.004	0.000
Total	21.00	0.0418	0.040	0.002

Reading taken from final storage for period averaged data = 0.284 inches

Target (Campbell Scientific gauge) = water (cc)/2.01.004(inches)

Audited By: R. Attridge

COMMENTS & SIGNATURES
AUDIT SUMMARY



Operator: Air Sciences
Site Name: East Plant
Project: 262-13
Date: 1/27/2015

COMMENTS:

The manufacturer recommended service schedule resulted in
flange bearing replacement of the RMY 05305 Wind Monitor.

Signatures:

Rory Attridge
A. M.

East Plant BAM-1020 PM₁₀ Audit Sheet

Model:

BAM-1020

Serial
Number:

M8714

Audit Date:

1/27/2015

Audited By:

A. Schlabaugh

Audit Time:

11:15hrs

Firmware:

Flow Audits

Flow Reference Standard Used:	Model: DeltaCAI	Serial No: 1103	Calibration Date: 3/5/2014
Temperature Standard Used:	Model: DeltaCAI	Serial No: 1103	Calibration Date: 3/5/2014
Barometric Pressure Standard Used:	Model: DeltaCAI	Serial No: 1103	Calibration Date: 3/5/2014

Leak Check Value:

as found: Should Be: <1.0 as left: Should Be: <1.0

Ambient Temperature (°C):

	BAM	Ref. Std.		BAM	Ref. Std.	
as found:	12.5	14.8	as left:	15.5	15.8	Adjusted ☒
as found:	673	659	as left:	659	659	Adjusted ☒
as found:	15.0	15.27	as left:	15.0	14.76	Adjusted ☐
as found:	18.4	18.84	as left:	18.4	18.3	Adjusted ☐
as found:	16.7	17.02	as left:	16.7	16.47	Adjusted ☐

Barometric Pressure (mmHg):

Flow Rate (15.0 LPM):

Flow Rate (18.4 LPM):

Flow Rate (16.7 LPM):

Audit Notes:

Mechanical Audits

Pump muffler unclogged:	As found	☒	As left	☐	PM10 particle trap clean:	As found	☒	As left	☐	N/A	☐
Sample nozzle clean:	As found	☐	As left	☒	PM10 drip jar empty:	As found	☐	As left	☒	N/A	☐
Tape support vane clean:	As found	☐	As left	☒	PM10 bug screen clear:	As found	☐	As left	☒	N/A	☐
Capstan shaft clean:	As found	☐	As left	☒	PM2.5 particle trap clean:	As found	☐	As left	☐	N/A	☒
Rubber pinch rollers clean:	As found	☐	As left	☒	Inlet tube water-tight seal OK:	As found	☒	As left	☐		
Chassis ground wire installed:	As found	☒	As left	☐	Inlet tube perpendicular to BAM:	As found	☒	As left	☐		

Signature:

East Plant BAM-1020 PM_{2.5} Audit Sheet

Model: **BAM-1020**

Serial Number: **M6466**

Audit Date: **1/27/2015**

Audited By: **A. Schlabaugh**

Audit Time: **11:30**

Firmware:

Flow Audits			
Flow Reference Standard Used:	Model: DeltaCal	Serial No: 1103	Calibration Date: 3/5/2014
Temperature Standard Used:	Model: DeltaCal	Serial No: 1103	Calibration Date: 3/5/2014
Barometric Pressure Standard Used:	Model: DeltaCal	Serial No: 1103	Calibration Date: 3/5/2014

Leak Check Value: as found: **0.7** Should Be: **<1.0** as left: **0.4** Should Be: **<1.0**

Ambient Temperature (°C):

	BAM	Ref. Std.
as found:	13.3	14.1
as found:	667	659
as found:	15.0	14.95
as found:	18.3	18.42
as found:	16.6	16.60

	BAM	Ref. Std.	Adjusted
as left:	14.7	14.8	X
as left:	659	659	X
as left:	14.9	14.76	
as left:	18.3	18.10	
as left:	16.6	16.41	X

Barometric Pressure (mmHg):

Flow Rate (15.0 LPM):

Flow Rate (18.4 LPM):

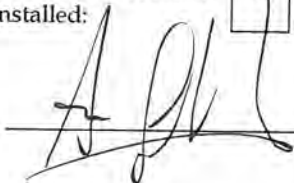
Flow Rate (16.7 LPM):

Audit Notes:

Mechanical Audits

Pump muffler unclogged:	As found	☐	As left	☒	PM10 particle trap clean:	As found	☒	As left	☐	N/A	☐
Sample nozzle clean:	As found	☐	As left	☒	PM10 drip jar empty:	As found	☒	As left	☐	N/A	☐
Tape support vane clean:	As found	☐	As left	☒	PM10 bug screen clear:	As found	☐	As left	☒	N/A	☐
Capstan shaft clean:	As found	☐	As left	☒	PM2.5 particle trap clean:	As found	☐	As left	☒	N/A	☐
Rubber pinch rollers clean:	As found	☐	As left	☒	Inlet tube water-tight seal OK:	As found	☒	As left	☐		
Chassis ground wire installed:	As found	☒	As left	☐	Inlet tube perpendicular to BAM:	As found	☒	As left	☐		

Signature:



East Plant
O₃ Multipoint Audit
Resolution Copper Mining



DENVER, COLORADO

Operator: A. Schlabaugh	Teledyne API T400 O ₃ Analyzer S/N	224	Multipoint Start Time	17:15
	Teledyne API T700 Transfer Standard Dilution Calibrator S/N	816	Multipoint Stop Time	18:12
Date: 1/27/2015			T400 Analyzer Range	500ppb
			Shelter Temperature (5-40 ° C)	23.6

Multipoint Audit (Quarterly, or as needed):

Check the analyzer response over 0 - 500 ppb range using the Transfer Standard Dilution Calibrator.

Transfer Standard:

Target (PPB)	Actual Generated O ₃ (PPB)	O ₃ Response (PPB)	Best Fit Line (PPB)	Acceptable Criteria (± 2% from BFL)
Zero Air	0.000	0.200	0.730	PASS, <2% FS
100	100.000	104.200	102.203	PASS, 2%
200	200.000	205.700	203.677	PASS, 1%
300	300.000	306.300	305.150	PASS, 0.4%
400	401.000	408.000	407.638	PASS, 0.1%
500	499.000	506.100	507.082	PASS, 0.2%

Best Fit Line (BFL)

$$Y = 1.0147x + 0.7297$$

$$R^2 = 0.99998$$

Analyzer Parameters

Sample Flow (800 ± 80 cc/min)	754	Sample Temp. (10 - 50 °C)	41.1
Photo Lamp (58 ± 1 °C)	58.0	BOX Temp. (30 ± 20 °C)	28.7
Slope (1 ± 0.15)	1.027	O ₃ Measure (2500 - 4800 mV)	2802.6
Offset (0.0 ± 5 PPB)	-4.0	O ₃ Reference (2500 - 4800 mV)	2803.1

Operator Comments: Particle Filter Changed

Operator Signature:

East Plant
SO₂ Multipoint Audit
Resolution Copper Mining



OLYMPIA • OREGON

Operator: A. Schlabaugh	Teledyne API T100 SO ₂ Analyzer S/N	193	Multipoint Start Time	17:15
	Teledyne API T700 Transfer Standard Dilution Calibrator S/N	816	Multipoint Stop Time	19:14
Date: 1/27/2015	NIST Traceable Gas Conc.	40.9	T100 Analyzer Range	500 ppb
			Shelter Temperature (5-40 ° C)	24.7

Multipoint Calibration (Quarterly, or as needed):

Check analyzer response between 0 - 500 ppb range using the Transfer Standard Dilution Calibrator.

Transfer Standard:

Target (PPB)	Actual Generated SO ₂ (PPB)	SO ₂ Response (PPB)	Best Fit Line (PPB)	Acceptable Criteria (± 2% from BFL)
Zero Air	0.000	0.200	0.346	PASS, <2%FS
100	100.000	102.600	102.549	PASS, 0%
200	200.000	205.000	204.752	PASS, 0.1%
300	300.000	307.600	306.956	PASS, 0.2%
400	400.000	408.600	409.159	PASS, 0.1%
500	499.000	510.400	510.340	PASS, 0%

Best Fit Line (BFL)

$Y = 1.022x + 0.3462$

$R^2 = 0.99999$

Analyzer Parameters

Sample Flow (650 ± 65 cc/min)	624	Sample Press. (Ambient ± 2 in-Hg)	25.9
UV Lamp (1000 - 4800 mV)	2090.6	Lamp Ratio (30 - 120%)	88.4
Slope (1 ± 0.3)	1.166	BOX Temp. (Ambient ± 5°C)	33.2
Offset (< 250 mV)	25.5	HVPS (400 - 900 V)	614

Operator Comments: Particle Filter Replaced

Operator Signature:



AIR SCIENCES INC.

DENVER • PORTLAND

**Air Quality
Audit and
Calibration Report
Resolution Copper
West Plant
Monitoring Station**

PREPARED FOR:
RESOLUTION COPPER
MINING



PREPARED BY:
AIR SCIENCES INC.

