

JANUARY-MARCH 2010
QUARTERLY QUALITY ASSURANCE REPORT
FOR THE
WARREN COUNTY AIR MONITORING PROJECT

Prepared For:
Pollution Control Financing Authority of Warren County
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Ref. No. 7047.08
May, 17, 2010

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List of Abbreviations and Terms Used in This Report

- ACO** – Administrative Consent Order
- AMP** – Air Monitoring Plan – The document that presents the overall scope of work for the monitoring program.
- DQOs** - Data Quality Objectives – Established criteria defining data quality goals (i.e., data accuracy, precision, completeness, and representativeness) for the WCAMP. These criteria presented in Table 1-1 of this report
- NJDEP** - New Jersey Department of Environmental Protection
- NAAQS** – National Ambient Air Quality Standards set by the U.S. EPA for specific “criteria” pollutants.
- PCFA**- Pollution Control Financing Authority of Warren County
- QAPP** – Quality Assurance Project Plan – The document that presents the quality assurance and quality control procedures that will be used in the monitoring program to ensure that high quality, representative data are being measured.
- WCAMP** – Warren County Air Monitoring Project
- SO₂** – Sulfur dioxide – A gas formed from the burning of fossil fuels.
- Precision** - The degree of mutual agreement among a series of individual measurements, values, or results; expressed by the standard deviation.
- Accuracy** - Accuracy refers to the closeness of measurements to the correct or accepted value of the quantity measured.
- Completeness** – The number of data values collected and reported over a given time interval compared to the total number of possible data values for that time interval.
- Null Data Codes** – The United States Environmental Protection Agency’s designated coding system used to replace invalid or missing data values. Typical null data codes that may appear in the tabular data are:
- 9991 - Level 1 Zero/Span Check
 - 9995 – Multipoint Calibration
 - 9986- Meteorological calibration; Zero/Span Check
 - 9980 – Analyzer/Sensor Malfunction or Failure
- ppm** – parts per million; a unit of measurement specifying a concentration
- mph** – miles per hour; a unit of measurement for wind speed
- °C** – degrees Celsius (or centigrade); a unit of measurement for temperature

1. Introduction

As a condition of an Administrative Consent Order (ACO) between Pollution Control Financing Authority of Warren County (PCFA) and the New Jersey Department of Environmental Protection (NJDEP), PCFA has elected to establish an ambient air monitoring program in the vicinity of the town of Belvidere in Warren County, New Jersey. Specifically, the Supplemental Environmental Project mandated under the ACO and described in the associated Air Monitoring Plan (AMP) and Quality Assurance Project Plan (QAPP) calls for the monitoring of Sulfur Dioxide (SO₂), and specified meteorological parameters.

The project has been designated the Warren County Air Monitoring Project (WCAMP). The primary purpose of the WCAMP is to obtain and report air quality information from Belvidere and surrounding areas and, where possible, to compare such air quality concentrations to appropriate federal or state standards.

Under the terms of the ACO, PCFA has retained and oversees a qualified contractor, Enviroplan Consulting, to set up and operate the monitoring program. PCFA is required to coordinate these activities through the New Jersey Department of Environmental Protection (NJDEP).

This report provides the quarterly quality assurance data required for the WCAMP air quality and meteorological monitoring network. Procedures governing operation, maintenance, calibration, data reduction, processing, validation and reporting activities as well as attendant quality control, quality assurance and auditing activities conform to the technical guidance contained in the WCAMP AMP and QAPP. These documents have been reviewed and received conditional approval from the NJDEP.

Section 2 of this report provides an analysis of the pollutant and meteorological data collected during the quarter. Tables 2-1 and 2-2 present the maximum hourly and five-minute averages for continuously - measured pollutants. Tables 2-3 and 2-4 present the SO₂ precision results, Table 2-5 presents the SO₂ accuracy audit results, Tables 2-6 through 2-9 present the meteorological data summary, Table 2-10 presents the data collection efficiencies by parameter and Table 2-11 presents explanations for missing data.

Additionally, one appendix is included in this report, which presents the quarterly QA forms.

