# APPENDIX CAM

## Compliance Assurance Monitoring Requirements for Carbon Monoxide

# Compliance Assurance Monitoring Requirements

Pursuant to Rule 62-213.440(1)(b)1.a., F.A.C., the CAM plans that are included in this appendix contain the monitoring requirements necessary to satisfy 40 CFR 64. Conditions 1. – 17. are generic conditions applicable to all emissions units that are subject to the CAM requirements. Specific requirements related to each emissions unit are contained in the attached tables, as submitted by the applicant and approved by the Department.

## 40 CFR 64.6 Approval of Monitoring.

**1.** The attached CAM plan(s), as submitted by the applicant, is/are approved for the purposes of satisfying the requirements of 40 CFR 64.3.
[40 CFR 64.6(a)]

**2.** The attached CAM plan(s) include the following information:
(i) The indicator(s) to be monitored (such as temperature, pressure drop, emissions, or similar parameter);
(ii) The means or device to be used to measure the indicator(s) (such as temperature measurement device, visual observation, or CEMS); and
(iii) The performance requirements established to satisfy 40 CFR 64.3(b) or (d), as applicable.
[40 CFR 64.6(c)(1)]

**3.** The attached CAM plan(s) describe the means by which the owner or operator will define an exceedance of the permitted limits or an excursion from the stated indicator ranges and averaging periods for purposes of responding to (see **CAM Conditions 5. - 14.)** and reporting exceedances or excursions (see **CAM Conditions 15. – 16.**).
[40 CFR 64.6(c)(2)]

**4.** The permittee is required to conduct the monitoring specified in the attached CAM plan(s) and shall fulfill the obligations specified in the conditions below (see **CAM Conditions 5. - 16.**).
[40 CFR 64.6(c)(3)]

## 40 CFR 64.7 Operation of Approved Monitoring.

**5.** Commencement of operation. The owner or operator shall conduct the monitoring required under this appendix upon the effective date of this Title V permit.
[40 CFR 64.7(a)]

**6.** Proper maintenance. At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
[40 CFR 64.7(b)]

**7.** Continued operation. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in

continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

[40 CFR 64.7(c)]

**8.** Response to excursions or exceedances.

a. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions, if allowed by this permit). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

b. Determination of whether the owner or operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

[40 CFR 64.7(d)(1) & (2)]

**9.** Documentation of need for improved monitoring. If the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

[40 CFR 64.7(e)]

**40 CFR 64.8 Quality Improvement Plan (QIP) Requirements.**

**10.** Based on the results of a determination made under **CAM Condition 8.b.,** above, the permitting authority may require the owner or operator to develop and implement a QIP. Consistent with **CAM Condition 4.**, an accumulation of exceedances or excursions exceeding 5 percent duration of a pollutant-specific emissions unit's operating time for a reporting period, may require the implementation of a QIP. The threshold may be set at a higher or lower percent or may rely on

other criteria for purposes of indicating whether a pollutant-specific emissions unit is being maintained and operated in a manner consistent with good air pollution control practices.
[40 CFR 64.8(a)]

**11.** Elements of a QIP:
a. The owner or operator shall maintain a written QIP, if required, and have it available for inspection.
b. The plan initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the owner or operator shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate:
(i) Improved preventive maintenance practices.
(ii) Process operation changes.
(iii) Appropriate improvements to control methods.
(iv) Other steps appropriate to correct control performance.
(v) More frequent or improved monitoring (only in conjunction with one or more steps under **CAM Condition 11.b(i)** through **(iv)**, above).
[40 CFR 64.8(b)]

**12.** If a QIP is required, the owner or operator shall develop and implement a QIP as expeditiously as practicable and shall notify the permitting authority if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.
[40 CFR 64.8(c)]

**13.** Following implementation of a QIP, upon any subsequent determination pursuant to **CAM Condition 8.b.**, the permitting authority may require that an owner or operator make reasonable changes to the QIP if the QIP is found to have:
a. Failed to address the cause of the control device performance problems; or
b. Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
[40 CFR 64.8(d)]

**14.** Implementation of a QIP shall not excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.
[40 CFR 64.8(e)]

**40 CFR 64.9 Reporting And Recordkeeping Requirements.**

**15.** General reporting requirements.
a. Commencing from the effective date of this permit, the owner or operator shall submit monitoring reports semi-annually to the permitting authority in accordance with Rule 62-213.440(1)(b)3.a., F.A.C.
b. A report for monitoring under this part shall include, at a minimum, the information required under Rule 62-213.440(1)(b)3.a., F.A.C., and the following information, as applicable:

(i) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
(ii) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and
(iii) A description of the actions taken to implement a QIP during the reporting period as specified in **CAM Conditions 10.** through **14.** Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

[40 CFR 64.9(a)]

**16.** General recordkeeping requirements.

a. The owner or operator shall comply with the recordkeeping requirements specified in Rule 62-213.440(1)(b)2., F.A.C. The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to **CAM Conditions 10.** through **14.** and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).

b. Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.