PROJECT NO. 262-13
FEBRUARY 2015

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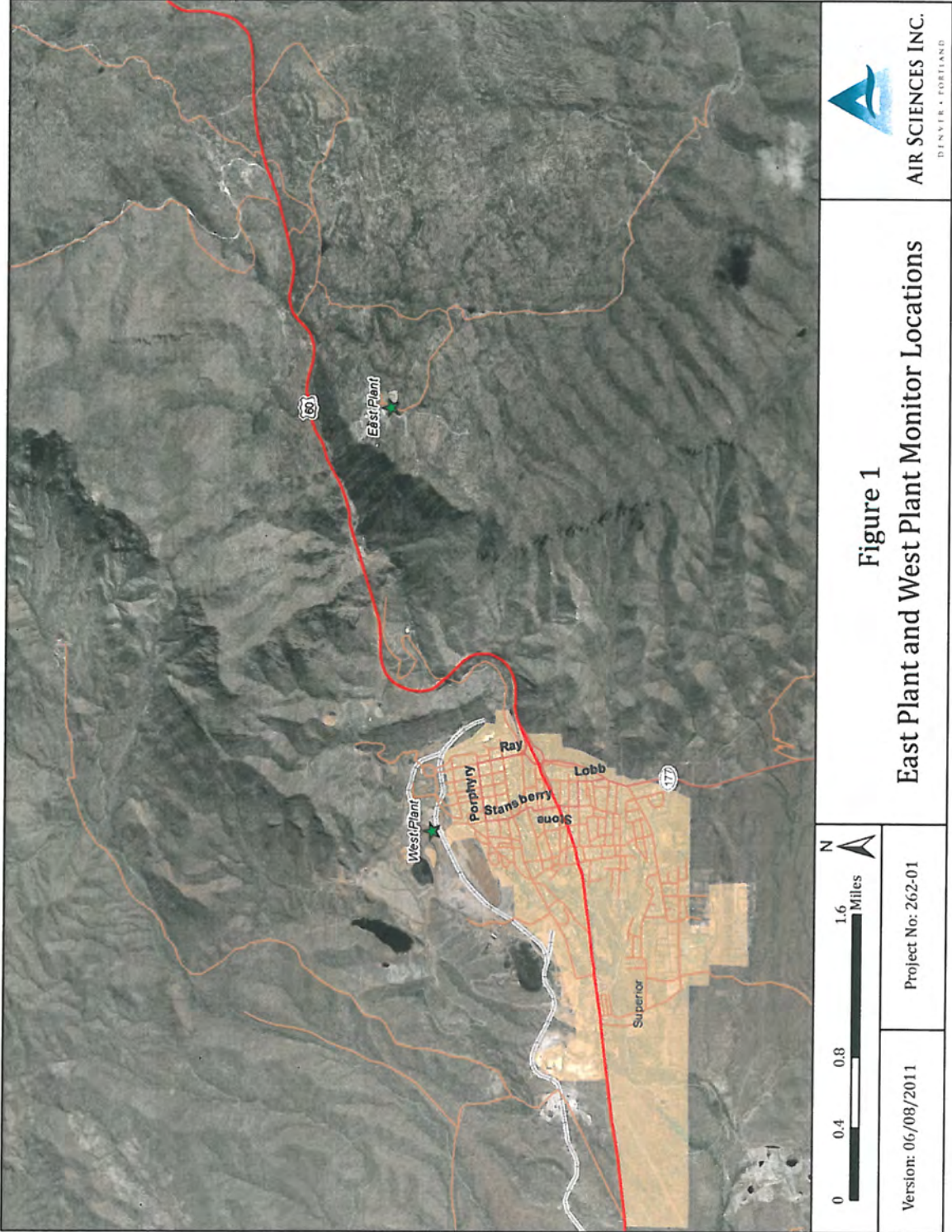
Appendix A – Audit Forms	
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1.0 INTRODUCTION

On January 26, 2015, the meteorological and air quality instrumentation was audited and/or calibrated at the Resolution Copper West Plant near Superior, AZ. The West Plant monitoring station is operated by the Resolution Copper Mining Company and is located approximately one quarter mile west of the administration buildings (see Figure 1). The audit/calibration activities described in this report were conducted in accordance with the following guideline documents:

- EPA-450/4-87-007, Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), May 1987
- EPA-454/R-99-005, Meteorological Monitoring Guidance for Regulatory Modeling Applications, Section 8.4, February 2000
- EPA-454/B-13-003, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Quality Monitoring Program, May 2013
- EPA-454/B-08-002, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0, March 2008
- Code of Federal Regulations (40 CFR Parts 50 and 58)

Figure 1. Project Location Map - Resolution Copper East Plant and West Plant Monitoring Station Locations



2.0 SYSTEM DESCRIPTION

The instrumentation audited at the West Plant monitoring site measures wind speed, wind direction, ambient temperature, vertical height temperature difference (delta temperature), solar radiation, relative humidity, precipitation, barometric pressure, and particulate matter less than 10 and 2.5 microns in diameter (PM₁₀ & PM_{2.5}).

The meteorological sensors are mounted to a 35-foot, open-lattice, aluminum drop tower. The particulate monitors are housed in a climate-controlled enclosure. The sensor and particulate inlet heights are listed in Table 1 (as measured from ground-level).

**Table 1. Sensor and Particulate Inlet Heights
(meters above the ground)**

Parameter	Approximate Height (meters)
Wind Speed	10
Wind Direction	10
Ambient Temperature	2
Delta Temperature	2, 10
Solar Radiation	2
Relative Humidity	2
Precipitation	1
Barometric Pressure	1.5
PM ₁₀	2
PM _{2.5}	2

Monitored data are recorded via analog inputs on two Campbell Scientific CR3000 datalogger powered independently by either DC solar power. All meteorological sensors are programmed on a one-second scan interval, and the output is digitally processed and recorded into 15-minute averages. The raw 15-minute averages are temporarily stored on the datalogger memory, and a local computer is automatically configured to permanently back up datalogger files on a 15-minute interval. The raw 15-minute data averages are securely transmitted, via cellular broadband Internet services, to the Air Sciences Inc. server and processed into the Data Acquisition and Storage System (DASS) for quality assurance checks. These raw 15-minute averages are used as input for the calculation of one-hour averages.

PM₁₀ and PM_{2.5} are measured by two Met One Instruments model BAM-1020 particulate monitors. The BAM-1020 is a continuous monitoring device that produces 1-hour averages and

a 24-hour average concentration for the period of 12:00 a.m. (midnight) through 11:59 p.m. for each calendar day. Particulate data are downloaded every hour onto the on-site datalogger via serial communications and are transported via wireless broadband modem directly to the DASS.

3.0 AUDIT AND CALIBRATION METHODOLOGY

This section provides the audit and/or calibration procedures for the meteorological and particulate instrumentation at the Resolution Copper West Plant monitoring site. Copies of the completed audit and/or calibration forms for each parameter are included in Appendix A.

3.1 Meteorological Sensor Audit Procedures

The wind speed sensor audit was performed by rotating the sensor shaft using a DC-powered variable-speed motor equipped with an optical encoder output referenced to a crystal oscillator. A target sensor speed was calculated based on the audit rotational speed and compared to the instantaneous datalogger reading. An R. M. Young Torque Disc was used to measure the anemometer starting torque. All data were recorded on a standardized form.

The audit of the wind direction system was performed by aligning the tail vane of the sensor to its mounting cross-arm. A Brunton Precision Magnetic Compass (BPMC) mounted on a tripod was used to establish the orientation of the cross-arm using the Magnetic Declination Method.¹ With the wind direction sensor oriented along the axis of the cross-arm, the sensor response was compared to the BPMC-measured value and recorded on a standardized form. The potentiometer linearity was checked by recording the system response at 45-degree intervals over the operating range of the system.

The ambient temperature sensor audit was performed by comparing the temperature sensor in-situ to a NIST-traceable² temperature sensor. Both thermometer and datalogger readings were recorded on a standardized form.

The differential temperature sensor audit was performed by immersing both temperature sensors in a series of three water baths within the range of the temperature sensors. Positive and negative temperature differentials were checked by immersing the sensors in separate water baths. All cabling and associated wiring remained intact for the audit of both sensors. A Precision Temperature Sensor was used to measure the bath temperatures. All audit data were recorded on standardized forms.

The solar radiation sensor audit was performed by comparing the sensor in-situ to a calibrated pyranometer wired to an independent datalogger. Both the standard and the datalogger readings were recorded on a standardized form.

¹ Refer to section 2.5.2.2 of the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0, March 2008, for more details.

² National Institute of Standards and Technology

The relative humidity sensor audit was performed by comparing the humidity sensor in-situ to a NIST-traceable humidity sensor. Both the standard and datalogger readings were recorded on a standardized form.

The precipitation gauge was audited by employing a graduated syringe and distilled water. The volume of water required to cause the tipping bucket to activate was measured repeatedly, averaged, and compared to the calculated value for the activation. All volumes were recorded on a standardized form.

The barometric pressure sensor audit was performed by comparing the sensor in-situ to a NIST-traceable barometric pressure standard. Both the standard and datalogger readings were recorded on a standardized form.

3.2 Particulate Matter Audit Procedures

The BAM-1020 PM₁₀ and PM_{2.5} monitors were audited by comparing and then adjusting the temperature, barometric pressure, and internal flow to a certified deltaCal Volumetric Air Flow Calibrator. All required maintenance was performed on the instruments to assure optimal operations. The temperature, barometric pressure, and flow output readings from the deltaCal and the instrument were recorded on a standardized form.

4.0 RESULTS AND RECOMMENDATIONS

The BAM-1020 PM₁₀ and PM_{2.5} monitor reference membrane assembly brackets both displayed signs of wear due to the normal shuttling action of the reference membrane. It has been determined that the intermittent membrane density errors reported by both monitors are artifacts of dirty membranes as a result of the worn membrane assemblies. Data collection is not jeopardized at this time however, it is suggested that the membrane assemblies are replaced during the next scheduled audit routines.

All instruments, sensors, and operating systems were found to be clean, serviceable, and within their recommended tolerance parameters.

All affected meteorological and particulate data will be invalidated due to the on-site audit and calibration activities.

Appendix A - Audit Forms

COMMENTS & SIGNATURES
AUDIT SUMMARY



Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

COMMENTS:

The manufacturer recommended service schedule resulted in a
flange bearing replacement of the RMY 05305 Wind Monitor.
Total precipitation recorded was 0.178" resulting from both
cleaning and audit services .

As a result of the audit activities, data shall be invalidated from
1700 - 1800hrs.

