# Suwannee American Cement Company, LLC Sumterville Cement Plant

Facility ID No. 1190042 Sumter County Title V Air Operation Permit Revision

**Permit No. 1190042-028-AV** (2<sup>nd</sup> Revision of Title V Air Operation Permit No. 1190042-023-AV)



**Permitting Authority:** 

State of Florida Department of Environmental Protection Division of Air Resource Management Office of Permitting and Compliance 2600 Blair Stone Road Mail Station #5505 Tallahassee, Florida 32399-2400

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### **Compliance Authority:**

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# Title V Air Operation Permit Revision Permit No. 1190042-028-AV

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### FLORIDA DEPARTMENT OF Environmental Protection

Ron DeSantis Governor

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**PERMITTEE:** Suwannee American Cement Company, LLC 4750 E. C. R. 470, Post Office Box 445 Sumterville, Florida 33585 Permit No. 1190042-028-AV Sumterville Cement Plant Facility ID No. 1190042 Title V Air Operation Permit Revision

The purpose of this permit is to revise the Title V air operation permit for the above referenced facility. The existing Sumterville Cement Plant is in Sumter County at 4750 E County Road 470, Post Office Box 445, Sumterville, Florida. UTM coordinates are: Zone 17, 399.8 km East, and 3181.9 km North. Latitude 28° 45' 38" North and Longitude is 82° 01' 35" West.

The Title V air operation permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-213. The above named permittee is hereby authorized to operate the facility in accordance with the terms and conditions of this permit.

Executed in Tallahassee, Florida.

1190042-028-AV Effective Date: February 21, 2025 1190042-025-AV Effective Date: May 5, 2023 1190042-023-AV Effective Date: March 11, 2021 Renewal Application Due Date: July 29, 2025 Expiration Date: March 11, 2026

David Lyle Read, P.E., Environmental Administrator Office of Permitting and Compliance Division of Air Resource Management

DLR/pks

#### Subsection A. Facility Description.

The Suwannee American Cement Company, LLC Sumterville cement plant is a Portland cement manufacturing plant. The facility is a nominal 1,186,250 tons per year (TPY) clinker dry process Portland cement plant incorporating a dry process kiln with a preheater and calciner (PH/C). The facility includes a surface limestone mine. The manufacture of Portland cement primarily involves the crushing, grinding, and blending of limestone, clays, and other raw materials into a chemically proportioned mixture which is heated in a rotary kiln to extremely high temperature to produce clinker nodules. The clinkers are cooled and ground with a small quantity of additives to produce finished cement.

Major equipment associated with the main components of the plant includes the following:

- A raw materials storage building (RMS);
- A primary crusher at the quarry and belt conveyors to RMS;
- Raw material piles stored inside of the RMS. The piles include but are not limited to limestone, alumina sources (e.g., bauxite, clay, and coal ash), iron sources (e.g., mill scale, coal ash and iron ore), silica sources (e.g., sand), and additives (e.g., feldspar);
- Materials handling equipment associated with the RMS which includes: harrow and portal reclaimers, stackers, belt conveyors, conveyor from the RMS to the raw mill, and control system/analyzer;
- An in-line raw mill that simultaneously dries and grinds raw materials using the exhaust gas from the kiln, preheater/calciner (PH/C), and clinker cooler;
- Mechanical and pneumatic handling and feed systems designed to handle alternative fuels at a nominal rate of 32 tons of alternative fuel per hour;
- Kiln and calciner burners alternative fuel handling and firing systems;
- Fuel preparation equipment for grinding, shredding, screening, and sizing equipment to prepare alternative fuels;
- A preheater/calciner capable of burning coal, petroleum coke, virgin No. 2 oil, on-specification used oil, certain categories of alternative fuels, natural gas and propane (as a start-up fuel) with staged combustion and selective non-catalytic reduction (SNCR) system;
- An air heater, capable of firing No. 2 or No. 4 fuel oil, on-specification used fuel oil, and natural gas, for use when additional drying capacity is required;
- A nominal 10,000 ton homogenizing (blending) silo;
- A nominal 18 TPH coal and petroleum coke grinding system with associated mill, storage facility, conveyors, including a fabric filter baghouse;
- A dry process preheater/calciner kiln capable of producing 3,250 short tons per day of clinker;
- An indirect-firing system with a low-NO<sub>x</sub> main kiln burner capable of burning coal, petroleum coke, virgin No. 2 fuel oil, on-specification used oil, certain categories of alternative fuels, natural gas, and propane (as a start-up fuel);
- A whole tire kiln feeder system;
- A clinker cooler with reciprocating grates, cooling air fans, and hot air ducting to the kiln and PH/C;
- Clinker storage and grinding including a finish mill with air separator, clinker silos with metering device, additive storage (including but not limited to limestone and gypsum), and associated conveyors; and
- A cement transfer and storage facility including truck loadout and packhouse.

Nitrogen oxides (NOx) emissions are minimized by indirect firing in a low-NOx main kiln burner, and staged combustion with a selective non-catalytic reduction (SNCR) ammonia injection system in the preheater/calciner. Sulfur dioxide (SO<sub>2</sub>) emissions are controlled by the use of inherently low sulfur raw materials and scrubbing by

finely divided lime in the calciner. Carbon monoxide (CO) and volatile organic compound (VOC) emissions are controlled by promoting complete combustion in the kiln and calciner, and minimizing carbon and oily content of raw materials. Particulate matter (PM/PM<sub>10</sub>) from the PH/C, kiln, in-line raw mill, and clinker cooler are controlled by a single large fabric filter main baghouse. Numerous other baghouses control PM/PM<sub>10</sub> emissions from materials conveyance, transfer, grinding, and handling. Fugitive PM/PM<sub>10</sub> emissions from raw material piles, loading operations, transportation, etc. are controlled by reasonable precautions including paving, road sweeping, watering, planting grass, etc. Mercury (Hg) emissions or acid gases, such as hydrogen chloride (HCl) emissions are controlled by a dry sorbent injection (DSI) system that injects sorbent into the exhaust stream.

EU No.	Brief Description			
Regulated Emissions Units				
001	Raw Material Quarrying, Crushing, and Storage (includes raw material processing from quarry up to raw material storage, and additives handling from delivery to storage)			
002	Raw Materials Conveying, Storage, and Processing (from raw material and additive storage to preheater - includes conveyance of raw materials and raw meal to and from raw mill, and homogenizing (blending) silo)			
003	Pyroprocessing System (includes kiln, preheater/calciner, raw mill, air heater, and clinker cooler)			
004	Clinker and Additives Storage and Handling (includes clinker handling from clinker cooler to clinker silo discharge, and clinker and additive handling from storage to the finish mill)			
005	Finish Mill (Cement Grinding)			
006	Cement Handling, Storage, Packing, and Loadout (includes cement conveyance to silos, cement silos, loadout to trucks from silos, and cement bagging operations)			
007	Coal and Petroleum Coke Grinding System (includes coal/petroleum coke handling from truck and railcar unloading to the pulverized fuel bin)			
010	Alternative Fuels Processing System			
009	Kiln Emergency Generator Compression Ignition (CI) Reciprocating Internal Combustion Engine (RICE)			
011	Loadout Backup Emergency Generator Compression Ignition (CI) Reciprocating Internal Combustion Engine (RICE)			
Unregulat	ed Emissions Units and Activities			
008	Fugitive Dust From Storage Piles, Paved Roads, and Unpaved Roads			

#### Subsection B. Summary of Emissions Units.

Also included in this permit are miscellaneous insignificant emissions units and/or activities (see Appendix I, List of Insignificant Emissions Units and/or Activities).