Table 1-1: Data Quality Objectives

Parameter	Precision (%)	Accuracy	Completeness (%)
SO ₂	≤ ±15	Within ±15% of Observed	≥75
Wind Speed	n/a	Within ± 0.2 m/s + 5% of Observed	≥90
Wind Direction	n/a	Within ±5 degrees azimuth of Observed	≥90
Air Temperature	n/a	Within ±5°C of Observed	≥90
Solar Radiation	n/a	Within ±10% of Observed	≥90

n/a – not applicable

2 Quality Assurance for Pollutant Data

2.1 Maximum Averages for the Quarter

This section provides a summary of the relevant maximum hourly averages for continuously-measured pollutants as they apply to the NAAQS.

Table 2-1: Maximum Hourly and Five-Minute SO2 Averages – Belvidere High School

NAAQS - National Ambient Air Quality Standards			
Pollutant	Average Time	Primary Standard	Secondary Standard
Sulfur Dioxide (SO2)	Annual Arithmetic Mean	0.03 ppm	-
	24-Hour 3-Hour	0.14 ppm -	- 0.50 ppm

Belvidere High School									
Parameter/ Units	Maximum Running 3-Hour Conc.	Date (Hour)	2 nd Highest Running 3-Hour Conc.	Date (Hour)	Maximum Running 24-Hour Conc.	Date (Hour)	2 nd Highest Running 24-Hour Conc.	Date (Hour)	Annual Arith. Mean-To- Date
SO2 ppm	.064	1/10 (3)	.034	1/31 (4)	.011	1/10 (20), 1/31 (10)	.008	2/7 (10)	.002
					Maximum 24-Hour Block Conc.	Date	2 nd Highest 24-Hour Block Conc.	Date	
					.010	1/10	.009	1/31	

Belvidere High School					
Parameter/Units	Maximum 5-Minute Conc.	Date (Time)	5-Minute Averages of 0.3 ppm or Greater	1-Hour Average Preceding the 0.3 ppm Average	1-Hour Average Following the 0.3 ppm Average
SO2 ppm	.090	1/30 (11:25)	None	-	-

Table 2-2: Maximum Hourly and Five-Minute SO2 Averages – Demeter Farm

NAAQS - National Ambient Air Quality Standards			
Pollutant	Average Time	Primary Standard	Secondary Standard
Sulfur Dioxide (SO2)	Annual Arithmetic Mean	0.03 ppm	-
	24-Hour 3-Hour	0.14 ppm -	- 0.50 ppm

Demeter Farm									
Parameter/ Units	Maximum Running 3-Hour Conc.	Date (Hour)	2 nd Highest Running 3-Hour Conc.	Date (Hour)	Maximum Running 24-Hour Conc.	Date (Hour)	2 nd Highest Running 24-Hour Conc.	Date (Hour)	Annual Arith. Mean-To-Date
SO2 ppm	.045	1/10 (2)	.024	2/13 (9)	.013	1/14 (13)	.008	1/10 (4), 1/12 (2), 1/15 (13), 1/17 (4)	.003
					Maximum 24-Hour Block Conc	Date	2 nd Highest 24-Hour Block Conc.	Date	
					.013	1/14	.008	1/10	

Demeter Farm					
Parameter/Units	Maximum 5- Minute Conc.	Date (Time)	5-Minute Averages of 0.3 ppm or Greater	1-Hour Average Preceding the 0.3 ppm Average	1-Hour Average Following the 0.3 ppm Average
SO2 ppm	.072	2/24 (13:15)	None	-	-

2.2 Precision Checks

Precision checks for the continuous gas analyzers are scheduled to be performed at least once every two weeks to assess the quality of the monitoring data being reported. Two-point instrument precision response checks are performed by challenging each continuous pollutant analyzer with a known pollutant test gas concentration between 0.095 ppm and 0.105 ppm and between 0.380 ppm and 0.420 ppm. Pollutant test gas concentrations are generated using a currently-certified NIST-traceable dilution calibrator apparatus and certified gas standards.

The results of Level-1 zero/span checks performed biweekly on the SO₂ analyzers in conjunction with precision checks were within established acceptability limits.