Signatures:

PRECIPITATION, GROUND LEVEL
AUDIT SUMMARY



Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

6 CHALK HILL ROAD

Model: 52202 Serial No: 08738

System Linearity Check

	Water (cc)	Calculated Target* (inches)	Logger Reading (inches)	Difference (inches)
1.	2.10	0.0042	0.004	0.000
2.	2.10	0.0042	0.004	0.000
3.	2.10	0.0042	0.004	0.000
4.	2.00	0.0040	0.004	0.000
5.	2.10	0.0042	0.004	0.000
6.	2.00	0.0040	0.004	0.000
7.	2.10	0.0042	0.004	0.000
8.	2.00	0.0040	0.004	0.000
9.	2.00	0.0040	0.004	0.000
10.	2.00	0.0040	0.004	0.000
Total	20.50	0.0408	0.040	0.001

Reading taken from final storage for period averaged data = 0.04 inches

Target (Campbell Scientific gauge) = water (cc)/2.01.004(inches)

Audited By: A. Schlabaugh

METEOROLOGICAL STATION AUDIT SUMMARY



AIR SCIENCES INC.

DENVER • PORTLAND

Client : Resolution Copper Company
Project No. : 262-13
Site : West Plant
Date : 1/26/2015
Time: 17:00 -18:00
Personnel: R. Attridge
A. Schlabaugh

SITE MONITORING PARAMETERS AND SENSORS				
Parameter	Sensors	Model #	Serial Number	Instrument Location on Site
Datalogger	Campbell Sci. Micrologger	CR3000	6590	1 meter
Wind Speed	R. M. Young Wind Monitor	5305	112952	10 meters
Wind Direction	R. M. Young Wind Monitor	5305	112952	10 meters
Ambient Temperature	Campbell Sci. Probe	HC2S3-L	60749962	2 meters
Relative Humidity	Campbell Sci. Probe	HC2S3-L	60749962	2 meters
Barometric Pressure	Vaisala PTB110 Barometer	PTB110	J3610003	1 meter
Delta Temperature (2m)	R. M. Young 1K RTD Temp. Sensor	41342	020205	2 meters
Delta Temperature (10m)	R. M. Young 1K RTD Temp. Sensor	41342	020211	10 meters
Solar Radiation	Campbell Sci. Pyranometer	CMP3	115433	2 meters
Precipitation	R. M. Young Heated Rain Gauge	52202	08738	Ground

QUALITY ASSURANCE AUDIT EQUIPMENT				
Parameter	Reference Device	Model #	Serial Number	Re-Calibration Date
Datalogger	Campbell Sci. Micrologger	CR 3000	3200	5/2/2015
System Accuracy & Linearity	Compass	N/A	1234	1/16/2016
Wind Speed	R. M. Young Anemometer Drive	18802	CA03377	1/16/2016
Torque	Disk 1	N/A	N/A	N/A
Ambient Temperature	HygroClip 2	HC2S3	61045434	1/14/2016
Relative Humidity	HygroClip 2	HC2S3	61045434	1/14/2016
Barometric Pressure	Vaisala PTB110 Barometer	CS106	C4240088	1/14/2016
Delta Temperature	Campbell Sci. RTD Probe	41342	TS22518	1/10/2016
Solar Radiation	Campbell Sci. Pyranometer	CMP6	123275	03/8/2016
Precipitation	10 mL Syringe	N/A	N/A	N/A

WIND SPEED, 10 METERS, AS FOUND
Calibration Summary



Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

DEGREE • SURFARM

Model: 5305 Calibration Motor No.: CA03377
Serial No: 98304 Calibration Disk No.: Disk 1

System Linearity Check

	Standard	Target*	Logger Reading	Difference	Acceptance
	RPM	m/s	m/s	m/s	Criteria
CW	0.0	0.00	0.00	0.00	0.0
CW	200.0	1.02	1.02	0.00	0.3
CW	400.0	2.05	2.04	-0.01	0.3
CW	600.0	3.07	3.07	0.00	0.4
CW	800.0	4.10	4.90	0.80	0.4
CW	1000.0	5.12	5.12	0.00	0.5
CW	2000.0	10.24	10.24	0.00	0.7
CW	3000.0	15.36	15.36	0.00	1.0
CW	4000.0	20.48	20.48	0.00	1.2
CW	5000.0	25.60	25.60	0.00	1.5

Bearing Torque Test (Passing 0.4 m/s = 0.6 g-cm)

Clockwise 0.3 g-cm
Counterclockwise 0.3 g-cm

RM Young
*Target (m/s) = rpm x
0.00512

Audited By: R. Attridge

WIND DIRECTION, 10 METERS, AS FOUND
Calibration Summary



Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

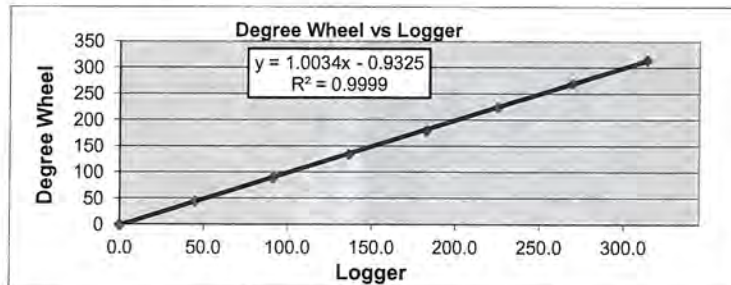
Model: 5305 Serial No: 98304 Compass No.: 1234

System Accuracy and Linearity Check

Declination^[1] = 10 °East

Orientation	Compass (w/o declination) (Degrees)	Compass (w/declination) (Degrees)	Target (Degrees)	Logger Reading (Degrees)	Difference (Degrees)	Acceptance Criteria
1. Vane	182.0	172.0	172.0	171.6	-0.4	±5
Tail	0.4	354.0	354.0	352.1	-1.9	±5

	Initial Logger (Degrees)	Difference (Degrees)	Corrected Logger (Degrees)	Difference (Degrees)	Acceptance Criteria ^[2]
CW					
0	0.1	0.1	-0.3	-0.3	±3
45	44.8	-0.2	44.4	-0.6	±3
90	91.2	1.2	90.8	0.8	±3
135	136.4	1.4	136.0	1.0	±3
180	182.4	2.4	182.0	2.0	±3
225	225.1	0.1	224.7	-0.3	±3
270	269.5	-0.5	269.1	-0.9	±3
315	313.7	-1.3	313.3	-1.7	±3
Avg		0.4			
CCW					
0	0.1	0.1	0.3	0.3	±3
45	44.8	-0.2	45.1	0.1	±3
90	88.7	-1.3	89.0	-1.0	±3
135	134.4	-0.6	134.7	-0.3	±3
180	179.5	-0.5	179.8	-0.2	±3
225	225.7	0.7	226.0	1.0	±3
270	270.6	0.6	270.9	0.9	±3
315	314.1	-0.9	314.4	-0.6	±3
Avg		-0.3			



Audited By: R. Attridge

¹ Declination added to compass

² May reference wider acceptance criteria in QA Handbook for Air Pollution Measurement

Systems, Volume IV - Meteorological Measurements, August 1989

WIND SPEED, 10 METERS, AS LEFT
Calibration Summary



Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

Model: 5305 Calibration Motor No.: CA03377
Serial No: 98304 Calibration Disk No.: Disk 1

System Linearity Check

	Standard RPM	Target* m/s	Logger Reading m/s	Difference m/s	Acceptance Criteria
CW	0.0	0.00	0.00	0.00	0.0
CW	200.0	1.02	1.02	0.00	0.3
CW	400.0	2.05	2.04	-0.01	0.3
CW	600.0	3.07	3.07	0.00	0.4
CW	800.0	4.10	4.90	0.80	0.4
CW	1000.0	5.12	5.12	0.00	0.5
CW	2000.0	10.24	10.24	0.00	0.7
CW	3000.0	15.36	15.36	0.00	1.0
CW	4000.0	20.48	20.48	0.00	1.2
CW	5000.0	25.60	25.60	0.00	1.5

Bearing Torque Test (Passing 0.4 m/s = 0.6 g-cm)

Clockwise 0.2 g-cm
Counterclockwise 0.2 g-cm

RM Young
*Target (m/s) = rpm x
0.00512

Audited By: A. Schlabaugh

WIND DIRECTION, 10 METERS
Calibration Summary



Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

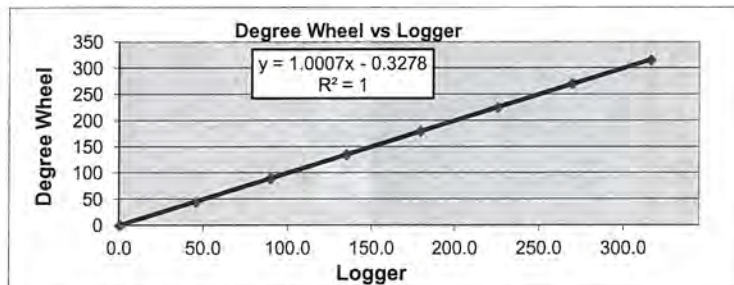
Model: 5305 Serial No: 98304 Compass No.: 1234

System Accuracy and Linearity Check

Declination⁽¹⁾ = 10 °East

Orientation	Compass (w/o declination) (Degrees)	Compass (w/ declination) (Degrees)	Target (Degrees)	Logger Reading (Degrees)	Difference (Degrees)	Acceptance Criteria
1. Vane	182.0	172.0	172.0	171.1	-0.9	±5
Tail	4.0	354.0	354.0	353.8	-0.2	±5

	Initial Logger (Degrees)	Difference (Degrees)	Corrected Logger (Degrees)	Difference (Degrees)	Acceptance Criteria ^[2]
CW					
0	0.8	0.8	0.6	0.6	±3
45	45.8	0.8	45.6	0.6	±3
90	89.8	-0.2	89.6	-0.4	±3
135	134.9	-0.1	134.7	-0.3	±3
180	179.3	-0.7	179.1	-0.9	±3
225	225.5	0.5	225.3	0.3	±3
270	269.5	-0.5	269.3	-0.7	±3
315	316.1	1.1	315.9	0.9	±3
Avg		0.2			
CCW					
0	1.0	1.0	0.4	0.4	±3
45	44.6	-0.4	44.0	-1.0	±3
90	91.2	1.2	90.6	0.6	±3
135	136.4	1.4	135.8	0.8	±3
180	181.2	1.2	180.6	0.6	±3
225	225.1	0.1	224.5	-0.5	±3
270	270.3	0.3	269.7	-0.3	±3
315	314.9	-0.1	314.3	-0.7	±3
Avg		0.6			



Audited By: A. Schlabaugh

¹ Declination added to compass

² May reference wider acceptance criteria in *QA Handbook for Air Pollution Measurement Systems, Volume IV - Meteorological Measurements, August 1989*

AMBIENT TEMPERATURE, 2 METERS
Calibration Summary



AIR SCIENCES INC.

Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

ISSUED FOR USE ONLY

Model: HC2S3-L
Std Model: HC2S3

Serial No: 61247378
Ref Serial No: 61045434

System Linearity Check

	Standard (°C)	Logger Reading (°C)	Difference (°C)	Acceptance Criteria
1.	18.0	18.1	0.0	±2
2.	18.1	18.3	-0.3	±2
3.	18.1	18.3	-0.2	±2
4.	18.1	18.3	-0.2	±2
5.	18.1	18.3	-0.3	±2
6.	18.1	18.3	-0.3	±2
7.	18.1	18.3	-0.2	±2
8.	18.1	18.3	-0.2	±2
9.	18.1	18.3	-0.2	±2
10.	18.1	18.4	-0.3	±2

Audited By: A. Schlabaugh

RELATIVE HUMIDITY, 2 METERS
Calibration Summary



Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

Model: HC2S3-L Serial No: 61247378
Std Model: HC2S3 Std Serial No: 61045434

	Standard	Logger Reading	Difference	Acceptance Criteria
	(%)	(%)	(%)	(%)
1.	23.3	22.8	0.5	±7
2.	23.1	22.7	0.4	±7
3.	23.0	22.7	0.3	±7
4.	23.0	22.7	0.3	±7
5.	23.0	22.6	0.4	±7
6.	22.9	22.6	0.3	±7
7.	22.8	22.6	0.2	±7
8.	22.9	22.6	0.3	±7
9.	22.81	22.47	0.3	±7
10.	22.74	22.49	0.3	±7

Audited By: A. Schlabaugh

DELTA TEMPERATURE, 2 and 10 METERS
AUDIT SUMMARY



AIR SCIENCES INC.

SEASIDE - PORTLAND

Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

Model: 41342 Serial No (2m): 020205
Std Model: 41342 Serial No (10m): 020211
Std Serial No: TS22518

Aspirator Fans Working Properly? **Y**

	Standard	2 Meter	10 Meter	Difference 2 Meter ^[1]	Difference 10 Meter ^[1]
	(°C)	(°C)	(°C)	(°C)	(°C)
Bath 1	1.07	0.99	1.03	0.08	0.04
Bath 2	24.07	24.10	24.09	0.03	0.02
Bath 3	67.02	66.99	66.97	0.03	0.05

Delta T ^[2]
(°C) Difference 10M vs. 2M
0.04
0.01
0.02

1. The acceptance criteria for deviation from the standard for both upper and lower temperatures is ± 0.5
2. The acceptance criteria for deviation from the standard for delta temperatures is ± 0.1

Audited By: A. Schlabaugh

BAROMETRIC PRESSURE, 1 METER
AUDIT SUMMARY



Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

Model: PTB110
Std Model: CS106

Serial No: J3610003
Std Serial No: C4240088

System Linearity Check

	Standard (mmHg)	Logger Reading (mmHg)	Difference (mmHg)	Acceptance Criteria (mmHg)
1.	687.2	685.0	2.2	±2.3
2.	687.2	685.0	2.2	±2.3
3.	687.2	685.0	2.2	±2.3
4.	687.2	685.0	2.2	±2.3
5.	687.2	685.0	2.2	±2.3

Audited By: A. Schlabaugh

SOLAR RADIATION, 2 METERS
AUDIT SUMMARY



AIR SCIENCES INC.

PENNSYLVANIA

Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

Model: CMP3
Std Model: CMP6

Serial No: 115433
Std Serial No: 123275

System Linearity Check

	Standard (W/m^2)	Logger Reading (W/m^2)	Difference (W/m^2)	Difference (%)	Acceptance Criteria
Covered Reading	0.0	0.0	0.0	0.0	$\pm 25 \text{ W/m}^2$ or 5%
1.	29.4	36.4	-7.0	19.2	$\pm 25 \text{ W/m}^2$ or 5%
2.	29.9	36.2	-6.3	17.4	$\pm 25 \text{ W/m}^2$ or 5%
3.	30.8	38.6	-7.8	20.2	$\pm 25 \text{ W/m}^2$ or 5%
4.	30.9	39.0	-8.1	20.8	$\pm 25 \text{ W/m}^2$ or 5%
5.	31.4	39.5	-8.1	20.5	$\pm 25 \text{ W/m}^2$ or 5%
6.	31.9	40.5	-8.6	21.2	$\pm 25 \text{ W/m}^2$ or 5%
7.	33.5	42.3	-8.8	20.8	$\pm 25 \text{ W/m}^2$ or 5%
8.	36.4	45.9	-9.5	20.7	$\pm 25 \text{ W/m}^2$ or 5%
9.	38.7	49.4	-10.7	21.7	$\pm 25 \text{ W/m}^2$ or 5%
10.	46.4	50.3	-3.9	7.8	$\pm 25 \text{ W/m}^2$ or 5%
		Average	-7.9		

Audited By: R. Attridge

PRECIPITATION, GROUND LEVEL
AUDIT SUMMARY



AIR SCIENCES INC.

DEER • PORTLAND

Operator: Air Sciences
Site Name: West Plant
Project: 262-13
Date: 1/26/2015

Model: 52202 Serial No: 08738

System Linearity Check

	Water (cc)	Calculated Target* (inches)	Logger Reading (inches)	Difference (inches)
1.	2.10	0.0042	0.004	0.000
2.	2.10	0.0042	0.004	0.000
3.	2.10	0.0042	0.004	0.000
4.	2.00	0.0040	0.004	0.000
5.	2.10	0.0042	0.004	0.000
6.	2.00	0.0040	0.004	0.000
7.	2.10	0.0042	0.004	0.000
8.	2.00	0.0040	0.004	0.000
9.	2.00	0.0040	0.004	0.000
10.	2.00	0.0040	0.004	0.000
Total	20.50	0.0408	0.040	0.001

Reading taken from final storage for period averaged data = 0.04 inches

*Target (Campbell Scientific gauge) = water (cc)/2.01*0.004(inches)

Audited By: A. Schlabaugh

知不足斋丛书 宋李昉等撰 宋李昉等撰

As a result of the audit activities, data shall be invalidated from 1700 - 1800hrs.

Signatures:

Long Ottidge
Jan. 11/11

West Plant BAM-1020 PM_{2.5} Audit Sheet

Model:

BAM-1020

Serial
Number:

M8193

Audit Date:

01/26/2015

Audited By:

A. Schlabaugh

Audit Time:

18:00

Firmware:

Flow Audits

Flow Reference Standard Used:	Model: DeltaCal	Serial No: 1103	Calibration Date: 3/5/2014
Temperature Standard Used:	Model: DeltaCal	Serial No: 1103	Calibration Date: 3/5/2014
Barometric Pressure Standard Used:	Model: DeltaCal	Serial No: 1103	Calibration Date: 3/5/2014

Leak Check Value:

as
found:

0.5

Should Be:
<1.0

as left:

0.2

Should Be:
<1.0

Ambient Temperature (°C):

as
found:

BAM

Ref. Std.

16.9

18.7

Barometric Pressure (mmHg):

as
found:

688

686.0

Flow Rate (15.0 LPM):

as
found:

15.0

14.84

Flow Rate (18.4 LPM):

as
found:

18.4

18.29

Flow Rate (16.7 LPM):

as
found:

16.7

16.56

as left:

BAM

Ref. Std.

18.4

18.3

as left:

686

686.0

as left:

15.0

14.75

as left:

18.4

18.32

as left:

16.7

16.46

Adjusted

X

Adjusted

X

Adjusted

Adjusted

Adjusted

Audit Notes:

Mechanical Audits

Pump muffler unclogged:	As found	X	As left	
Sample nozzle clean:	As found		As left	X
Tape support vane clean:	As found		As left	X
Capstan shaft clean:	As found		As left	X
Rubber pinch rollers clean:	As found		As left	X
Chassis ground wire installed:	As found		As left	X

PM10 particle trap clean:	As found		As left	X	N/A	
PM10 drip jar empty:	As found		As left	X	N/A	
PM10 bug screen clean:	As found		As left	X	N/A	
PM2.5 particle trap clean:	As found		As left	X	N/A	
Inlet tube water-tight seal OK:	As found	X	As left	X		
Inlet tube perpendicular to BAM:	As found	X	As left	X		

Signature:

West Plant BAM-1020 PM₁₀ Audit Sheet

Model: **BAM-1020**

Serial Number: **M8712**

Audit Date: **1/26/2015**
Audit Time: **18:00**

Audited By: **A. Schlabaugh**

Firmware:

Flow Audits			
Flow Reference Standard Used:	Model: DeltaCal	Serial No: 1103	Calibration Date: 3/5/2014
Temperature Standard Used:	Model: DeltaCal	Serial No: 1103	Calibration Date: 3/5/2014
Barometric Pressure Standard Used:	Model: DeltaCal	Serial No: 1103	Calibration Date: 3/5/2014

Leak Check Value: as found: **0.3** Should Be: **<1.0** as left: **0.2** Should Be: **<1.0**

Ambient Temperature (°C):

	BAM	Ref. Std.
as found:	17.0	18.7
as found:	687	686
as found:	15.0	14.95
as found:	18.4	18.45
as found:	16.7	16.66

	BAM	Ref. Std.
as left:	18.2	18.5
as left:	687	687
as left:	15.0	15.02
as left:	18.4	18.45
as left:	16.7	16.69

Adjusted	X
Adjusted	X
Adjusted	
Adjusted	
Adjusted	

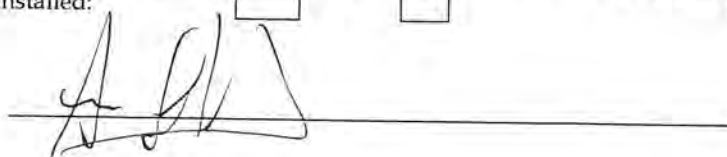
Audit Notes:

Mechanical Audits

Pump muffler unclogged:	As found	X	As left	
Sample nozzle clean:	As found		As left	X
Tape support vane clean:	As found		As left	X
Capstan shaft clean:	As found		As left	X
Rubber pinch rollers clean:	As found		As left	X
Chassis ground wire installed:	As found	X	As left	

PM10 particle trap clean:	As found		As left	X	N/A	
PM10 drip jar empty:	As found		As left	X	N/A	
PM10 bug screen clear:	As found		As left	X	N/A	
PM2.5 particle trap clean:	As found		As left		N/A	X
Inlet tube water-tight seal OK:	As found	X	As left			
Inlet tube perpendicular to BAM:	As found	X	As left			

Signature:





AIR SCIENCES INC.