#### Subsection C. Applicable Regulations.

Based on the Title V air operation permit renewal application received September 15, 2020, this facility is a major source of hazardous air pollutants (HAP). The existing facility is a prevention of significant deterioration (PSD) major source of air pollutants in accordance with Rule 62-212.400, F.A.C.

The limestone mine quarry is subject to 40 CFR 60, Subpart OOO - Standards of Performance for Non-metallic Mineral Processing Plants.

The cement plant portion (not including the kiln, EU 003) of the facility is subject to the maximum achievable control technology (MACT) requirements in 40 CFR 63 Subpart LLL – National Emission Standards for

Hazardous Air Pollutants (NESHAP) for the Portland Cement Manufacturing Industry (LLL). The kiln can be subject to either Rule 62-204.800(9)(f), F.A.C., which incorporates the requirements of 40 CFR 60, Subpart DDDD – Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units (referred to as DDDD from here on) when the kiln is subject to DDDD or to LLL, when the kiln is to LLL. This permit is written to allow the kiln to switch between the two regulations.

If the kiln is subject to DDDD, 40 CFR 60, Subpart F – Standards of Performance for Portland Cement Plants does not apply to the kiln. However, the cement plant (except the kiln) is always subject to Subpart F. In addition, the plant is subject to various state Rules and the Department's determination of best available control technology (BACT) for NOx, CO, SO<sub>2</sub>, VOC, and PM/PM<sub>10</sub> and the associated BACT emission limitations for each of these air pollutants. *(See Appendix BD - Final BACT Determination and Emission Standards.)* 

The coal mill is subject to 40 CFR 60, Subpart Y - Standards of Performance for Coal Preparation Plants; and exhausted emissions from the coal mill stack (S-22) are subject to DDDD, or to LLL (because the coal mill receives exhaust gas from the kiln which is subject to either of the two regulations).

The emergency engine (EU 009) is subject to 40 CFR 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and the backup emergency generator (EU 011) is subject to both 40 CFR 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

This facility includes continuous emissions monitoring systems (CEMS) for NOx, CO, total hydrocarbons (THC, both as a monitor for THC emissions (as regulated under LLL) and as a surrogate monitor for VOC emissions), mercury (Hg) and hydrogen chloride (HCl) on the common PH/C kiln, in-line raw mill, and clinker cooler fabric filter baghouse exhaust stack. A PM continuous parameter monitoring system (CPMS) is used to demonstrate compliance with the requirements of LLL or DDDD. Since the coal mill (EU 007) stack (S-22) emits exhaust gas vented from the kiln into the coal mill, this coal mill stack (S-22) is required to meet the more stringent PM emission limits of DDDD or LLL as applicable to the kiln, rather than NSPS, Subpart Y.

Federal Regulations	EU No(s).
40 CFR 60, Subpart A - General Provisions*	001 through 007, 009, 011
40 CFR 60, Subpart F - Standards of Performance for Portland Cement Plants*	002 through 006
40 CFR 60, Subpart Y - Standards of Performance for Coal Preparation Plants *	007
40 CFR 60, Subpart OOO - Standards of Performance for Non-Metallic Mineral Processing Plants	001
40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	009, 011
40 CFR 63, Subpart A - General Provisions*	002 through 007
40 CFR 63, Subpart LLL - National Emissions Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry*	002 through 007
40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	011
State Regulations	EU Nos.

A summary of applicable regulations is shown in the following table.

#### SECTION I. FACILITY INFORMATION.

Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.	All	
Rule 62-204.800(9)(f), F.A.C.*	003, 007	

\* At the time of issuance of this permit, the kiln (EU 003) and coal mill (EU 007) are subject to Rule 62-204.800(9)(f), F.A.C., which incorporates the requirements of DDDD, and not subject to LLL. If the permittee certifies that the kiln has not used any waste material for a period of six months and provides the appropriate advance notice to the Department, the permittee may revert back to compliance with LLL rather than DDDD, including performing all required initial compliance testing. If any material constituting waste were to be used, however, the kiln and coal mill would immediately be subject to the DDDD requirements. If the kiln is subject to DDDD, 40 CFR 60, Subpart F – Standards of Performance for Portland Cement Plants does not apply to the kiln. However, the cement plant (except the kiln) is always subject to Subpart F.

{*Permitting Note (for informational purposes only): The facility is subject to the federal requirements of the Greenhouse Gas Reporting Program codified at 40 CFR 98. This reporting rule is not a requirement of the State of Florida.*}

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#### The following conditions apply facility-wide to all emission units and activities:

**FW1.** <u>Appendices</u>. The permittee shall comply with all documents identified in Section IV, Appendices, listed in the Table of Contents. Each document is an enforceable part of this permit unless otherwise indicated. [Rule 62-213.440, F.A.C.]

#### **Emissions and Controls**

- **FW2.** <u>Not federally Enforceable.</u> Objectionable Odor Prohibited. No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rule 62-296.320(2) and 62-210.200(Definitions), F.A.C.]
- **FW3.** <u>General Volatile Organic Compounds (VOC) Emissions or Organic Solvents (OS) Emissions</u>. The permittee shall allow no person to store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed-necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]</u>

#### *{Permitting Note: Nothing is deemed necessary and ordered at this time.}*

- **FW4.** <u>General Visible Emissions</u>. No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b), F.A.C.]
- **FW5.** <u>Unconfined Particulate Matter</u>. No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction; alteration; demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions. Reasonable precautions to prevent emissions of unconfined particulate matter at this facility include the following:
  - a. Landscaping and planting of vegetation;
  - b. Application of water to control fugitive dust from activities such as demolition of buildings, grading roads, construction, and land clearing;
  - c. Water supply lines, hoses and sprinklers, or other sources of water shall be located near all stockpiles of raw materials, coal, and petroleum coke;
  - d. All plant operators shall be trained in basic environmental compliance and shall perform visual inspections of raw materials, coal and petroleum coke periodically and before handling. If the visual inspections indicate a lack of surface moisture, such materials shall be wetted with sprinklers. Wetting shall continue until the potential for unconfined particulate matter emissions are minimized;
  - e. Water spray shall be used to wet the materials and fuel if inherent moisture and moisture from wetting the storage piles are not sufficient to prevent unconfined particulate matter emissions;
  - f. As necessary, applications of asphalt, water, or dust suppressants to unpaved roads, yards, open stockpiles and similar activities;
  - g. Paving of access roadways, parking areas, manufacture area, and fuel storage yard;
  - h. Removal of dust from buildings, roads, and other paved areas under the control of the owner or operator of the facility to prevent particulate matter from becoming airborne;
  - i. A vacuum sweeper or equivalent (such as a water truck) shall be used to remove dust from paved roads, parking, and other work area;
  - j. Enclosure or covering of conveyor systems where practicably feasible;
  - k. All raw materials on plant property shall be stored under roof or cover. Materials, other than quarried materials, shall be stored on compacted clay or concrete, or in enclosed vessels;

- 1. Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter; and,
- m. Confining abrasive blasting where possible.

In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

[Rules 62-212.400 (Best Available Control Technology), and 62-296.320(4)(c), F.A.C.; Appendix BD - Final BACT Determination and Emission Standards; Permit No. 1190042-001-AC (PSD-FL-361), and Permit Renewal Application dated September 15, 2020]

#### **Reports and Fees**

See Appendix RR, Facility-wide Reporting Requirements, for additional details and requirements.

