APPENDIX CAM - Operating Procedure 1 ONLY

Compliance Assurance Monitoring Requirements

Pursuant to Rule 62-213.440(1)(b)1.a., F.A.C., the CAM plan included in this appendix to the Title V Permit Application contains the monitoring requirements necessary to satisfy 40 CFR 64. Conditions 1. – 17. are generic conditions; specific requirements related to this emissions unit are contained in the attached tables, as submitted by Carlisle Construction Materials, Inc., dba Insulfoam and approved by the Department.

40 CFR 64.6 Approval of Monitoring:

1. The attached CAM plan, as submitted by Carlisle Construction Materials, Inc., dba Insulfoam, is approved for the purposes of satisfying the requirements of 40 CFR 64.3.
[40 CFR 64.6(a)]

2. The attached CAM plan includes the following information:
(a) The indicator(s) to be monitored (such as temperature, pressure drop, emissions, or similar parameter);
(b) The means or device to be used to measure the indicator(s) (such as temperature measurement device, visual observation, or CEMS); and
(c) 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 describes 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. - 9.) and reporting exceedances or excursions (see CAM Conditions 10. – 14.).
[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. - 17.).
[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:
(1) Improved preventive maintenance practices.
(2) Process operation changes.
(3) Appropriate improvements to control methods.
(4) Other steps appropriate to correct control performance.
(5) More frequent or improved monitoring (only in conjunction with one or more steps under CAM Condition 11.b(1) through (4), 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. **In addition to deviations from any other permit requirement, the semi-annual reports shall also include all instances of deviations from the CAM requirements.**

(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:

(1) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

(2) 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

(3) 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]

Carlisle Construction Materials, Inc., dba Insulfoam

Emissions Unit 001

Block Molded Expanded Polystyrene Products Manufacturing Facility
VOC Emissions Controlled By a
Regenerative Thermal Oxidizer

Monitoring Approach

Table 1

Regenerative Thermal Oxidizer

Unit	Indicator	Monitoring Frequency	Inspection	Limit	Indication of System Malfunction
RTO	RTO Combustion Chamber Temperature	Continuous	Approach: Temperature is continuously monitored with a Type-K Thermocouple. Thermocouple will be verified as operational during startup of the RTO. Representativeness: The thermocouple monitors temperature in the combustion chamber with accuracy in the operating range of +/- 0.75% of the set point temperature. QA/QC Procedures: Thermocouple reading will be annually verified to read within +/- 30 F of a similar thermocouple, or replaced annually. Data Collection Procedure: Recorded continuously on a chart recorder. (1) Averaging Period: None.	Set Point Temperature ≥ 1,560° F	Audio and visual alarms sound if thermocouple fails or reads abnormally. Alarm is logged on the RTO controller.
	Main Bypass Damper Valve Positions	Daily	Approach: RTO inlet motor actuated valve positions will be monitored to ensure that system inlet valve is fully open and system bypass valve is fully closed during normal operation. Monitoring will be verified as operational during startup of the RTO. Representativeness: Ensures that collection system is properly aligned to RTO. QA/QC Procedures: N/A Data Collection Procedure: Valve position will be logged daily. Averaging Period: None.	Inlet valve Fully Open Bypass Valve Fully Closed (Except during start up and shut down.)	RTO Inlet Valve Partially Closed or Bypass Valve Partially Open During Normal Operation.

Unit	Indicator	Monitoring Frequency	Inspection	Limit	Indication of System Malfunction
	RTO System Integrity	Daily	Approach: RTO will be inspected daily for general wear, corrosion, and damage, and for operational integrity in accordance with manufacturer's inspection and maintenance guidelines. Representativeness: N/A QA/QC Procedure: N/A Data Collection Procedure: Inspections will be logged daily by maintenance personnel.	Limits have been set forth by the manufacturer to ensure system effectiveness and functionality.	N/A
	RTO Inlet Duct System Integrity	Weekly	Approach: All ductwork, fittings and valves will be visually inspected for leakage, integrity and general functionality. Representativeness: N/A QA/QC Procedure: N/A Data Collection Procedure: Inspections will be logged weekly by maintenance personnel.	No visible leaks or seal breakage shall be allowed in order to maintain capture of emissions.	Leaks, Holes, Broken Seals

(1) Indicator Accuracy has been determined by the manufacturer to be 0.75%

(2) The RTO set point temperature during the February 2008 and July 2008 source tests was 1,560 F.

Table 2

Block Molds

Unit	Sections Affected	Indicator	Frequency	Inspection	Limit	Indication of System Malfunction
Collection System Components	Vacuum Exhaust Systems Virgin Mixing Station Bag (Idro Mold)	System Integrity	Weekly	Approach: All ductwork, bags, fittings and valves will be visually inspected for leakage, integrity and general functionality. Representativeness: N/A QA/QC Procedure: N/A Data Collection Procedure: Inspections will be logged weekly by maintenance personnel.	No visible leaks or seal breakage shall be allowed.	Leaks, Holes, Broken Seals
Surge/Condensate Tank	Vacuum Exhaust System	Tank Negative Pressure	Daily	Approach: Tank negative pressure will be monitored with a pressure indicator. Monitoring will be verified as operational during startup of the RTO. Representativeness: Will provide indication of total wet system capture efficiency negative pressure. Pressure indicator will be capable of accurately measuring negative pressure in the range of 0-4 inches water column. QA/QC Procedure: Pressure indicator will be calibrated annually in accordance with the manufacturer's recommendations. Data Collection Procedure: logged daily Averaging Period: none	>0.0" w.c. negative pressure	Negative pressure outside established normal operating range. Any such instance will be logged.