DENVER • PORTLAND

**Startup Audit
Report
Resolution Copper
Hewitt Station
Monitoring Site**

PREPARED FOR:
RESOLUTION COPPER
MINING



PREPARED BY:
AIR SCIENCES INC.

PROJECT NO. 262-13
JANUARY 2015

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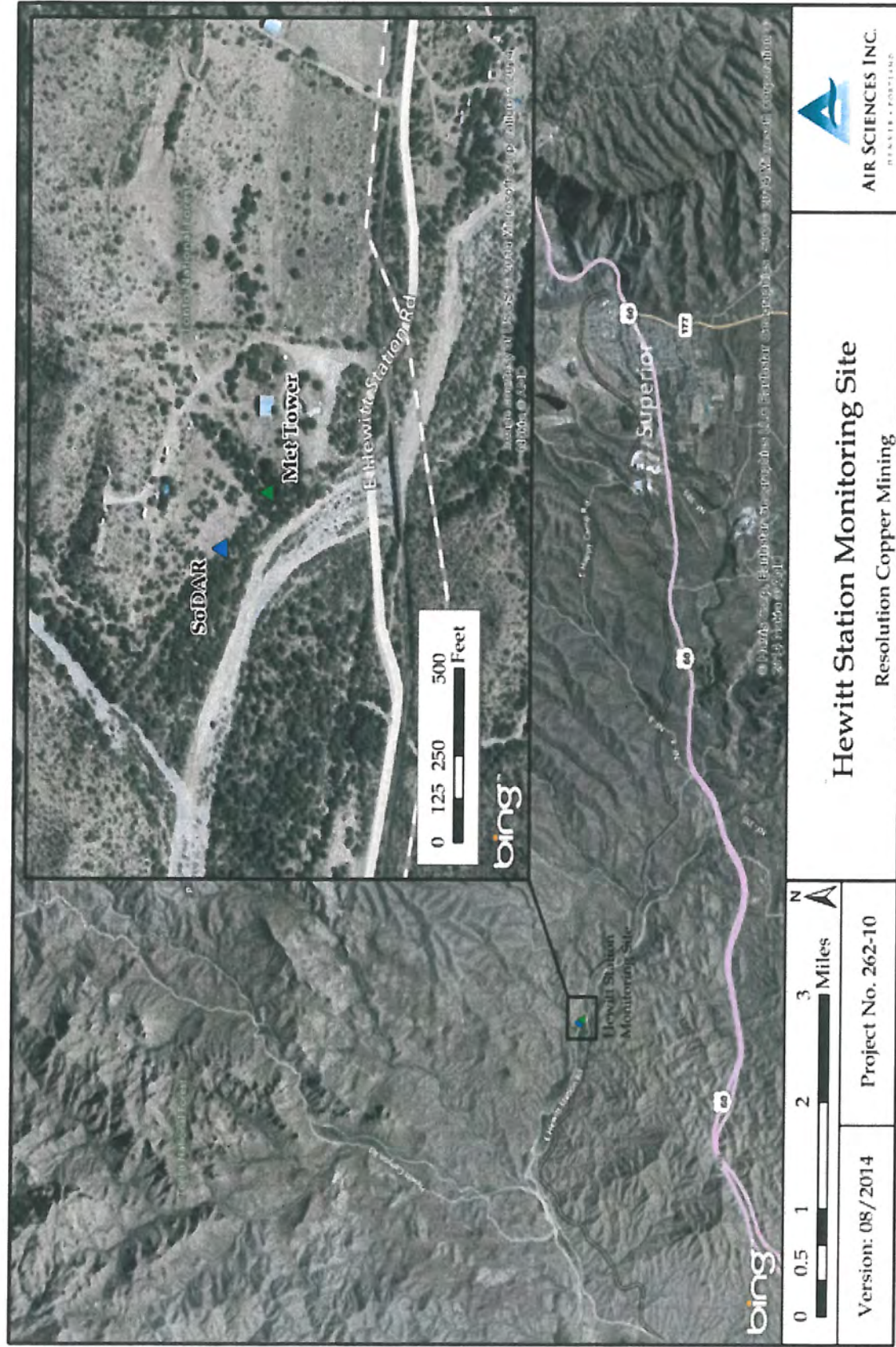
Appendix A – Audit Forms	
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1.0 INTRODUCTION

On January 28, 2014, a startup audit of the meteorological and upper air instrumentation was performed at the Resolution Copper Hewitt Station monitoring site near Superior, AZ. The Hewitt Station monitoring site is operated by the Resolution Copper Mining Company and is located approximately six miles west of the Superior (see Figure 1-1). The startup audit activities described in this report were conducted in accordance with the following guideline documents:

- EPA-450/4-87-007, Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), May 1987
- EPA-454/R-99-005, Meteorological Monitoring Guidance for Regulatory Modeling Applications, Section 8.4, February 2000
- EPA-454/B-08-002, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0, March 2008

Figure 1-1. Project Location Map – Resolution Copper Hewitt Station Monitoring Site



2.0 SYSTEM DESCRIPTION

The meteorological and upper-air instrumentation audited at the Hewitt Station monitoring site measures wind speed, wind direction, ambient temperature, vertical height temperature difference (delta temperature), solar radiation, relative humidity, and barometric pressure. The Sonic Detection and Ranging (SoDAR) system collects upper-air measurements at ten meter intervals from 20 to 190 meters (65-623ft).

The meteorological sensors are mounted to a 65-foot, open-lattice, fixed steel tower. The SoDAR is located 200ft west of the meteorological within a weather proof enclosure. The sensor and SoDAR heights are listed in Table 2-1 (as measured from ground-level).

**Table 2-1. Sensor Heights
(meters above the ground)**

Parameter	Approximate Height (meters)
Wind Speed	10, 20
Wind Direction	10, 20
Ambient Temperature	2
Delta Temperature	2, 10
Solar Radiation	2
Relative Humidity	2
Barometric Pressure	1.5
SoDAR	1

Meteorological data are recorded by a Campbell Scientific CR3000 datalogger, powered independently by a DC solar power system. All meteorological sensors are measured on a one-second scan interval, and the output is digitally processed and recorded into 15-minute averages. The raw 15-minute averages are temporarily stored on the datalogger memory and securely transmitted, via cellular broadband Internet services, to the Air Sciences Inc. (Air Sciences) server. The raw 15-minute data are processed into the Data Acquisition and Storage System (DASS) for quality assurance checks.

The upper-air data are computed and recorded as raw 15-minute averages using the SoDAR computer and internally programmed algorithms. These averages are temporarily stored on the SoDAR computer and securely transmitted every 24 hours via cellular broadband Internet, to the Air Sciences server. The SoDAR is powered independently by a DC solar power system.

The Hewitt Station meteorological and upper-air raw 15-minute data averages are used as input for the calculation of one-hour averages.

3.0 AUDIT METHODOLOGY

This section provides the audit and/or comparison procedures for the meteorological and upper-air instrumentation at the Resolution Copper Hewitt Station monitoring site. Copies of the completed audit forms for each parameter are included in Appendix A.

3.1 Meteorological Sensor Audit Procedures

The wind speed sensor audit was performed by rotating the sensor shaft using a DC-powered variable-speed motor equipped with an optical encoder output referenced to a crystal oscillator. A target sensor speed was calculated based on the audit rotational speed and compared to the instantaneous datalogger reading. An R. M. Young Torque Disc was used to measure the anemometer starting torque. All data were recorded on a standardized form.

The audit of the wind direction system was performed by the aligning the sensor to its mounting cross-arm. A Brunton Precision Magnetic Compass (BPMC) mounted on a tripod was used to establish the orientation of the cross-arm using the Magnetic Declination Method.¹ With the wind direction sensor oriented along the axis of the cross-arm, the sensor response was compared to the BPMC-measured value and recorded on a standardized form. The potentiometer linearity was checked by recording the system response at 45-degree intervals over the operating range of the system.

The ambient temperature sensor audit was performed by comparing the temperature sensor in-situ to a NIST-traceable² temperature sensor. Both thermometer and datalogger readings were recorded on a standardized form.

The differential temperature sensor audit was performed by immersing both temperature sensors in a series of three water baths within the range of the temperature sensors. Positive and negative temperature differentials were checked by immersing the sensors in separate water baths. All cabling and associated wiring remained intact for the audit of both sensors. A Precision Temperature Sensor was used to measure the bath temperatures. All audit data were recorded on standardized forms.

The solar radiation sensor audit was performed by comparing the sensor in-situ to a calibrated pyranometer wired to an independent datalogger. Both the standard and the datalogger readings were recorded on a standardized form.

¹ Refer to section 2.5.2.2 of the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0, March 2008, for more details.

² National Institute of Standards and Technology

The relative humidity sensor audit was performed by comparing the humidity sensor in-situ to a NIST-traceable humidity sensor. Both the standard and datalogger readings were recorded on a standardized form.