FW6. Electronic Annual Operating Report and Title V Annual Emissions Fees. The information required by the Annual Operating Report for Air Pollutant Emitting Facility [Including Title V Source Emissions Fee Calculation] (DEP Form No. 62-210.900(5)) shall be submitted by April 1 of each year, for the previous calendar year, to the Department of Environmental Protection's Division of Air Resource Management. Each Title V source shall submit the annual operating report using the DEP's Electronic Annual Operating Report (EAOR) software, unless the Title V source claims a technical or financial hardship by submitting DEP Form No. 62-210.900(5) to the DEP Division of Air Resource Management instead of using the reporting software. Emissions shall be computed in accordance with the provisions of subsection 62-210.370(2), F.A.C. Each Title V source must pay between January 15 and April 1 of each year an annual emissions fee in an amount determined as set forth in subsection 62-213.205(1), F.A.C. The annual fee shall only apply to those regulated pollutants, except carbon monoxide and greenhouse gases, for which an allowable numeric emission-limiting standard is specified in the source's most recent construction permit or operation permit. Upon completing the required EAOR entries, the EAOR Title V Fee Invoice can be printed by the source showing which of the reported emissions are subject to the fee and the total Title V Annual Emissions Fee that is due. The submission of the annual Title V emissions fee payment is also due (postmarked) by April 1st of each year. A copy of the system-generated EAOR Title V Annual Emissions Fee Invoice and the indicated total fee shall be submitted to: Major Air Pollution Source Annual Emissions Fee, P.O. Box 3070, Tallahassee, Florida 32315-3070. Additional information is available by accessing the Title V Annual Emissions Fee On-line Information Center at the following Internet web site: https://floridadep.gov/air/permitting-compliance/content/title-v-fees. [Rules 62-210.370(3), 62-210.900 & 62-213.205, F.A.C.; and, §403.0872(11), Florida Statutes (2013)]

{Permitting Note: Resources to help you complete your AOR are available on the electronic AOR (EAOR) website at: <u>http://www.dep.state.fl.us/air/emission/eaor</u>. If you have questions or need assistance after reviewing the information posted on the EAOR website, please contact the Department by phone at (850) 717-9000 or email at <u>eaor@dep.state.fl.us.</u>}

{Permitting Note: The Title V Annual Emissions Fee form (DEP Form No. 62-213.900(1)) has been repealed. A separate Annual Emissions Fee form is no longer required to be submitted by March 1<sup>st</sup> each year.}

**FW7.** <u>Annual Statement of Compliance</u>. The permittee shall submit an annual statement of compliance to the compliance authority at the address shown on the cover of this permit and to the US. EPA at the address shown below within 60 days after the end of each calendar year during which the Title V air operation permit was effective. The submittal may be made electronically to <u>DEP\_CD@dep.state.fl.us</u>. (See also Appendix RR, Conditions RR1 and RR7.) [Rules 62-213.440(3)(a)2. & 3. and (b), F.A.C.]

U.S. Environmental Protection Agency, Region 4 Atlanta Federal Center 61 Forsyth Street, SW Atlanta, Georgia 30303 Attn: Air Enforcement Branch

- **FW8.** <u>Prevention of Accidental Releases (Section 112(r) of CAA)</u>. If, and when, the facility becomes subject to 112(r), the permittee shall:
  - a. Submit its Risk Management Plan (RMP) to the Chemical Emergency Preparedness and Prevention Office (CEPPO) RMP Reporting Center. Any Risk Management Plans, original submittals, revisions or updates to submittals, should be sent electronically through EPA's Central Data Exchange system at the following address: <u>https://cdx.epa.gov</u>. Information on electronically submitting risk management plans using the Central Data Exchange system is available at: <u>http://www2.epa.gov/rmp</u>. The RMP Reporting Center can be contacted at: RMP Reporting Center, Post Office Box 10162, Fairfax, VA 22038, Telephone: (703) 227-7650.
  - b. Submit to the permitting authority Title V certification forms or a compliance schedule in accordance with Rule 62-213.440(2), F.A.C.

[40 CFR 68]

FW9. Semi-Annual Reports. The permittee shall monitor compliance with the terms and conditions of this permit and shall submit reports at least every six months to the compliance office. Each semi-annual report shall cover the 6-month periods of January 1 – June 30 and July 1 – December 31. The reports shall be submitted by the 60<sup>th</sup> day following the end of each calendar half (i.e., March 1<sup>st</sup> and August 29<sup>th</sup> of every year). All instances of deviations from permit requirements (including conditions in the referenced Appendices) must be clearly identified in such reports, including reference to the specific requirement and the duration of such deviation. If there are no deviations during the reporting period, the report shall so indicate. Any semi-annual reporting requirements contained in applicable federal NSPS or NESHAP requirements may be submitted as part of this report. The submittal dates specified above shall replace the submittal dates specified in the federal rules. All additional reports submitted as part of this report should be clearly identified according to the specific federal requirement. All reports shall include a certification by a responsible official, pursuant to subsection 62-213.420(4), F.A.C. (See also Conditions RR2. – RR4. of Appendix RR, Facility-wide Reporting Requirements, for additional reporting requirements related to deviations.) [Rule 62-213.440(1)(b)3.a., F.A.C.; and, 40 CFR 60.19(d), & 40 CFR 63.10(a)(5)]

{*Permitting Note: EPA has clarified that, pursuant to 40 CFR 70.6(a)(3), the word "monitoring" is used in a broad sense and means monitoring (i.e., paying attention to) the compliance of the source with all emissions limitations, standards, and work practices specified in the permit.*}

#### Other Requirements

FW10. Used Oil Notification.

- a. *Identification numbers.* Used oil burners which have not previously complied with the notification requirements of RCRA section 3010 must comply with these requirements and obtain an EPA identification number.
- b. *Mechanics of notification*. A used oil burner who has not received an EPA identification number may obtain one by notifying the Regional Administrator of their used oil activity by submitting either:
  - (1). A completed EPA Form 8700-12 (To obtain EPA Form 8700-12 call RCRA/Superfund Hotline at 1-800-424-9346 or 703-920-9810); or
  - (2). A letter requesting an EPA identification number. Call the RCRA/Superfund Hotline to determine where to send a letter requesting an EPA identification number. The letter should include the following information:
    - (i). Burner company name;
    - (ii). Owner of the burner company;
    - (iii). Mailing address for the burner;
    - (iv). Name and telephone number for the burner point of contact;
    - (v). Type of used oil activity; and
    - (vi). Location of the burner facility.

#### [40 CFR 279.62]

{*Permitting Note: The facility is not required to submit a notice or periodic report if used oil is not located on-site during the reporting period.*}