The following equations are used for calculating data precision for the continuous analyzers. These equations conform to those contained in 40 CFR Part 58, Appendix B for reporting single instrument data precision for automated measurements used in PSD monitoring programs.

The percent difference for each precision check is calculated using the following equation:

$$d_i = \frac{Y_i - X_i}{X_i} \times 100 \quad \text{Equation (1)}$$

where, d_i is the percent difference for each precision check,
 x_i is the known concentration of the test gas used for the i -th precision check, and
 y_i is the pollutant analyzer's indicated concentration for the i -th precision check.

For each instrument, the quarterly average percent difference (d_j) is calculated using Equation 2, and the standard deviation of these differences (S_j) using Equation 3.

$$d_j = \frac{1}{n} \sum_{i=1}^n d_i \quad \text{Equation (2)}$$

$$S_j = \sqrt{\frac{1}{n-1} \left[\sum d_i^2 - \frac{1}{n} \left(\sum_{i=1}^n d_i \right)^2 \right]} \quad \text{Equation (3)}$$

where,
 n is the number of precision checks performed on the instrument during the quarter.

The 95% Probability Limits for data precision, are calculated as follows:

$$\text{Upper 95\% Probability Limit} = d_j + (1.96)(S_j) \quad \text{Equation (4)}$$

$$\text{Lower 95\% Probability Limit} = d_j - (1.96)(S_j) \quad \text{Equation (5)}$$

Table 2-3: **SO2 Single Analyzer Precision Check Results for Belvidere High School**

Data Period: January-March 2010

Date	Input ppm	Response ppm	Percent Difference	d _j	S _j	95% Probability Limits	
						Upper	Lower
1/7/10	.100	.095	-5.00				
1/20/10	.100	.099	-1.00				
2/3/10	.100	.101	1.00				
2/24/10	.100	.102	2.00				
3/3/10	.100	.101	1.00				
3/17/10	.100	.103	3.00	0.17	2.86	5.78	-5.44

Date	Input ppm	Response Ppm	Percent Difference	d _j	S _j	95% Probability Limits	
						Upper	Lower
1/7/10	.400	.385	-3.75				
1/20/10	.400	.392	-2.00				
2/3/10	.400	.398	-0.50				
2/24/10	.400	.399	-0.25				
3/3/10	.400	.397	-0.75				
3/17/10	.400	.398	-0.50	-1.29	1.35	1.36	-3.94

Combined Precision Check Statistical Results- Belvidere HS			
d _j	S _j	95% Probability Limits	
		Upper	Lower
-0.56	2.26	3.87	-4.99

Table 2-4: **SO2 Single Analyzer Precision Check Results for Demeter Farm**

Data Period: January-March 2010

Date	Input ppm	Response ppm	Percent Difference	d _j	S _j	95% Probability Limits	
						Upper	Lower
1/13/10	.100	.100	0.00				
1/27/10	.100	.102	2.00				
2/9/10	.100	.100	0.00				
2/24/10	.100	.102	2.00				
3/10/10	.100	.103	3.00				
3/17/10	.100	.104	4.00				
3/24/10	.100	.102	2.00	1.86	1.46	4.72	-1.00

Date	Input ppm	Response Ppm	Percent Difference	d _j	S _j	95% Probability Limits	
						Upper	Lower
1/13/10	.400	.396	-1.00				
1/27/10	.400	.399	-0.25				
2/9/10	.400	.396	-1.00				
2/24/10	.400	.400	0.00				
3/10/10	.400	.402	0.50				
3/17/10	.400	.400	0.00				
3/24/10	.400	.402	0.50	-0.18	0.62	1.04	-1.40

Combined Precision Check Statistical Results- Demeter Farm			
d _j	S _j	95% Probability Limits	
		Upper	Lower
0.84	1.51	3.80	-2.12

2.3 Accuracy

Independent quality assurance audits are performed once per quarter on the air quality measurement systems. These audits are conducted by qualified personnel not associated with the routine operation and calibration of the monitoring systems, under the supervision of Enviroplan Consulting's Quality Assurance Department using certified, independent calibration standards and equipment. Table 2-5 summarizes the air quality audit results obtained by Enviroplan Consulting during the quarter.