The barometric pressure sensor audit was performed by comparing the sensor in-situ to a NIST-traceable barometric pressure standard. Both the standard and datalogger readings were recorded on a standardized form.

3.2 SoDAR System Audit and Comparison Procedures

The SoDAR system audit was performed by initially checking the proper mode of operation and peripheral operating systems such as the on-board generator, solar power, and communication systems in accordance to the manufacture recommendations.

The separate and distinct pulse pattern of the SoDAR was evaluated by generalized audibility.

The SoDAR rotation angle was obtained by siting along the y - axis of the antenna using a Brunton Precision Magnetic Compass (BPMC) mounted on a tripod and compared to the systems software settings.

To ensure a proper system level, a digital level was used to measure the pitch and roll of the SoDAR horizontally.

The SoDAR computer was accessed through the systems LCD interface to obtain the reported date, time, speaker array and antenna status.

The SoDAR monitoring site was inspected for physical obstructions and unusual ambient noise sources or echoes.

The SoDAR system audit results were recorded on a standardized form.

The comparison method was performed to quantify the reasonableness of the SoDAR data. The SoDAR data was compared to the data collected from an adjacent tower. Using the comparison approach, at least 24 hours of data between the tower and SoDAR was compared at the 20-meter level. This comparison method provided an overall evaluation of the SoDAR performance and a means for detecting potential active and passive noise sources.

During periods of calm winds, the adjacent tower's mechanical wind monitor floats within its measurement range, which results in a significant difference between the compared values of the two systems. The vector wind speed and direction comparisons between the SoDAR and the adjacent tower was applied using hourly averaged wind speeds equal to or greater than four meters per second. The data comparison results of data can be found in figures 3-1 and 3-2.

Figure 3-1. 20-Meter Wind Speed and Direction Comparison

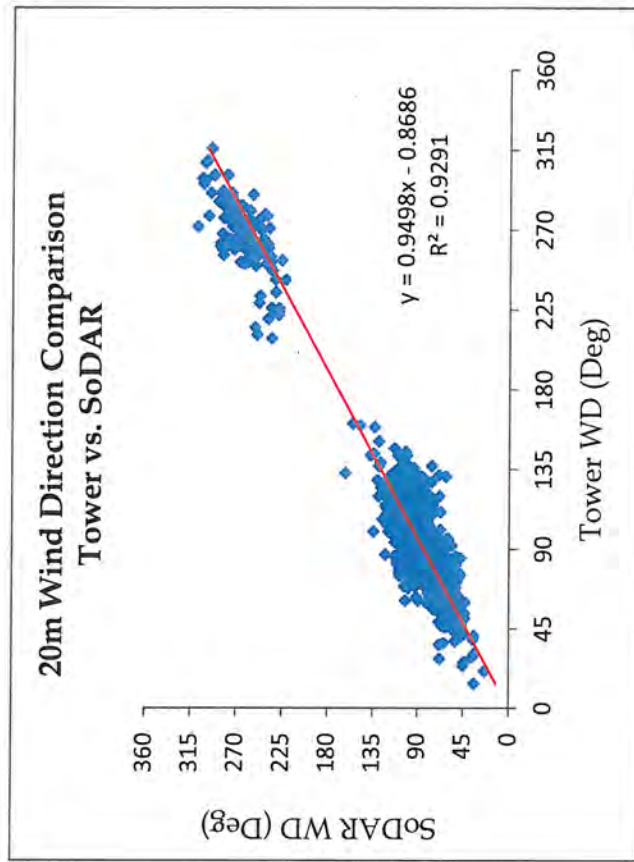
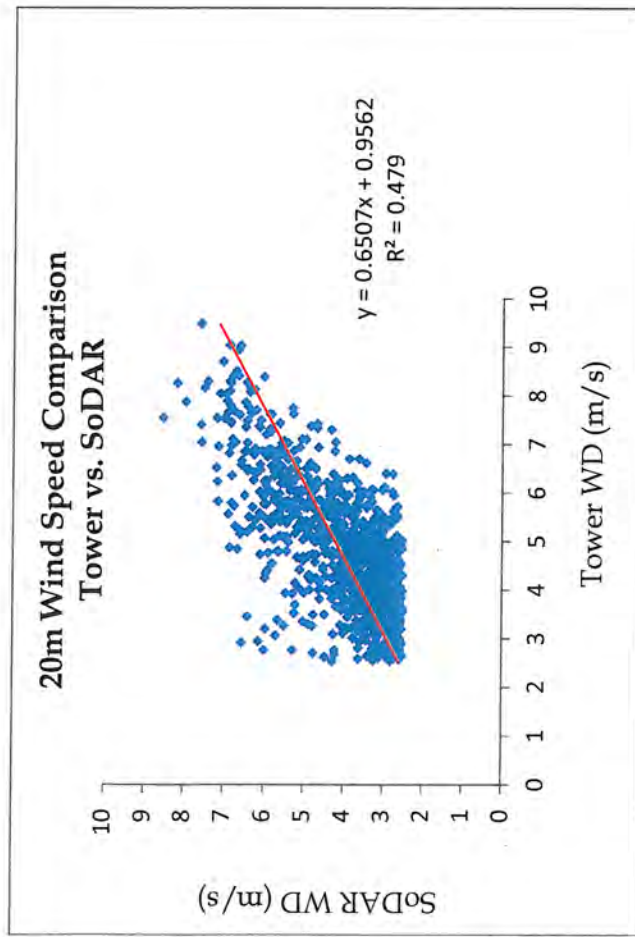
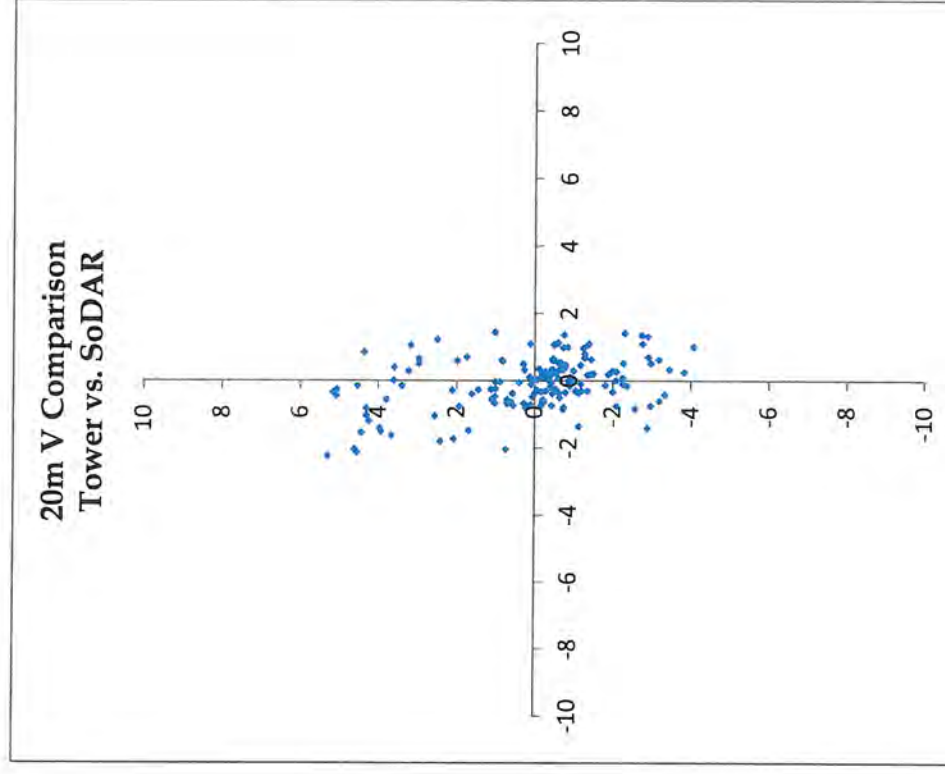
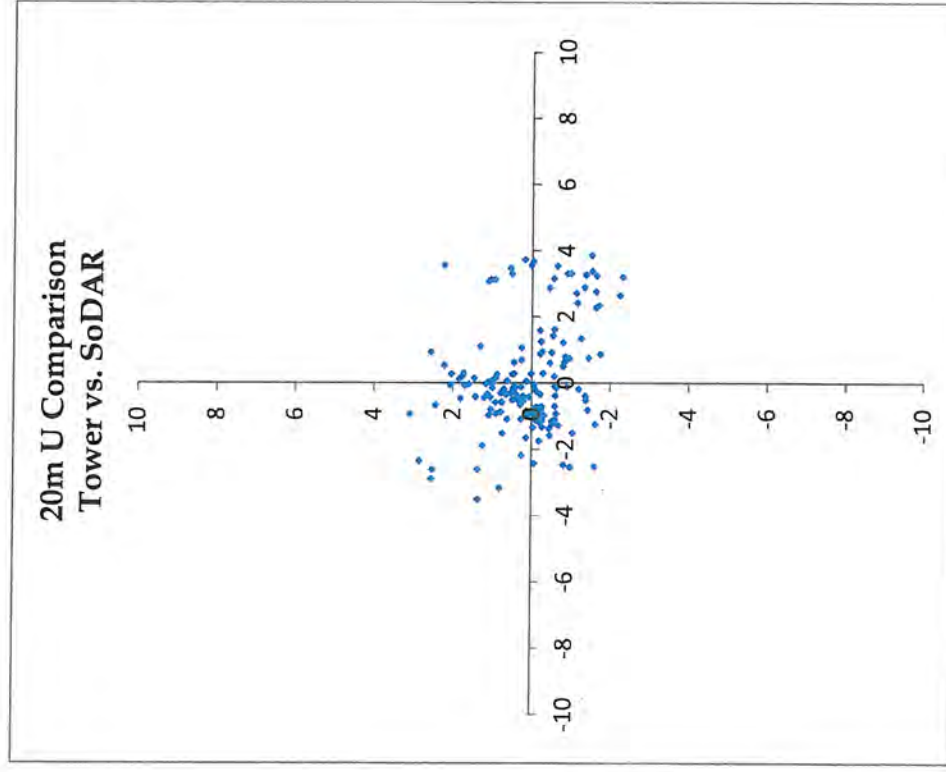


Figure 3-2. 20-Meter U and V Comparison



4.0 RESULTS AND RECOMMENDATIONS

Intermittent connectivity with the SoDAR communications was observed suggesting a potential substandard wifi antenna, network patch cable and or glitches within the SoDAR internal communication software. The SoDAR manufacture suggests circumventing the wifi antenna and directly connecting the SoDAR to the local network to maintain reliable communications. Given the distance between the tower and SoDAR, a 150ft patch cable should be procured and deployed as soon as its feasible.