- **FW11.** <u>Used Oil Storage</u>. Used oil burners are subject to all applicable Spill Prevention, Control and Countermeasures (40 CFR part 112) in addition to the requirements of 40 CFR Subpart G. Used oil burners are also subject to the Underground Storage Tank (40 CFR part 280) standards for used oil stored in underground tanks whether or not the used oil exhibits any characteristics of hazardous waste, in addition to the requirements of 40 CFR Subpart G.
  - a. *Storage units*. Used oil burners may not store used oil in units other than tanks, containers, or units subject to regulation under parts 264 or 265 of this chapter.
  - b. Condition of units. Containers and aboveground tanks used to store oil at burner facilities must be:
    - (1) In good condition (no severe rusting, apparent structural defects or deterioration); and
    - (2) Not leaking (no visible leaks).
  - c. *Secondary containment for containers*. Containers used to store used oil at burner facilities must be equipped with a secondary containment system.
    - (1) The secondary containment system must consist of, at a minimum:
      - (i). Dikes, berms or retaining walls; and
      - (ii). A floor. The floor must cover the entire area within the dike, berm, or retaining wall.
    - (2) The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.
  - d. *Secondary containment for existing aboveground tanks*. Existing aboveground tanks used to store used oil at burner facilities must be equipped with a secondary containment system.
    - (1) The secondary containment system must consist of, at a minimum:
      - (i). Dikes, berms or retaining walls; and
    - (ii). A floor. The floor must cover the entire area within the dike, berm, or retaining wall except areas where existing portions of the tank meet the ground; or
    - (iii). An equivalent secondary containment system.
    - (2) The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.
  - e. *Secondary containment for new aboveground tanks*. New aboveground tanks used to store used oil at burner facilities must be equipped with a secondary containment system.
    - (1) The secondary containment system must consist of, at a minimum:
      - (i). Dikes, berms or retaining walls; and
      - (ii). A floor. The floor must cover the entire area within the dike, berm, or retaining wall; or
      - (iii). An equivalent secondary containment system.
    - (2) The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.
  - [40 CFR 279.64]
- **FW12.** <u>On Specification Used Oil Fuel Requirements</u>. "On-Specification" used oil fuel shall meet the following specifications:
  - a. Arsenic shall not exceed 5.0 ppm;
  - b. Cadmium shall not exceed 2.0 ppm;
  - c. Chromium shall not exceed 10.0 ppm;
  - d. Lead shall not exceed 100.0 ppm;
  - e. Total halogens shall not exceed 1000 ppm; and
  - f. Flash point shall not be less than  $100^{\circ}$  F

Used oil fired as a fuel may be generated from on-site sources or purchased from a vendor. Used oil shall not contain any PCB's per 40 CFR 761.20(e).

[Permit No. 1190042-001-AC (PSD-FL-361), 40 CFR 279.61; 40 CFR 761.20(e)]

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#### Subsection A. Emissions Unit 001, Raw Material Quarrying, Crushing, and Storage

#### The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
001	Raw Material Quarrying, Crushing, and Storage

This emissions unit consists of raw material processing from quarry up to raw material storage, and additives handling from delivery to storage. Equipment includes a primary crusher at the quarry, an alternative raw materials crusher, and two raw materials storage buildings (RMS). Belt conveyors (Belts BO-3, BO-2, and BO-1) convey the crushed limestone between the crusher and the RMS. Raw material piles created via a Tripper Belt and stored inside of the RMS include limestone, alumina sources (e.g., bauxite, clay and coal ash), iron sources (e.g., mill scale and iron ore), silica sources (e.g., sand), and additives (e.g., feldspar). Other materials handling equipment includes harrow and portal reclaimers, stackers, hoppers, belt conveyors, a conveyor from the RMS to the raw mill, and a control system/analyzer.

Raw material quarrying, crushing, and storage contains the following emissions points:

- Primary crusher and all belt conveyors (Belts BO-3, BO-2, and BO-1)
- Belt conveyor transfer points to raw material storage building [Crusher to Belt BO-3; Belt BO-3 to Belt BO-2; Belt BO-2 to Belt BO-1; Belt BO-1 to Tripper Belt; and Tripper Belt to Limestone Pile (located inside RMS)].
- All conveyors and hoppers associated with additives handling and storage.
- Alternative raw material (ARM) crusher.

{Permitting Note: This emissions unit is regulated under 40 CFR 60, Subpart A (General Provisions) and 40 CFR 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) adopted by reference in Rule 62-204.800(8)(b), F.A.C. For the purposes of Subpart OOO emission limits, the primary crusher is considered an affected facility (as defined in §§60.670 and 60.671) which commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008 (construction of components of this emission unit were commenced on or before October 18, 2007). As indicated in the Title V renewal application received on September 15, 2020, this emission unit conducts wet material mining operations and wet material processing operation (wet screening) as defined in §60.671 of Subpart OOO. As such, only the crusher operations are subject to the visible emission limits of Subpart OOO. Insuance of Permit No. 1190042-024-AC did not alter the "existing" status of the primary crusher. The ARM crusher authorized by Permit No. 1190042-027-AC is considered an affected facility under Subpart OOO that commenced construction after April 22, 2008.

<u>PSD BACT Determinations</u> - A determination of the Best Available Control Technology (BACT) was made for particulate matter (PM/PM<sub>10</sub>). To satisfy the BACT requirements for this emission unit the visible emissions limits act as surrogate standards for PM. (Appendix BD – Final BACT Determination and Emission Standards)}

#### **Essential Potential to Emit (PTE) Parameters**

- A.1. <u>Hours of Operation</u>. This emissions unit is permitted to operate continuously (i.e., 8,760 hours per year). [Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.; Permit No. 1190042-001-AC (PSD-FL-361)]
- A.2. <u>Process Rate Limitations</u>. The primary crusher may process up to 540,000 tons (dry basis) per month of limestone feed to the kiln on monthly average basis. No more than 1,482,000 tons (dry basis) of limestone feed to the kiln shall be processed in the primary crusher during any consecutive 12-month period. No more than 550,000 tons (dry basis) of limestone feed to the finish mill shall be processed in the primary crusher during any consecutive 12-month period. No more than 550,000 tons (dry basis) of limestone feed to the finish mill shall be processed in the primary crusher during any consecutive 12-month period. (See Specific Condition A.9. for recordkeeping requirements associated with these process rate limitations and related testing provisions in Appendix TR, Facility-wide Testing Requirements for operating rate limitation after testing.) [Rule 62-210200 (Definition of Potential to Emit), F.A.C.; Permit No. 1190042-024-AC]

#### Subsection A. Emissions Unit 001, Raw Material Quarrying, Crushing, and Storage

A.3. <u>ARM Crusher</u>. The ARM crusher shall not process more than 50,000 tons of material in any consecutive 12-month period. [Rule 62-210.200(PTE), F.A.C.; and Permit No. 1190042-027-AC]

#### **Emission Limitations and Standards**

- A.4. <u>Visible Emission Standards</u>. Visible emissions (VE) shall not exceed the following limits.
  - a. Fugitive emissions from the primary crusher shall not exceed 15% opacity.
  - b. Fugitive emissions from the ARM crusher shall not exceed 12% opacity.
  - c. The following equipment up to the first crusher and in the production line after the first crusher, grinding mill or storage bin are exempt from the requirements of NSPS Subpart OOO. However, visible emissions from these operations shall not exceed 20% opacity. This facility-wide opacity limit of 20% per 62-296.320(4)(b)1. F.A.C. does not require VE testing.
    - (1) Screening operations,
    - (2) bucket elevators,
    - (3) belt conveyors,
    - (4) bagging operations,
    - (5) storage bins,
    - (6) enclosed truck or railcar loading stations, and
  - (7) any other affected facility (as defined in 40 CFR 60.670 and 40 CFR 60.671).
  - [40 CFR 60.670-671; and Rule 62-296.320(4)(b)1. F.A.C.]

#### **Test Methods and Procedures**

A.5. <u>Test Methods</u>. When required, tests shall be performed in accordance with the following reference methods:

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rule 62-204.800, F.A.C.; 40 CFR 60.675; and Permit No. 1190042-001-AC (PSD-FL-361)]

A.6. <u>Visible Emissions Test Required</u>. Except as provided in subparagraph 62-297.310(8)(b)3., F.A.C. (see condition TR7.b.(3) in Appendix TR – Facility-wide Testing Requirements), compliance tests shall be performed prior to obtaining a renewed operation permit to demonstrate compliance with the visible emission limits for the crushers contained in Specific Conditions A.4.a. and A.4.b. [Rules 62-210.300(2)(a) and 62-297.310(8)(b), F.A.C.]