For continuous gas analyzers, the audit consists of challenging each monitor with gas of five known concentrations (including zero), which fall within the instrument's measurement range (0-2.0 ppm). The five known audit gas test input concentrations are within the ranges specified in 40 CFR Part 58, Appendix B. As Table 2-5 indicates, the response of the SO₂ gas analyzer to the all upscale (i.e., non-zero) audit test gas concentrations by were well within the VDEQ and U.S. EPA quality assurance goal of ±15 percent.

The equation used to calculate measurement accuracy is as follows:

$$d_i = \left[\frac{Y_i - X_i}{X_i} \right] \times 100$$

where:

d_i = the difference, in percent, between the known (audit) flow rate and the corresponding sampler-indicated flow rate.

X_i = the known (audit) flow rate.

Y_i = the corresponding sampler-indicated flow rate.

Table 2-5: SO₂ Accuracy Audit Results

Site	Date	Audit Conc. ppm	Indicated Conc.*(DAS) ppm	Percent Difference
Belvidere High School	3/31/10	1.502	1.530	1.9
SO ₂		0.800	0.792	-1.0
		0.400	0.388	-3.0
		.0100	0.099	-1.0
		0.00	0.000	-
Demeter Farm	3/31/10	1.502	1.551	4.8
SO ₂		0.800	0.804	0.5
		0.400	0.393	-1.8
		.0100	0.103	3.0
		0.00	0.002	-

Notes to Table 2-5:

*DAS - Data Acquisition System

2.4 Meteorological Data

This meteorological data summary includes the data collected at the Belvidere High School and Demeter Farm sites from January 1, 2010 through March 31, 2010. Tables 2-6 through 2-10 present the maximum and average values for each meteorological parameter.

Table 2-6: **Horizontal Wind Speed Data Summary**

	Belvidere High School				Demeter Farm			
Month	Average mph	Maximum mph	Date	Hour	Average mph	Maximum mph	Date	Hour
January	4.8	18.2	1/25	9	12.9	32.7	1/3	11
February	4.7	12.8	2/19	11	12.5	26.0	2/11	9
March	4.4	11.7	3/24	8	11.0	27.0	3/23	21

Table 2-7: **Horizontal Wind Direction Data Summary**

	Belvidere High School	Demeter Farm
Month	Average Degrees	Average Degrees
January	304	301
February	291	308
March	22	344

Table 2-8: Ambient Temperature Data Summary

Demeter Farm				
Month	Average °C	Maximum °C	Date	Hour
January	-2.9	15.0	1/25	12
February	-2.2	5.7	2/10	16
March	6.7	20.1	3/21	15

Table 2-9: **Solar Radiation Data Summary**

Demeter Farm				
Month	Average W/M²	Maximum W/M²	Date	Hour
January	83	577	1/13	12
February	106	681	2/21	12
March	145	843	3/26	12

2.5 Meteorological Audits

Meteorological audits are performed at (minimum) semi-annual intervals subsequent to initial startup calibration of the meteorological monitoring system.

There were no audits of the meteorological system performed this quarter.

Table 2-10: Quarterly Data Recovery Rates

Site	Parameter	Month	Monthly Data Recovery Rate (%)	Quarterly Data Recovery Rate (%)
Belvidere High School	SO2	January	99.3	99.4
		February	99.7	
		March	99.2	
	Horizontal Wind Speed	January	99.5	99.6
		February	99.7	
		March	99.6	
	Horizontal Wind Direction	January	99.5	99.6
		February	99.7	
		March	99.6	
	Standard Deviation	January	99.5	99.6
		February	99.7	
		March	99.6	
Demeter Farm	SO2	January	95.2	96.9
		February	99.6	
		March	96.4	
	Horizontal Wind Speed	January	99.3	99.6
		February	99.7	
		March	99.7	
	Horizontal Wind Direction	January	99.3	99.6
		February	99.7	
		March	99.7	
	Standard Deviation	January	99.3	99.6
		February	99.7	
		March	99.7	
	Temperature	January	99.3	99.6
		February	99.7	
		March	99.7	
	Solar Radiation	January	99.3	99.6
		February	99.7	
		March	99.7	

General Notes:

Data collection efficiencies are based on the number of valid data values reported from a given monitor divided by the total number of possible data values in the reporting period. For continuously-measured parameters, the total number of possible data values is the number of hours in the reporting period; for episodic monitors, the total number of possible data values is the number of scheduled sample events in the reporting period. The resulting ratio is expressed as a percentage.