Table 3

Pre-Expanders

Unit	Emissions Units Affected	Indicator	Frequency	Inspection	Limit	Indication of System Malfunction
Collection System	Pre-expander canister vent duct Take-away blower duct	System Integrity	Weekly	Approach: All ductwork, bags, fittings and valves will be visually inspected for leakage, integrity and general functionality. Representativeness: N/A QA/QC Procedure: N/A Data Collection Procedure: Inspections will be logged weekly by maintenance personnel.	No visible leaks or seal breakage shall be allowed.	Leaks, Holes, Broken Seals
Collection Tank	Pre-expander canister vent duct	Tank Negative Pressure	Daily	Approach: Tank negative pressure will be monitored with a pressure indicator. Monitoring will be verified as operational during startup of the RTO. Representativeness: Will provide indication of total wet system capture efficiency negative pressure. Pressure indicator will be capable of accurately measuring negative pressure in the range of 0-4 inches water column. QA/QC Procedure: Pressure indicator will be calibrated annually in accordance with the manufacturer's recommendations. Data Collection Procedure: logged daily Averaging Period: none	>0.0" w.c. negative pressure	Negative pressure outside established normal operating range Any such instance will be logged

Table 4

Permanent Total Enclosures

Unit	Indicator	Frequency	Inspection	Limit	Indication of System Malfunction
Bead Aging Bag Farm	Bag Farm Negative Pressure	Daily	Approach: Bag farm negative pressure will be monitored with a pressure gauge (inclined manometer or equivalent Pressure Gauge). Monitoring will be verified as operational during startup of the RTO. Representativeness: Monitoring location will be established in accordance with Method 204 requirements. Pressure gauge has a range of 0 to -0.5" w.c., and an accuracy of +/- 3% of scale. QA/QC Procedure: Pressure gauge will be zeroed weekly in accordance with the manufacturer's recommendations. Data Collection Procedure: Pressure readings will be logged daily by maintenance personnel Averaging Period: none.	≥ 0.007" w.c. negative pressure	Operation below 0.007" w.c. negative pressure, or outside the established normal operating range. Any such instance will be logged.
	Bag Farm Doors Shut	Daily	Approach: Bag farm containment will be visually inspected to ensure that doors are closed except during required periods of access. Representativeness: Permanent Total Enclosure (PTE) will be established when all doors are in their normally closed position. QA/QC Procedure: N/A Data Collection Procedure: Inspections will be logged daily by maintenance personnel.	Shut at all times except during necessary access	Operation below 0.007" w.c. negative pressure, or outside the established normal operating range. Any such instance will be logged.

Justification

Rationale for Selection of Performance Indicators

RTO combustion chamber temperature is indicative of the maximum oxidation temperatures that the pentane-laden exhaust stream is exposed to. Maintenance of appropriate combustion chamber temperatures ensures efficient combustion and destruction of pentane.

RTO inlet and bypass valve positions are indicative of the RTO being fully aligned to the capture system, accepting the emissions stream for destruction.

Collection tank negative pressure will indicate the adequate collection of fumes from the various upstream processes. Since the collected emission points are all hard-ducted to this tank, with no Natural Draft Openings (NDOs) or other exposure to atmosphere, negative pressure within the collection tank will ensure that all emissions are flowing that direction, that no backpressure is allowed to build, and that total capture system flow rate is adequate to maintain capture of those emissions.

Visual inspections of duct work, including the vacuum exhaust systems, Idro virgin mixing station bag, pre-expander canister vent ducts, pre-expander take-away blower ducts, and bag room natural draft openings and access doors, will ensure that these items are in good repair and functioning properly.

Aging room differential pressure, together with proper containment design, is indicative of containment of bead aging emissions within the aging room enclosure. Monitoring of aging room differential pressure will ensure that the pressure is maintained at levels that provide permanent total enclosure, and therefore 100% capture, of bead aging emissions.

Rationale for Selection of Indicator Ranges

RTO combustion chamber temperature will be maintained greater than 1,500 °F at all times except startup and shutdown. This temperature is well above the auto ignition temperature of pentane (500 °F) and will ensure efficient destruction of pentane while minimizing CO emissions from incomplete combustion of supplemental fuel (natural gas). Additionally, this minimum temperature provides a sufficient operating margin below the set-point for RTO operation of 1,560 °F; necessary due to the non-static temperature profiles inherent to RTO operation.

RTO inlet and bypass valve positions will be maintained such that the inlet valve is fully open, and the bypass valve is fully closed, at all times that the RTO is required to be aligned to the system. This will ensure maximum collection of pentane from the process, and eliminate bypass of emissions to atmosphere.

Differential pressure across the aging room containment will be maintained at 0.007" of water column or greater negative pressure, in accordance with the requirement for permanent total enclosure listed in EPA Method 204.

Collection tank negative pressure will be maintained greater than 0" H_2O negative pressure, ensuring adequate flow rate is provided to the RTO to maintain capture of all emissions vented to the tank.