*{Permitting Note: Tests which are only required once during the term of a permit prior to obtaining a renewed permit should be performed roughly five years from the previous test.}* 

A.7. <u>Common Testing Requirements</u>. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit, as well as the applicable provisions of NSPS Subpart OOO 40 CFR 60.675 (for crushers only). [Rule 62-297.310, F.A.C. and Permit Nos. 1190042-001-AC (PSD-FL-361) and 1190042-027-AC (PSD-FL-361H)]

{Permitting Note: Air compliance test notifications can now be completed online in the Department's Business Portal. To access this online process, go to <u>http://www.fldepportal.com/go/home</u> and sign in (or register if you're a new user) from the link in the upper right corner of the page. On the Welcome page select the Submit option, then select Registration/Notification, and then click on Air Compliance Test Notifications. Once in the process, just carefully read the instructions on each screen (and under the Help tabs) to complete the notification.}

#### **Recordkeeping and Reporting Requirements**

#### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS. Subsection A. Emissions Unit 001, Raw Material Quarrying, Crushing, and Storage

- A.8. <u>Compliance Test Reports</u>. For each compliance test conducted, the permittee shall file a test report including the information specified in Rule 62-297.310(10)(c), F.A.C. with the compliance authority no later than 45 days after the last run of each test is completed. *(See Condition TR8. in Appendix TR, Facility-Wide Testing Requirements for additional test report requirements.)* [Rule 62-297.310(8), F.A.C.; Permit No. 1190042-001-AC (PSD-FL-361)]
- A.9. <u>Crusher Process Rate Records</u>. In order to document compliance with the crusher process rate limitations of **Specific Conditions A.2.** and **A.3.**, the permittee shall maintain the following records of the monthly crusher processing rate:
  - a. The month of the record;
  - b. The primary crusher processing rate (tons dry basis) for each month of limestone feed to the kiln;
  - c. The total tons (dry basis) processed through the primary crusher in the most recent 12 consecutive month period (stated as tons (dry basis) per 12 consecutive month period) of limestone feed to the kiln and limestone feed to the finish mill;
  - d. The ARM crusher processing rate for each month (tons); and
  - e. The total tons of material processed through the ARM crusher in the most recent consecutive 12month period.

The above information shall be recorded no later than 10 days following the end of the month. It shall be available to the Department when requested.

[Rule 62-213.440(1)(b), F.A.C., Permit Nos. 1190042-024-AC and 1190042-027-AC (PSD-FL-361H)]

A.10. <u>Other Reporting Requirements</u>. See Appendix RR, Facility-Wide Reporting Requirements, for additional reporting requirements. [Rule 62-213.440(1)(b), F.A.C.]

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#### Subsection B. Emissions Unit No. 002, Raw Materials Conveying, Storage, and Processing

#### The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
002	Raw Materials Conveying, Storage, and Processing

This emissions unit consists of raw material and additive storage to preheater (includes conveyance of raw materials and raw meal to and from raw mill, and homogenizing silo. Equipment includes one homogenizing silo (nominal 10,000-ton capacity) and the associated transport system.

The following emissions points (EP) in the raw materials conveying, storage, and processing system are controlled by fabric filter baghouses:

Emissions Point (EP) Description	Baghouse /EP ID	<b>Baghouse Description</b>
Raw meal transfer at air lift to homogenizing silo	F-10	CAMCORP Model 4TR8x16 baghouse with design exhaust air flow rate of 1,000 acfm
Raw meal transfer to homogenizing silo	G-07	CAMCORP Model 15TR12x225 baghouse with design exhaust air flow rate of 22,000 acfm
Homogenizing silo bin vent	G-10	CAMCORP Model 7TR12x49 baghouse with design exhaust air flow rate of 3,000 acfm
Filter dust surge bin	E-38	CAMCORP Model 8TR12x64 baghouse with design exhaust air flow rate of 6,000 acfm
Raw meal transfer from homogenizing silo	H-08	CAMCORP Model 4TR8x16 baghouse with design exhaust air flow rate of 1,000 acfm
Dust transfer from main baghouse to finish mill, including a 200-ton silo and dust collector	N-95	CAMCORP Model 8TR12x64 baghouse with design exhaust air flow rate of 6,000 acfm

{Permitting Note: The emission points tabulated above do not vent to the kiln (EU 003). This emissions unit is regulated under 40 CFR 63, Subpart A (General Provisions) and 40 CFR 63, Subpart LLL (National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Portland Cement Manufacturing Industry) adopted by reference in Rule 62-204.800(8)(b), F.A.C. For the purposes of Subpart LLL, this facility is considered an "existing" source (built prior to May 6, 2009). Although the baghouse for dust transfer from the main baghouse to the finish mill is considered "new" for purposes of NESHAP LLL; the monitoring and recordkeeping requirements are the same.}

#### **Essential Potential to Emit (PTE) Parameters**

**B.1.** <u>Hours of Operation</u>. This emissions unit is permitted to operate continuously (i.e., 8,760 hours per year). [Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.]

#### Control Technology

**B.2.** <u>Baghouse Controls</u>. Each emissions point (EP) identified above for the raw material conveying, storage and processing operations shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a PM design specification of 0.01 grains/dscf and a PM<sub>10</sub> design specification of 0.007 grains/dscf. [Rules 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD - Final BACT Determination and Emission Standards; Permit Nos. 1190042-001-AC (PSD-FL-361) and 1190042-015-AC]

#### Subsection B. Emissions Unit No. 002, Raw Materials Conveying, Storage, and Processing

#### **Emissions Limitations and Standards**

- **B.3.** <u>Visible Emissions Limitations</u>. VE shall not exceed the following limits:
  - a. VE are limited to 5% opacity from each of the EP shown in the EP table above and controlled by a baghouse.
  - b. VE are limited to 10% opacity from any other EP associated with this EU and <u>not</u> controlled by a baghouse.
  - c. VE are limited to 10% opacity from all EP in this EU.

{<u>Permitting Note</u>: The baghouses are designed to control PM emissions to 0.01 grains/dry standard cubic foot (gr/dscf) and PM<sub>10</sub> emissions to 0.007 gr/dscf. The 5% opacity limitation is consistent with this design and provides reasonable assurance that annual emissions of PM/PM<sub>10</sub> for all emission points in this emission unit system will be less than 10.5 TPY. Exceedance of the 5% opacity limit shall be deemed an exceedance of this permit condition and not necessarily an exceedance of the 10% opacity given in NSPS 40 CFR 60 Subpart F or NESHAP 40 CFR 63 Subpart LLL (40 CFR 63.1345).}

[Rules 62-204.800(8) & (11), & 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD - Final BACT Determination and Emission Standards; 40 CFR 60.62(c); 40 CFR 63.1345; and Permit Nos. 1190042-001-AC (PSD-FL-361) & 1190042-015-AC.]