When monitoring operations begin other than on the first day and hour of the reporting period, or in instances where agency approval for suspension of monitoring for a portion of the reporting period has occurred, calculation of data collection efficiencies for the reporting period is as described above except that the total number of possible data values is pro-rated in accordance with the actual active monitoring interval.

n/a – not applicable

Table 2-11: Missing Data Report

The following table describes periods of invalid data due to instrument malfunction, power outages and weather related data loss. Periods of routine instrument testing are not included in explanations of missing data.

January			
Site	Date (Hours)	Parameter	Explanation
Demeter Farm	1/ 30 (0-13, 18-23), 1/31 (0-10)	SO2	Shelter temperature out of analyzer operating range

February			
Site	Date (Hours)	Parameter	Explanation
All Parameters Satisfactory			

March			
Site	Date (Hours)	Parameter	Explanation
Demeter Farm	3/27 (0-10), 3/28 (0-9)	SO2	Shelter temperature out of analyzer operating range
Belvidere HS	3/2 (10)	All parameters	Power outage

Appendix A: Quality Assurance Forms

SL 1 FUR DOWNSIDE (50%) ALDIT FORM

Network PCA
 Site: Borden H.S.
 Date: 3/21/10
 Time On-Line: 09:09 EST
 Time On-Line: 11:06 EST
 Swell Temp: 23.9°C

Site Equipment
 Analyzer (Mfg./Model No.): TPL 430 S/N: 430-0120-388 Cal Date: 3/2/10
 Analyzer Calibrator Settings: Span Setting: 0.920 Zero Setting: 0.0335
 Calibrator Mfg./Model No.: CSI 1700 S/N: 170282 Cal Date: 5/20/09
 Gas Cylinder Vendor and Size: Gas Media: AJ 22364 Tank Pressure: 2,000 PSIG
 Gas Cylinder Cert. Date: 11/23/09 Certified SO₂ Conc. (ppm): 5.0

Audit System
 Calibrator Mfg./Model No.: GS 1700 S/N: 17078 Cal Date: 5/20/09
 Zero Air Supply: Media No.: GS 203 S/N: 46-2224 17267-28
 Gas Calibrator Vendor and Size: Sulfur Media: AJ 22364 Tank Pressure: 1,700 PSIG
 Gas Calibrator Cert. Date: 1/14/09 Certified SO₂ Conc. (ppm): 5.0

Calibrator Setting	Cell Current	Calibrator Dilution Flow	Audit Conc.	System Response			Results	
				Chart Recorder	Analyzer Volts	DAS (ppm)		
45.0	48.45	1.50	1,512.58	1.50%	76.1%	7.647	1.530	1.9%
40.0	48.47	2.90	5,059.53	0.80%	39.9%	3.949	4.792	-1.0%
15.3	41.15	5.00	5,255.14	0.40%	19.7%	1.948	0.388	-3.0%
10.2	10.24	5.00	5,255.14	0.10%	5.1%	0.500	0.099	-4.0%
OFF	OFF	5.00	5,255.14	0.00%	0.1%	0.000	0.000	-

Intercept = 0.00865
 Correlation Coefficient R = 0.999235

Comments:

Analyst: [Signature] CA R2426 [Signature]

AIR QUALITY SYSTEMS AUDIT CHECKLIST (Page 1 of 2)