The SoDAR system audit comparison results have established confidence that the SoDAR is sited and operating correctly with the exception of the aforementioned communications issue. The January 1-21, 2015 data set was used for the comparability procedures and the results in figures 3-1 and 3-2 satisfy the monitoring plan objectives.

All other instruments, sensors, and operating systems were determined as serviceable, and within their recommended tolerance parameters.

All affected meteorological data will be invalidated due to the on-site audit activities.

Appendix A - Audit Forms

METEOROLOGICAL STATION AUDIT SUMMARY



AIR SCIENCES INC.

DENVER • PORTLAND

Client : Resolution Copper Company
Project No. : 262-13-1
Site : Hewitt Station
Date : 1/28/2015
Time: 09:00 - 11:30
Personnel: R. Attridge
A. Schlabauch

SITE MONITORING PARAMETERS AND SENSORS				
Parameter	Sensors	Model #	Serial Number	Instrument Location on Site
Datalogger	Campbell Sci. Micrologger	CR3000	9459	1 meter
Wind Speed	R. M. Young Wind Monitor	5305	129212	10 meters
Wind Direction	R. M. Young Wind Monitor	5305	129212	10 meters
Wind Speed	R. M. Young Wind Monitor	5305	129214	20 meters
Wind Direction	R. M. Young Wind Monitor	5305	129214	20 meters
Ambient Temperature	Campbell Sci. Probe	HC2S3-L	61222062	2 meters
Relative Humidity	Campbell Sci. Probe	HC2S3-L	61222062	2 meters
Barometric Pressure	Vaisala PTB110 Barometer	PTB110B	K1640005	1.5 meters
Delta Temperature (2m)	R. M. Young 1K RTD Temp. Sensor	41342	24466	2 meters
Delta Temperature (10m)	R. M. Young 1K RTD Temp. Sensor	41342	24382	10 meters
Solar Radiation	Campbell Sci. Pyranometer	CMP3	140693	2 meters

QUALITY ASSURANCE AUDIT EQUIPMENT				
Parameter	Reference Device	Model #	Serial Number	Re-Calibration Date
Datalogger	Campbell Sci. Micrologger	CR 3000	3200	5/2/2015
System Accuracy & Linearity	Compass	N/A	1234	1/16/2016
Wind Speed	R. M. Young Anemometer Drive	18802	CA03377	1/14/2016
Torque	Disk 1	N/A	N/A	N/A
Ambient Temperature	HygroClip 2	HC2S3	61045434	1/10/2016
Relative Humidity	HygroClip 2	HC2S3	61045434	1/10/2016
Barometric Pressure	Vaisala PTB110 Barometer	CS106	C4240088	1/14/2016
Delta Temperature	Campbell Sci. RTD Probe	41342	TS22518	01/10/2016
Solar Radiation	Campbell Sci. Pyranometer	CMP6	123275	03/08/2016
Precipitation	10 mL Syringe	N/A	N/A	N/A

WIND SPEED, 10 METERS
AUDIT SUMMARY



AIR SCIENCES INC.

DENVER • FORTLAND

Operator: Air Sciences
Site Name: Hewitt Station
Project: 262-13-1
Date: 1/28/2015

Model: 5305
Serial No: 129212

Calibration Motor No.: CA03377
Calibration Disk No.: Disk 1

System Linearity Check

	Standard RPM	Target* m/s	Logger Reading m/s	Difference m/s	Acceptance Criteria
CW	0.0	0.00	0.00	0.00	0.0
CW	200.0	1.02	1.02	0.00	0.3
CW	400.0	2.05	2.05	0.00	0.3
CW	600.0	3.07	3.07	0.00	0.4
CW	800.0	4.10	4.10	0.00	0.4
CW	1000.0	5.12	5.12	0.00	0.5
CW	2000.0	10.24	10.24	0.00	0.7
CW	3000.0	15.36	15.36	0.00	1.0
CW	4000.0	20.48	20.48	0.00	1.2
CW	5000.0	25.60	25.60	0.00	1.5

Bearing Torque Test (Passing 0.4 m/s = 0.6 g-cm)

Clockwise 0.4 g-cm
Counterclockwise 0.4 g-cm

RM Young
*Target (m/s) = rpm x
0.00512

Audited By: R. Attridge A. Schlabaugh

WIND DIRECTION, 10 METERS
AUDIT SUMMARY



Operator: Air Sciences
Site Name: Hewitt Station
Project: 262-13-1
Date: 1/28/2015

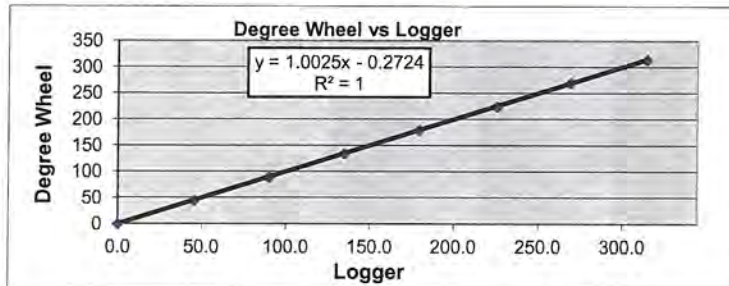
Model: 5305 Serial No: 129212 Compass No.: 1234

System Accuracy and Linearity Check

Declination^[1] = 10 °East

Orientation	Compass (w/o declination) (Degrees)	Compass (w/declination) (Degrees)	Target (Degrees)	Logger Reading (Degrees)	Difference (Degrees)	Acceptance Criteria
1. Vane	112.0	102.0	102.0	103.3	1.3	±5
Tail	294.0	284.0	284.0	282.4	-1.6	±5

	Initial Logger (Degrees)	Difference (Degrees)	Corrected Logger (Degrees)	Difference (Degrees)	Acceptance Criteria ^[2]
CW					
0	0.2	0.2	0.3	0.3	±3
45	45.6	0.6	45.7	0.7	±3
90	89.8	-0.2	89.9	-0.1	±3
135	134.8	-0.2	134.9	-0.1	±3
180	179.3	-0.7	179.4	-0.6	±3
225	225.6	0.6	225.7	0.7	±3
270	269.0	-1.0	269.1	-0.9	±3
315	314.7	-0.3	314.8	-0.2	±3
Avg		-0.1			
CCW					
0	0.5	0.5	0.4	0.4	±3
45	45.2	0.2	45.1	0.1	±3
90	89.4	-0.6	89.3	-0.7	±3
135	134.8	-0.2	134.7	-0.3	±3
180	179.3	-0.7	179.2	-0.8	±3
225	225.8	0.8	225.7	0.7	±3
270	270.9	0.9	270.8	0.8	±3
315	314.9	-0.1	314.8	-0.2	±3
Avg		0.1			



Audited By: R. Attridge A. Schlabaugh

¹ Declination added to compass

² May reference wider acceptance criteria in QA Handbook for Air Pollution Measurement

Systems, Volume IV - Meteorological Measurements, August 1989

WIND SPEED, 10 METERS
Calibration Summary



AIR SCIENCES INC.

HEWITT • TOPILAND

Operator: Air Sciences
Site Name: Hewitt Station
Project: 262-13-1
Date: 1/28/2015

Model: 5305 Calibration Motor No.: CA03377
Serial No: 129214 Calibration Disk No.: Disk 1

System Linearity Check

	Standard RPM	Target* m/s	Logger Reading m/s	Difference m/s	Acceptance Criteria
CW	0.0	0.00	0.00	0.00	0.0
CW	200.0	1.02	1.02	0.00	0.3
CW	400.0	2.05	2.05	0.00	0.3
CW	600.0	3.07	3.07	0.00	0.4
CW	800.0	4.10	4.10	0.00	0.4
CW	1000.0	5.12	5.12	0.00	0.5
CW	2000.0	10.24	10.24	0.00	0.7
CW	3000.0	15.36	15.36	0.00	1.0
CW	4000.0	20.48	20.48	0.00	1.2
CW	5000.0	25.60	25.60	0.00	1.5

Bearing Torque Test (Passing 0.4 m/s = 0.6 g-cm)

Clockwise 0.2 g-cm
Counterclockwise 0.2 g-cm

RM Young
*Target (m/s) = rpm x
0.00512

Audited By: R. Attridge A. Schlabaugh

WIND DIRECTION, 10 METERS
Calibration Summary



Operator: Air Sciences
Site Name: Hewitt Station
Project: 262-13-1
Date: 1/28/2015

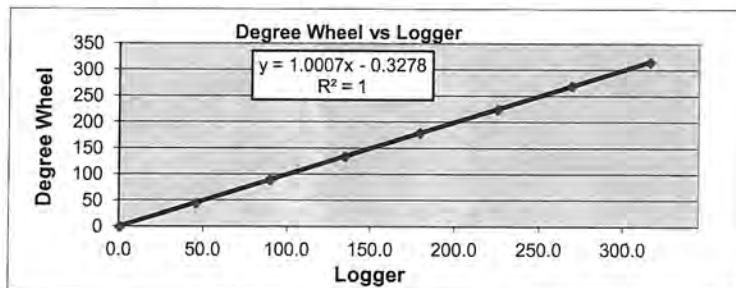
Model: 5305 Serial No: 129214 Compass No.: 1234