#### **Monitoring Requirements**

- **B.4.** <u>Opacity Monitoring Requirements</u>. Each affected EP subject to an opacity standard shall be periodically monitored using procedure described in paragraphs "a" through "e" of this condition to ensure compliance with the requirements of **Specific Condition B.3.c.** 
  - a. The permittee must conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of 40 CFR 60, Appendix A. The performance test must be conducted while the affected source is in operation.
  - b. If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the permittee must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests. The permittee must also meet requirements of **paragraph d** below.
  - c. If no visible emissions are observed during the semi-annual test for any affected source, the permittee may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the owner or operator must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests. The permittee must also meet requirements of **paragraph d** below.
  - d. If visible emissions are observed during any Method 22 performance test, the permittee must conduct 30 minutes of opacity observations, recorded at 15-second intervals in accordance with Method 9 of 40 CFR 60, Appendix A. The Method 9 performance test must begin within 1 hour of any observation of visible emissions.
  - e. The requirement to conduct Method 22 visible emissions monitoring under this paragraph does not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. "Totally enclosed conveying system transfer point" means a conveying system transfer point that is enclosed on all sides, as well as, top and bottom. The enclosures for these transfer points must be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.
  - [40 CFR 63.1350(f)]

#### Subsection B. Emissions Unit No. 002, Raw Materials Conveying, Storage, and Processing

#### **Test Methods and Procedures**

- **B.5.** <u>Annual Compliance Tests Required</u>. During each calendar year (January 1<sup>st</sup> to December 31<sup>st</sup>), the baghouse exhaust vents for the emission points (EP) shown in the EP table above shall <u>each</u> be tested for visible emissions. [Rule 62-297.310(8), F.A.C.]
- **B.6.** <u>Test Methods</u>. When required, tests shall be performed in accordance with the following reference methods:

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources
22	Visual Determination of Fugitive Emissions From Material Sources (for opacity periodic monitoring)

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rule 62-297.401, F.A.C.]

**B.7.** <u>Common Testing Requirements</u>. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

#### **Records and Reports**

- **B.8.** <u>40 CFR 63 Subpart LLL Requirements</u>. The permittee shall meet the applicable notification, recordkeeping, and reporting requirements in 40 CFR 63.1353, 63.1354 and 63.1355. The permittee shall maintain files of all information (including all reports and notifications) required by 40 CFR 63.1355 recorded in a form suitable and readily available for inspection and review as required by 40 CFR 63.10(b)(1). The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site. The files may be maintained in electronic format. [40 CFR 63.1353, 1354 and 1355]
- **B.9.** <u>40 CFR 60 Subpart F Requirements</u>. The permittee shall meet the applicable recordkeeping and reporting requirements in 40 CFR 60.65. [40 CFR 60.65]
- **B.10.** <u>Other Reporting Requirements</u>. See Appendix RR, Facility-Wide Reporting Requirements, for additional reporting requirements. [Rule 62-213.440(1)(b), F.A.C.]

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#### Subsection C. Emissions Unit No. 003, Pyroprocessing System

#### The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
003	Pyroprocessing System

The Pyroprocessing System includes the kiln, preheater/calciner (PH/C), raw mill, raw mill air heater, and clinker cooler.

It consists of a dry process preheater/calciner rotary kiln with in-line raw mill that simultaneously dries and grinds raw materials using the exhaust gas from the kiln, preheater/calciner, and/or clinker cooler. The preheater includes a staged combustion calciner. The indirect-fired kiln, designed to process a nominal 220 tons per hour of dry preheater feed material (including baghouse dust recirculation), is equipped with a low-NO<sub>X</sub> main kiln burner.

The calciner burners and main kiln burner are capable of burning pulverized coal (primary fuel), petroleum coke, natural gas, propane (as a start-up fuel), on-specification used oil, No. 2 fuel oil, and certain categories of alternative fuel materials. The alternative fuels include, but are not limited to, tire-derived fuel (TDF), plastics, roofing materials, agricultural biogenic materials, untreated and treated cellulosic biomass, carpet-derived fuel, alternative fuel mix, biosolids, and engineered fuel (EF). A kiln tire feed mechanism with an airlock/gate system is capable of feeding TDF into the kiln system at the transition section between the base of the calciner and the point where gases exit the kiln. Other equipment includes a raw mill air heater (with a design maximum heat input rate of 36 MMBtu per hour) for use when additional material drying capacity is required, and a clinker cooler with reciprocating grates, cooling air fans, and hot air ducting to the kiln, preheater/calciner, or in-line raw mill. The raw mill air heater is capable of firing natural gas, virgin fuel oil, and on-specification used oil.

Emissions from the pyroprocessing system are directed to a single 12.8 foot diameter main exhaust stack with a stack height of 349 feet. The kiln vents partially to the coal mill (EU 007).

<u>PM/PM<sub>10</sub></u> emissions from the pyroprocessing system are controlled by the following fabric filter main baghouse.

Baghouse/ EP ID	Emissions Point (EP) Description	<b>Baghouse Description</b>
E-19	Pyroprocessing System	high temperature Main Baghouse with design exhaust
(Main	(Preheater/calciner, kiln, clinker	air flow rate of 409,650 acfm exhausting out the 349
Baghouse)	cooler, raw mill, air heater)	foot tall Main Stack

<u>Nitrogen Oxides (NO<sub>x</sub>)</u> emissions from the pyroprocessing system are controlled by the following:

- Low-NO<sub>X</sub> Burners and Indirect Firing The main kiln is equipped with a low NO<sub>X</sub> burner that creates distinct combustion zones within the flame. An indirect firing system is used to reduce the amount of primary air injected with the fuel used in the main kiln burner. The tire injection system reduces NOx emissions.
- Staged Combustion in the Calciner (SCC) The preheater/calciner (PH/C) system is designed such that the introduction of fuel, air, and meal to the calciner are staged or sequenced for the reduction of NO<sub>X</sub> emissions.
- SNCR in the Calciner A selective non-catalytic reduction (SNCR) system is operated to achieve the permitted levels for NO<sub>X</sub> emissions from the pyroprocessing system. The SNCR system consists of an aqueous ammonia tank, pumps, piping, compressed air delivery, injectors, control system, and other ancillary equipment. Aqueous ammonia is injected at locations in the calciner with an appropriate temperature profile to support the SNCR process.

#### Subsection C. Emissions Unit No. 003, Pyroprocessing System

<u>Sulfur Dioxide (SO<sub>2</sub>)</u> emissions from the pyroprocessing system are controlled by the use of low-sulfur raw materials which keep SO<sub>2</sub> emissions from the pyroprocessing system below permitted levels, and scrubbing by finely divided lime in the preheater, calciner, and kiln.

The kiln exhaust stack includes CEMS for NOx, CO, THC, Hg, & HCl; and a CPMS for PM.

{Permitting Notes: The permittee notified the Department by letter dated December 22, 2016, that the cement plant kiln unit is subject to the requirements for waste burning kilns under Rule 62-204.800(9)(f), F.A.C., which incorporates the requirements of DDDD, rather than being regulated under LLL. At the time of issuance of this permit, the kiln remains subject to DDDD and not LLL. If the permittee certifies that the kiln has not used any waste material for a period of six months and provides the appropriate advance notice to the Department, this permit authorizes the permittee to revert back to compliance with LLL rather than DDDD. If any material constituting waste were to be used, however, the kiln would immediately be subject to the DDDD requirements. This subsection of the permit therefore includes three sets of conditions to address the separate requirements. **Specific Conditions C.4** through **C.33** apply regardless of applicability of DDDD or LLL; **Specific Conditions C.34** through **C.54**. apply only when the kiln is subject to DDDD; and **Specific Conditions C.55** through **C.68** apply only when the kiln is subject to LLL.