Network: PCFA		Audit Date: <i>3/31/10</i>		
Site: Belvedere HS		Auditor: <i>D. Cummings</i>		
Parameter(s) Monitored	Monitor Mfg. & Model	Monitor Serial No.	Range (ppm)	Last Multipoint
SO2	TEI 43-C	730-02120-830	0.000-2.000	<i>3/3/10</i>
GENERAL SITE CONDITIONS			YES	NO
Is the station interior neat and orderly?			✓	
Is the condition of trailer exterior acceptable?			✓	
Is the site temperature maintained between 20° and 30° C?			✓	
Are the site grounds well maintained?			✓	
OPERATIONS (CONTINUOUS ANALYZERS)			YES	NO
Are all analyzers operational?			✓	
Are all analyzer and calibrator fans operational and clean?			✓	
Are all flow rates for analyzers normal?			✓	
Are automatic zero / span checks operational and chart traces stable?			✓	
Current calibration stickers on all analyzers?			<i>Note 1</i>	
Are analyzer particulate filters changed bi-weekly?			✓	
Is the sampling probe intact?			✓	
Are all unused ports securely plugged?			✓	
Is sampling cane and manifold clean?			✓	
Is the manifold blower motor working?			✓	
Are all sample lines clean and moisture free?			✓	
Are the chart recorder traces clear and readable?			✓	
Are all chart recorder times correct (if applicable)?			✓	
Is D.A.S. operational and indicating proper time and date?			✓	
Are site visits performed on a minimum weekly basis?			✓	
Are zero/span/zero/air checks performed bi-weekly?			✓	
Are multi-point calibrations performed quarterly and on time?			✓	

AIR QUALITY SYSTEMS AUDIT CHECKLIST (Page 2 of 2)

Network: PCFA	Audit Date: <u>2/21/10</u>	
Site: Belvidere HHS	Auditor: <u>D. Cummings</u>	
DOCUMENTATION AND FORMS	YES	NO
Is the station logbook present?	✓	
Are the station logs up-to-date?	✓	
Are the station logs certified and legible?	✓	
Are the calibration logs present?	✓	
Are calibration certificates for gas analyzers and calibrators posted?	Note 2	
Are the strip charts annotated each visit with time and date?	✓	
OVERALL COMMENTS	YES	NO
Overall, is the station well maintained?	✓	
Overall, is the data quality good?	✓	
Are Quality Assurance/Quality Control maintained?	✓	
Is the site and equipment in good working order?	✓	
Overall, is the site technician knowledgeable and following Standard Operating Procedures?	✓	

Comments:

- 1.) Calibration status of analyzer is available for review via on-site logbook entries and on-site QC Check Forms
- 2.) Certificates of calibration are and traceability for all calibration stds. and equipment are archived and available for review at Enviroplan Consulting Data Mgmt Center in Fairfield, NJ.

Site operator is doing an excellent job.

Audit by: [Signature]

Site Operator: Kevin Ruggiero

QA Review: [Signature]

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SLURRY INDEXER (SO₂) AUDIT FORM

Network PCFN	200 EST	2PC Demand Fee	Audit Date	3/21/10
Gas Oil Line	200 EST	Turn On Time	Station Temperature	22.4°C
Site Equipment	Analyzer Mfg Model No. TPL-100	SN: 40049-21-10	Cal Date	3/10/10
	Analyzer Calibration Settings	Flow Setting	74 Setting	0.0301
	Calibrator Mfg Model No. CSI 170B	SN: 4073805	Cal Date	
	Gas Cylinder Vendor and SN	Serial Ver No. 6322389	Work Pressure	2,000 PSI
Audit System	Gas Cylinder Ser. No. 112658		Gas Flow Rate, Date, User	2.0
	Analyzer Mfg Model No. CSI 170B	SN: 1324	Cal Date	3/28/10
	Gas Air Range	Model No. CSI 170B	SN: 40049 1326705	
	Gas Cylinder Vendor and SN	Serial Ver No. 6322389	Work Pressure	1,700 PSI
Gas Cylinder Ser. No. 114023		Gas Flow Rate, Date, User	2.0	