[40 CFR 64.9(b)]

**40 CFR 64.10 Savings Provisions.**

**17.** It should be noted that nothing in this appendix shall:

a. Excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act. The requirements of this appendix shall not be used to justify the approval of monitoring less stringent than the monitoring which is required under separate legal authority and are not intended to establish minimum requirements for the purpose of determining the monitoring to be imposed under separate authority under the Act, including monitoring in permits issued pursuant to title I of the Act. The purpose of this part is to require, as part of the issuance of a permit under Title V of the Act, improved or new monitoring at those emissions units where monitoring requirements do not exist or are inadequate to meet the requirements of this part.

b. Restrict or abrogate the authority of the Administrator or the permitting authority to impose additional or more stringent monitoring, recordkeeping, testing, or reporting requirements on any owner or operator of a source under any provision of the Act, including but not limited to sections 114(a)(1) and 504(b), or state law, as applicable.

c. Restrict or abrogate the authority of the Administrator or permitting authority to take any enforcement action under the Act for any violation of an applicable requirement or of any person to take action under section 304 of the Act.

[40 CFR 64.10]

# Compliance Assurance Monitoring Requirements for Carbon Monoxide

## EnviroFocus Technologies, LLC

## I. INTRODUCTION

On October 10, 2000, Gulf Coast Recycling (GRC) was issued a final Title V permit (Permit No. 0570057-006-AV) for its Secondary Lead Smelting facility located at 1901 North 66th Street Tampa, Florida. Condition A.39 of the permit required GCR to submit a Compliance Assurance Monitoring (CAM) plan for its Blast Furnace in accordance with 40 CFR 64 and 40 CFR 70.6. In accordance with the Statement of Basis issued in conjunction with the aforementioned permit, this plan addresses carbon monoxide (CO). A transfer of ownership of the facility was processed effective May 18, 2006 through the issuance of Permit No. 0570057-017-AV, so all references to GCR after that date have been replaced with the new owner: EnviroFocus Technologies, LLC (EFT).

CO emissions from the blast furnace are controlled by an afterburner system. This afterburner system also controls VOC's (regulated as THC's) as required by the secondary lead MACT regulations; therefore, the monitoring of afterburner outlet temperature (option allowed for under the MACT requirements) has been selected as the monitoring method to assure ongoing compliance.

With the issuance of Permit No. 0570057-021-AC, there is now an add-on control (sodium bicarbonate injection system) for the reduction of $SO_2$; therefore, the CAM requirements as established by EPA are applicable. The CAM plan addressing $SO_2$ is attached to the Title V permit as a separate document. $SO_2$ emission rates are monitored by a continuous emissions monitor system (CEMS) that was installed as directed by the Title V permit.

Other criteria pollutants emitted by EFT either fail to meet the criteria for a CAM plan, or they are specifically exempt under 40 CFR 64.2(b). $NO_x$ does not exceed the applicability threshold; VOC (or THC) and lead are exempt due to the secondary lead smelter MACT requirement; and PM is a surrogate to lead for which the bag leak detector and standard operating procedure (SOP) requirements are sufficient to meet the requirements of this rule.

## II. AFTERBURNER FOR CO CONTROL

A. Background

1) Emission Unit

| | |
|---|---|
| Description: | Secondary Lead Smelter Blast Furnace |
| Identification: | E.U. ID No. 001 Blast Furnace |
| Stack Designation: | Afterburner/Baghouse Stack |
| Facility: | EnviroFocus Technologies, LLC, Tampa, Florida |

2) Applicable Regulation, Emission Limit and Monitoring Requirements

| | |
|---|---|
| Permit No: | Title V Permit No. 0570057-025-AV |
| Regulated Pollutant: | Carbon Monoxide (CO) |
| Emission Limit: | 208 lbs/hr CO from blast furnace |
| Monitoring Requirement: | Afterburner temperature |

3) Control Technology: Natural gas fired afterburner

B. Monitoring Approach

The key elements of the monitoring approach include the elements to be monitored, the indicated ranges, and the performance criteria. These are presented in Table 1.