System Accuracy and Linearity Check

Declination^[1] = 10 °East

Orientation	Compass (w/o declination) (Degrees)	Compass (w/declination) (Degrees)	Target (Degrees)	Logger Reading (Degrees)	Difference (Degrees)	Acceptance Criteria
1. Vane	112.0	102.0	102.0	101.5	-0.5	±5
Tail	294.0	284.0	284.0	281.9	-2.1	±5

	Initial Logger (Degrees)	Difference (Degrees)	Corrected Logger (Degrees)	Difference (Degrees)	Acceptance Criteria ^[2]
CW					
0	0.8	0.8	0.6	0.6	±3
45	45.8	0.8	45.6	0.6	±3
90	89.8	-0.2	89.6	-0.4	±3
135	134.9	-0.1	134.7	-0.3	±3
180	179.3	-0.7	179.1	-0.9	±3
225	225.5	0.5	225.3	0.3	±3
270	269.5	-0.5	269.3	-0.7	±3
315	316.1	1.1	315.9	0.9	±3
Avg		0.2			
CCW					
0	1.0	1.0	0.4	0.4	±3
45	44.6	-0.4	44.0	-1.0	±3
90	91.2	1.2	90.6	0.6	±3
135	136.4	1.4	135.8	0.8	±3
180	181.2	1.2	180.6	0.6	±3
225	225.1	0.1	224.5	-0.5	±3
270	270.3	0.3	269.7	-0.3	±3
315	314.9	-0.1	314.3	-0.7	±3
Avg		0.6			



Audited By: R. Attridge A. Schlabaugh

¹ Declination added to compass

² May reference wider acceptance criteria in QA Handbook for Air Pollution Measurement

Systems, Volume IV - Meteorological Measurements, August 1989

AMBIENT TEMPERATURE, 2 METERS
AUDIT SUMMARY



Operator: Air Sciences
Site Name: Hewitt Station
Project: 262-13-1
Date: 1/28/2015

011-05000-3-01-0111-01-01

Model: HC2S3-L
Std Model: HC2S3

Serial No: 61222062
Ref Serial No: 61045434

System Linearity Check

	Standard (°C)	Logger Reading (°C)	Difference (°C)	Acceptance Criteria
1.	19.4	18.7	0.7	±2
2.	19.6	18.7	0.9	±2
3.	19.6	18.5	1.1	±2
4.	19.4	18.7	0.7	±2
5.	19.9	19.0	0.9	±2
6.	19.9	19.3	0.6	±2
7.	20.3	19.8	0.5	±2
8.	20.6	20.3	0.3	±2
9.	20.6	20.2	0.4	±2
10.	20.8	20.2	0.6	±2

Audited By: R. Attridge

RELATIVE HUMIDITY, 2 METERS
AUDIT SUMMARY



AIR SCIENCES INC.

Operator: Air Sciences
Site Name: Hewitt Station
Project: 262-13-1
Date: 1/28/2015

Model: HC2S3-L Serial No: 61222062
Std Model: HC2S3 Std Serial No: 61045434

	Standard	Logger Reading	Difference	Acceptance Criteria
	(%)	(%)	(%)	(%)
1.	60.4	59.2	1.2	±7
2.	59.8	59.4	0.4	±7
3.	59.4	59.2	0.2	±7
4.	58.6	58.7	-0.1	±7
5.	59.7	58.7	1.0	±7
6.	59.2	58.5	0.7	±7
7.	60.2	58.3	1.9	±7
8.	60.4	58.9	1.5	±7
9.	59.6	58.2	1.4	±7
10.	59.6	58.2	1.4	±7

Audited By: R. Attridge

DELTA TEMPERATURE, 2 and 10 METERS
AUDIT SUMMARY



AIR SCIENCES INC.

SEASIDE & PORTLAND

Operator: Air Sciences
Site Name: Hewitt Station
Project: 262-13-1
Date: 1/28/2015

Model: 41342	Serial No (2m): 24466
	Serial No (10m): 24382
Std Model: 41342	Std Serial No: TS22518

Aspirator Fans Working Properly? Y

	Standard (°C)	2 Meter (°C)	10 Meter (°C)	Difference 2 Meter ^[1] (°C)	Difference 10 Meter ^[1] (°C)
Bath 1	4.72	4.74	4.76	0.02	0.04
Bath 2	28.42	28.41	28.42	0.01	0.00
Bath 3	38.79	38.84	38.88	0.05	0.09

Delta T ^[2]	Difference 10M vs. 2M
(°C)	0.02
	0.01
	0.04

1. The acceptance criteria for deviation from the standard for both upper and lower temperatures is ± 0.5
2. The acceptance criteria for deviation from the standard for delta temperatures is ± 0.1

Audited By: R. Attridge A. Schlabaugh

BAROMETRIC PRESSURE, 1 METER
AUDIT SUMMARY



Operator: Air Sciences
Site Name: Hewitt Station
Project: 262-13-1
Date: 1/28/2015

Model: PTB110B
Std Model: CS106

Serial No: K1640005
Std Serial No: C4240088

System Linearity Check

	Standard (mmHg)	Logger Reading (mmHg)	Difference (mmHg)	Acceptance Criteria (mmHg)
1.	685.5	683.4	2.1	±2.3
2.	685.5	683.4	2.1	±2.3
3.	685.5	683.4	2.1	±2.3
4.	685.5	683.4	2.1	±2.3
5.	685.5	683.4	2.1	±2.3

Audited By: R. Attridge

SOLAR RADIATION, 2 METERS
AUDIT SUMMARY



Operator: Air Sciences
Site Name: Hewitt Station
Project: 262-13-1
Date: 1/28/2015

0.157080000000000000

Model: CMP3
Std Model: CMP6

Serial No: 140693
Std Serial No: 123275

System Linearity Check

	Standard (W/m^2)	Logger Reading (W/m^2)	Difference (W/m^2)	Difference (%)	Acceptance Criteria
Covered					
Reading	0.0	0.0	0.0	0.0	$\pm 25 \text{ W/m}^2$ or 5%
1.	980.6	983.0	-2.4	0.2	$\pm 25 \text{ W/m}^2$ or 5%
2.	979.3	981.6	-2.3	0.2	$\pm 25 \text{ W/m}^2$ or 5%
3.	978.9	977.4	1.5	-0.2	$\pm 25 \text{ W/m}^2$ or 5%
4.	974.8	974.3	0.5	-0.1	$\pm 25 \text{ W/m}^2$ or 5%
5.	972.3	972.2	0.1	0.0	$\pm 25 \text{ W/m}^2$ or 5%
6.	971.9	972.9	-1.0	0.1	$\pm 25 \text{ W/m}^2$ or 5%
7.	970.0	970.3	-0.3	0.0	$\pm 25 \text{ W/m}^2$ or 5%
8.	969.3	967.6	1.7	-0.2	$\pm 25 \text{ W/m}^2$ or 5%
9.	968.7	967.0	1.7	-0.2	$\pm 25 \text{ W/m}^2$ or 5%
10.	968.5	966.4	2.1	-0.2	$\pm 25 \text{ W/m}^2$ or 5%
		Average	0.2		

Audited By: R. Attridge

COMMENTS & SIGNATURES
AUDIT SUMMARY



Operator: Air Sciences
Site Name: Hewitt Station
Project: 262-13-1
Date: 1/28/2015

COMMENTS:

The 0900-1130hrs data shall be invalidated resulting from the
audit activities.

An unofficial precipitation gauge was installed at the
Hewitt Station monitoring site in support of the land
owners' ranching activities. Data logger program modifications
and testing resulted in missing data from 1400 - 1745hrs.

Signatures:




Hewitt Station

SoDAR System Audit

Resolution Copper Company

Date: 1-28-2015 Time: 1315 Auditor: R. ATTRIDGE

SoDAR System

Instrument	ASC SoDAR
Instrument Model	WE 4000
Instrument Serial Number	3002
Rotation Angle Measured	105°
Declination	10° East
Latitude/Longitude (Deg)	Lat 33.2978 / Long -111.2114
Elevation (ft)	2,236

SoDAR System Status

SoDAR System	System Status As Found	System Status As Left
Battery Voltage (V)	13.61	13.15
Ambient Temp° C	21.8	21.2
Heater ON or OFF as Found	OFF	OFF
Generator ON or OFF as Found	OFF	OFF
Rain Detection YES or NO	NO	NO
Snow Detection YES or NO	NO	NO
Antenna Status	OK	OK
Speaker Array	Good	Good
Rotation Angle	105°	105°
System Level (< 0.5°)	P= 0.1 R= 0.1	P= 0.1 R= 0.1
Fuel Level	Empty ¼ ½ ¾ Full	Empty ¼ ½ ¾ Full
Date / Time	1-28-15 / 1315	1-28-15 / 1353

SoDAR Siting and Exposure

Azimuth Angle (Deg.)			
Magnetic	True	Terrain Elevation (ft)	Features / Distance (meters)
—	0	2,268	House on Hilltop / ~ 117m
—	30	2,246	Loafing Shed / ~ 50m
—	60	2,245	Cluster of Small Outbuildings / ~ 60m
—	90	2,242	Surface Vegetation, Scrub Brush / ~ 70m
—	120	2,243	Barn / ~102m
—	150	2,235	Meteorological Tower / ~ 60m
—	180	2,225	Rural Dirt Road / ~ 150m
—	240	2,252	Hilltop / ~ 211m
—	270	2,227	Surface Vegetation, Scrub Brush / ~ 135m
—	300	2,218	Creek Bottom / ~ 187m
—	330	2,278	Hilltop / ~ 227m

Comments/Unusual Occurrences:

Intermittent connectivity disallowed remote access of the SoDAR system. All communication systems appeared operational as found. A reboot of the SoDAR system resulted in regaining connectivity. A loose barrel connector providing power to the network switch may be the cause. Additionally, the wifi antenna that bridges the SoDAR and MET tower including the associated Cat5 patch cable should be considered suspect until further on-site troubleshooting is completed.

Auditor Signature: _____



Appendix J: CD