Calibration Setting	Flow Rate	Calibration Setting		Actual Flow	System Response			Results
		Flow Rate	SO ₂ ppm		Chart Recorder (%)	Analyzer (Volts)	EMS (ppm)	
40.0	46.4	1.50	1.91230	1.932	78.0%	7.756	1.551	4.8%
13.2	76.13	2.00	3.28959	0.630	40.5%	4.027	0.804	0.5%
40.0	41.04	1.00	1.75577	0.420	20.0%	1.958	0.393	-1.8%
13.2	10.24	3.00	5.17614	0.120	5.7%	0.508	0.103	3.0%
0.0	0.0	0.00	0.00000	0.000	0.4%	0.008	0.002	-
Sum = 1.030565				0.00673	Overall Gain = -0.99923			

Comments:

QA Review: 

QA Review: 

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AIR QUALITY SYSTEMS AUDIT CHECKLIST (Page 1 of 2)

Network: PCFA		Audit Date: <i>3/31/10</i>		
Site: Deneleer Dam		Auditor: <i>D. Cummings</i>		
Parameter(s) Monitored	Monitor Mfr. & Model	Monitor Serial No.	Range (ppm)	Last Multipoint
SO2	TEI 43-C	43C-52124-033	0-500.000	<i>3/10/10</i>
GENERAL SITE CONDITIONS			YES	NO
Is the station interior neat and orderly?			✓	
Is the condition of trailer exterior acceptable?			✓	
Is the site temperature maintained between 20° and 30° C?			✓	
Are the site grounds well maintained?			✓	
OPERATIONS (CONTINGUOUS ANALYZERS)			YES	NO
Are all analyzers operational?			✓	
Are all analyzer and calibrator fans operational and clean?			✓	
Are all flow rates for analyzers normal?			✓	
Are automatic zero / span checks done frequently and when a zero spike?			<i>Note 1</i>	
Current calibration stickers on all analyzers?			<i>Note 2</i>	
Are analyzer particulate filters changed bi-weekly?			✓	
Is the sampling cone intact?			✓	
Are all unused ports securely plugged?			✓	
Is sampling cone and manifold clean?			✓	
Is the manifold blower functioning?			✓	
Are all sample lines clean and moisture free?			✓	
Are the chart recorder traces clean and readable?			✓	
Are all chart recorder lines correct (if applicable)?			✓	
Is D.A.S. operational and indicating proper time and date?			✓	
Are site visits performed on a minimum weekly basis?			✓	
Are permit-required site checks performed bi-weekly?			✓	
Are multi-point calibrations performed quarterly and on time?			✓	

AIR QUALITY SYSTEMS MAINT. CHECKLIST (Page 2 of 2)

Network: PG&A	Visit Date: 3/21/10	
Site: Belvidere HS	Inspector: D. Cummings	
DOCUMENTATION AND FORMS	YES	NO
Is the station logbook present?	✓	
Are the station logs up-to-date?	✓	
Are the station logs detailed and legible?	✓	
Are the calibration forms present?	✓	
Are calibration certificates for gas cylinders and calibrators posted?	Note 3	
Are the strip charts annotated each visit with time and date?	✓	
OVERALL COMMENTS	YES	NO
Overall - Is the station well maintained?	✓	
Overall - Is the data quality good?	✓	
Are Quality Assurance/Quality Control plans used?	✓	
Are the site and equipment in good working order?	✓	
Overall - Is the site technician knowledgeable and following Standard Operating Procedures?	✓	

Comments:

- 1) Permeation calibrator (used exclusively for daily automatic zero/span checks) malfunctioned on 3/10/10. No automatic cal. checks performed since the malfunction occurred. Site operator has been performing manual Level 1 Z/S checks since automatic calibrator malfunction occurred (in accordance with O&APP reqmts).
- 2) SO₂ analyzer lacks calibration sticker, but calibration status is readily ascertainable from on-site logbook entries and on-site QC Check Forms.
- 3) Certificates of calibration/traceability for SO₂ calibration std & equipment are archived and available for review at the Enviroplan Consulting Data Mgmt. Ctr. at Fairfield, NJ.

And for: D. Cummings

Site Operator: Kevin Longoria

QA Review: DKC

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