C. Data Availability

The anticipated minimum data availability for each semi-annual reporting period, defined as the number of hours for which monitoring data will be available divided by the number of hours which the process operates (times 100), will be:

Afterburner Outlet Temperature: 90%

The data availability determination will not include periods of control device start up and shutdown. For an hour of data to be considered valid, a minimum of 45 minutes of data must be available.

D. CO Monitoring Approach Justification

1. Background

This is a secondary lead smelter, which operates an afterburner to control both CO and THC (VOC) emissions from the blast furnace.

2. Rationale for Selection of Performance Indicators

The afterburner outlet temperature has been selected because this temperature is indicative of the afterburner's ability to combust and reduce both CO and THC emissions. Additionally, per 40 CFR 63, Subpart X, this method is an acceptable approach for reducing THC's; therefore, the same should apply for CO.

Table 1 - CO Monitoring Approach

| | Indicator 1 | Indicator 2 |
|---|---|---|
| I. Indicator<br><br>Approach | Afterburner Outlet Temperature<br><br>Thermocouple | Daily Visual Inspections |
| II. Indicator Range | The 3-hour average afterburner temperature shall not to fall more than 50ºF below the 3-hour average temperature recorded during the most recent CO compliance test, reestablished each year after annual stack test. | Failure to perform or document |
| III. Performance Criteria | | |
| A. Data Representativeness | The thermocouple sensor is located in the afterburner chamber just prior to the afterburner outlet. Manufacturer represents the accuracy to be within 2.5°F or 0.1 % of range. The range is 0 to 2500°F. The recorded sensitivity is 0.1°F, well below accuracy. | N.A. |
| B. Verification of Operational Status | N.A. | N.A. |
| C. QA/QC | Accuracy of the thermocouple will be verified by a second redundant thermocouple inserted in the duct at the same location at least once each day. (The two readings must agree within 15°F)[1] | N.A. |
| D. Frequency<br><br>Collection Procedure<br><br><br><br><br>Averaging Period | Continuous<br><br>Chart recorder records data continuously and data logger records instantaneous readings every 7 to 13 minutes along with 3-hour averages each 15 minutes.<br><br>3-hour average. | Annual visual inspection of afterburner, daily recording of data. [2] |

Note: CO capture efficiency is not of significance for this operation since CO is only generated within the furnace, which is operated at negative pressure. CO could potentially escape during the charging of feed material into the blast furnace; however, the secondary lead smelter MACT standards (40 CFR 63, Subpart X) requires the testing of the charge hood for THC which would suffice for a surrogate for CO. Absence of any significant concentration of THC would indicate likewise insignificant concentrations of CO.

[1] If thermocouple temperature readings differ by more than 15°F, corrective action will be taken. Several spare thermocouples are maintained on site for immediate replacement as they are replaced frequently.

[2] A visual inspection will be performed at least once each shift to assure thermocouple system is collecting and recording.

Stack testing has been performed to measure CO emission rates while operating furnace at maximum feed rates (within 10%) and simultaneously measuring afterburner outlet temperature.

The work practice, comprised of annual inspections and tuning of the afterburner burner system, was selected based on manufacturer's recommendations and because such inspection verifies the equipments integrity and efficiency. Additionally, as required by the smelter MACT standards, daily inspections of the afterburner and collected data will be made to assure ongoing compliance.

3. Rationale for selection of Indicator Ranges

The selected indicator range for the afterburner outlet temperature of "not to fall less than 50ºF below the average temperature recorded during the most recent compliance test" is based on EFT's Title V permit conditions and the MACT standards for VOC. The temperature thresholds will change each year with required stack testing. If the temperature falls more than 50ºF below the 3-hour average from the stack test for up to one hour, the furnace operation shall accept no lead bearing material until the temperature is brought back into limits. All such excursions will be reported in accordance with the requirements of the Title V permit.

Review of the historical monitoring data indicates that the temperature can be maintained on a routine basis with possibly some excursions. This data indicated the normal loading on the afterburner would result in short periods whereby the temperature dips below the minimum temperature; however, this should not normally result in a three-hour average violation unless there is some abnormality or malfunction. The three-hour average will drop when the probe is replaced or the afterburner and/or associated ductwork are cleaned.

E. Quality Improvement Plan (QIP)

Should problems arise whereby the EPC determines that EFT has failed to use acceptable procedures in responding to an excursion, EFT will develop and implement a quality improvement plan (QIP) within 60 days of being notified of any concerns. The QIP will address any problems noted by EPC as well as any potential concerns that may have been noted by EFT personnel.