This emissions unit may be regulated under 40 CFR 63, Subpart A (General Provisions) and 40 CFR 63, Subpart LLL, adopted by reference in Rule 62-204.800(8)(b), F.A.C. For the purposes of Subpart LLL emission limits, this facility is considered an "existing" source (built prior to May 6, 2009)

This emissions unit is subject to 40 CFR 60 Subpart A (General Provisions) and 40 CFR 60 Subpart F -Standards of Performance for Portland Cement Plants. Construction of the components of this Portland cement manufacturing plant was commenced on or before July 9, 2007, which is before the June 16, 2008 trigger date contained in Subpart F for the applicability of some requirements and is therefore "existing" equipment for the purposes of NSPS. If the unit is subject to DDDD, the unit is also considered "existing" based on the date of commencement of construction. The Department determined that the Best Available Control Technology (BACT) emissions performance requirements of this permit are as stringent as or more stringent than the requirements imposed by the applicable 40 CFR 60 Subpart F (NSPS) provisions. Some separate reporting and monitoring may be required by the individual subpart.

<u>PSD BACT Determinations</u>: A determination of the BACT was made for particulate matter ( $PM/PM_{10}$ ), CO,  $NO_X$ ,  $SO_2$  and VOC for this emissions unit (Permit No. 1190042-001-AC (PSD-FL-361).}

- C.1. <u>NESHAP Applicability</u>.
  - a. Subpart LLL. Subpart LLL and Specific Conditions C.55 through C.68 apply to this emissions unit (EU) if the permittee were to switch to all non-waste fuels and meet the requirements of Specific Condition C.3 below, then Subpart LLL would apply instead of the CISWI requirements. [40 CFR 63.1348(a)]
  - b. *Subpart A*. If this EU becomes subject to NESHAP Subpart LLL, 40 CFR 63 Subpart A –General Provisions, would also apply. [40 CFR 63.1]
- C.2. <u>NSPS Applicability</u>.
  - a. *Subpart A*. This emissions unit shall comply with all the applicable standards contained in 40 CFR 60 Subpart A General Provisions, regardless of the EU being subject to DDDD or LLL. [40 CFR 60.1]
  - b. Subpart F. This emissions unit shall comply with all the applicable standards contained in 40 CFR 60 Subpart F – Standards of Performance for Portland Cement Plants, regardless of the EU being subject to DDDD or LLL. [40 CFR 60.60]
  - c. Subpart DDDD. This EU shall comply with all applicable standards under Rule 62-204.800(9)(f), F.A.C., which implements the emission guidelines of 40 CFR 60 Subpart DDDD, unless the operator switches to non-waste fuels as provided under Specific Condition C.3 below. [Rule 62-204.800(9)(f), F.A.C.]

#### Subsection C. Emissions Unit No. 003, Pyroprocessing System

- C.3. <u>Change of NSPS/NESHAP Applicability Status</u>.
  - a. *Waste-to-Fuel Switch*. If the permittee combusts solid waste in the kiln, the kiln is subject to NSPS Subpart DDDD. If the permittee ceases to combust solid waste in the kiln, the permittee has the option of switching from compliance with Subpart DDDD to compliance with NESHAP Subpart LLL. If the permittee makes this election, the permittee shall meet the following conditions.
    - (1) The permittee shall first establish an "effective date" for the waste-to-fuel switch, which shall be at least six (6) months after the date that the permittee ceased combusting solid waste in the kiln, consistent with 40 CFR 60.2710(a)(2), referenced in Rule 62-204.800(9)(f), F.A.C.
    - (2) The kiln shall remain in compliance with DDDD, set forth in **Specific Conditions C.34** through **C.54**., until the "effective date" of the waste-to-fuel switch.
    - (3) The permittee shall provide the Department with 30 days' advance notice prior to the "effective date" of the waste-to-fuel switch.
    - (4) The permittee shall be in compliance with NESHAP Subpart LLL on the "effective date" of the waste-to-fuel switch.
  - b. *Notification of Waste-to-Fuel Switch*. The permittee's 30-day advance notification to the Department regarding the effective date of a waste-to-fuel-switch required **Specific Condition C.3a(3)** above, shall include:
    - (1) The date of the notice;
    - (2) The name of the owner or operator and the location of the DDDD kiln that will cease burning solid waste;
    - (3) The kiln is currently a DDDD unit, and Subpart LLL will become applicable as of the effective date of the waste-to-fuel switch;
    - (4) The fuel(s), non-waste material(s), and solid waste(s) the kiln is currently combusting and has combusted over the past 6 months, and the fuel(s) or non-waste materials the kiln will commence combusting;
    - (5) The date on which the kiln became subject to the currently applicable Subpart DDDD emission limits;
    - (6) The date the permittee ceased combusting solid waste in the kiln; and
    - (7) The effective date of the waste-to-fuel switch, consistent with Specific Condition C.3a(1) above.
  - c. If the permittee meets these conditions, the kiln will become subject to the applicable requirements of NESHAP Subpart LLL on the effective date of the waste-to-fuel switch and Specific Conditions C.55 through C.68, reflecting the Subpart LLL requirements will apply to the kiln, instead of the Subpart DDDD requirements reflected in Specific Conditions C.34 through C.54.
  - d. *Re-firing Solid Waste. Compliance Requirements.* Following a waste-to-fuel switch and the applicability of LLL, if the permittee begins using materials identified as a solid waste in the kiln, the kiln will again be subject to the DDDD requirements in Rule 62-204.800(9)(f), F.A.C. The "effective date" of the fuel-to-waste switch is the first day that the permittee introduces (or re-introduces) solid waste into the kiln. The permittee shall complete all initial compliance demonstrations for any LLL standards that are applicable to the kiln before the permittee commences or recommences combustion of solid waste. In addition, the permittee must provide 30 days' prior notice of the fuel-to-waste switch "effective date." After the completion of any required testing and the thirty-day notice, Subpart LLL requirements will no longer apply.
  - e. All air pollution control equipment necessary for compliance with any newly applicable emissions limits which apply as a result of the cessation or commencement or recommencement of combusting solid waste shall be installed and operational as of the effective date of the waste-to-fuel or fuel-to-waste switch.
  - f. All monitoring systems necessary for compliance with any newly applicable monitoring requirements which apply as a result of the cessation or commencement or recommencement of combusting solid waste shall be installed and operational as of the effective date of the waste-to-fuel, or fuel-to-waste switch. All calibration and drift checks shall be performed as of the effective date of the waste-to-fuel, or fuel-to-

#### Subsection C. Emissions Unit No. 003, Pyroprocessing System

waste switch. Relative accuracy testing for DDDD CEMS need not be repeated if that testing was previously performed consistent with section 112 monitoring requirements.

[Rule 62-204.800(9)(f), F.A.C. and 40 CFR 60.2710(a)]

# Specific Conditions C.4–C.33 apply to this EU always, regardless of whether the EU is regulated under DDDD or LLL.

- C.4. <u>Hours of Operation</u>. This emissions unit is permitted to operate continuously (i.e., 8,760 hours per year). [Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.; Permit No. 1190042-001-AC (PSD-FL-361)]
- C.5. <u>Process Rate Limitations</u>. The clinker production rate of the kiln shall not exceed 135.42 tons per hour (30-kiln operating day rolling average) and 1,186,250 tons during any consecutive 12-month period. Kiln preheater feed rate shall be monitored and recorded for purposes of determining clinker production. The clinker production rate shall be determined using a factor based on reconciled clinker production, determined for accounting purposes in accordance with 40 CFR 63.1350(d)(1)(ii) and as specified in Specific Condition C.59. [Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.; Permit Nos. 1190042-001-AC (PSD-FL-361), 1190042-009-AC (PSD-FL-361F), and 1190042-015-AC]
- C.6. <u>Authorized Fuels Categories for Pyroprocessing System Kiln and Calciner</u>. Only the following authorized fuels shall be fired in the pyroprocessing system kiln and calciner. (See **Specific Condition H.4** for a description of each fuel category.)
  - a. coal
  - b. petroleum coke
  - c. natural gas
  - d. propane (during startup only and limited to 5,000 gallons per year)
  - e. virgin fuel oil
  - f. on-specification used fuel oil
  - g. tire-derived fuel (TDF) (The kiln is currently permitted to use both whole tires using the existing tire injection mechanism system and chipped tires.)
  - h. plastics
  - i. roofing materials
  - j. agricultural biogenic materials
  - k. cellulosic biomass untreated
  - 1. cellulosic biomass treated (The permittee shall not fire more than 1,000 lb/hour averaged on a 7-day block average basis of segregated streams of wood treated with copper-chromium-arsenic (CCA) compounds.)
  - m. carpet-derived fuel
  - n. alternative fuel mix
  - o. biosolids; and/or
  - p. engineered fuel (EF)

[Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.; Permit Nos. 1190042-001-AC (PSD-FL-361), 1190042-009-AC (PSD-FL-361F], & 1190042-019-AC]

## C.7. <u>Authorized Fuels for Pyroprocessing System Air Heater</u>. The raw mill air heater shall fire only the following fuels:

- a. natural gas;
- b. on-specification used oil; or
- c. No. 2 or No. 4 fuel oil.

[Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361), as amended by Permit No. 1190042-003-AC (PSD-FL-361B)]

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- **C.8.** <u>Prohibited Fuels and Materials</u>. The owner or operator shall <u>not</u> introduce into any part of the process any of the following fuels and materials:
  - a. hazardous wastes as defined in 40 CFR 261;
  - b. petroleum contaminated soil or materials;
  - c. off-specification used oil;
  - d. solid fuels other than those allowed by this permit;
  - e. nuclear waste, and radioactive waste;
  - f. biomedical waste;
  - g. asbestos-containing materials per 40 CFR 61 Subpart M;
  - h. whole batteries;
  - i. solid wastes, other than those allowed by this permit, or
  - j. Coal ash which has not been determined to be acceptable for initial or continued use to control emissions of Total Hydrocarbon (THC) and Volatile Organic Compound (VOC) by initial, trial, or periodic sampling protocols and test results specified in the facility Material Management Plan for THC/VOC emissions control (Appendix MM Material Management Plan).

These prohibited materials shall not be used to manufacture engineered fuels. If the permittee identifies delivered material that falls under this specific condition, the supplier shall be contacted and the material shall be returned, disposed, or any other appropriate legal method of handling the material shall be employed. The permittee shall maintain records of delivery, sampling and analysis, and actions taken to correct abnormalities. Such records shall be stored onsite for at least five years and available for inspection upon request.

[Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361), 1190042-009-AC (PSD-FL-361F), and 1190042-017-AC; 30-Day Response letter to Consent Order OGC 15-0398, dated September 17, 2015, specifically Appendix 1 Material Management Plan]

- **C.9.** <u>Maximum Heat Input Rate to Pyroprocessing System Kiln and Calciner</u>. The design heat input rate to the pyroprocessing system kiln and calciner (combined) is 9,600 MMBtu per day (based on a nominal rate of 400 MMBtu/hr). [Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]
- **C.10.** <u>Tire Derived Fuel (TDF) Usage Limitations and Requirements</u>. The use of tire derived fuel (TDF) in the pyroprocessing system is limited by the following requirements:
  - a. Tire derived fuel (TDF) shall be introduced only in the high-temperature combustion zones of the main kiln burner, the precalciner burner, or appropriate secondary firing points in the precalciner/preheater as follows:
    - (1) TDF, as finely ground tires, may be fed directly into the main kiln burner.
    - (2) TDF, as whole and/or chipped tires, shall be directly fed into the kiln system at the transition section between the base of the calciner and the point where gases exit the kiln. The tire feed mechanism shall be operated with an airlock/gate system.
    - (3) TDF, as a component of engineered fuels, may be fed directly into the precalciner.
  - b. Tires shall be stored, handled and managed in accordance with the provisions of Chapter 62-711, F.A.C. [Rule 62-210.200 (Definition of Potential to Emit), F.A.C.; Permit Nos.1190042-001-AC (PSD-FL-361) and 027-AC (PSD-FL-361H)]
- C.11. <u>On Specification Used Oil Fuel Usage Limitations</u>. The firing of "on-specification" used oil fuel shall not exceed the following:
  - a. 1,000 gallons per hour (kiln and calciner combined); and
  - b. 1,500,000 gallons during any consecutive 12-month period (kiln, calciner, and raw mill air heater combined).

(See Specific Condition C.30 for recordkeeping requirements associated with the limitations of a. and b.

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above.)

[Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]

- C.12. <u>Standards for Used Oil Burners</u>.
  - a. To ensure that used oil managed at a used oil burner facility is not hazardous waste under the rebuttable presumption of 40 CFR 279.10(b)(1)(ii), a used oil burner must determine whether the total halogen content of used oil managed at the facility is above or below 1,000 ppm.
  - b. The used oil burner must determine if the used oil contains above or below 1,000 ppm total halogens by:
     (1) Testing the used oil;
    - (2) Applying knowledge of the halogen content of the used oil in light of the materials or processes used; or
    - (3) If the used oil has been received from a processor/re-finer subject to regulation under Subpart F of 40 CFR, Part 279, using information provided by the processor/re-finer.
  - c. If the used oil contains greater than or equal to 1,000 ppm total halogens, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in Subpart D of 40 CFR, Part 261. The owner or operator may rebut the presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Appendix VIII of 40 CFR, Part 261).
    - (1) The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement as described in 40 CFR 279.24(c), to reclaim metalworking oils/fluids. The presumption does apply to metalworking oils/fluids if such oils/fluids are recycled in any other manner, or disposed.
    - (2) The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons (CFCs) removed from refrigeration units where the CFCs are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units.
  - d. Records of analyses conducted or information used to comply with paragraphs a., b., and c. of this condition shall be maintained by the burner for at least 3 years.
  - [40 CFR 279.63, Rebuttable Presumption for Used Oil]
- C.13. <u>Cement Kiln Dust Handling Requirements</u>. Cement kiln dust shall be re-circulated in the process and shall not be directly discharged from process. This in-process recirculation includes the transfer of baghouse dust from the baghouse or dust bin to the finish mill, or elsewhere, for the purpose of controlling mercury emissions. Cement kiln dust removed from process equipment during maintenance and repair shall be confined and controlled at all times and shall be managed in accordance with the applicable provisions of 40 CFR 261. [Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]
- C.14. <u>SNCR System</u>. A selective non-catalytic reduction (SNCR) system shall be operated to achieve the permitted levels for NO<sub>x</sub> emissions from the pyroprocessing system. The SNCR system will consist of an aqueous ammonia tank, pumps, piping, compressed air delivery, injectors, control system, and other ancillary equipment. Aqueous ammonia will be injected at a location(s) in the preheater/calciner with an appropriate temperature profile to support the SNCR process. [Rule 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD Final BACT Determination and Emission Standards; Permit No.1190042-001-AC (PSD-FL-361)]
- **C.15.** <u>Dry Sorbent Injection (DSI) System</u>. The permittee is authorized to operate a DSI system and ancillary equipment. The DSI system shall vent to the kiln exhaust; the system is considered part of the equipment.
  - a. *Method of Operation*. Each dry sorbent injection system shall inject sorbent between the kiln ID fan outlet and the main kiln baghouse primarily to control Hg emissions from the kiln.
  - b. Authorized Sorbents. The owner or operator is authorized to use activated carbon, sodium bicarbonate,

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hydrated lime, and sodium sesquicarbonate (trona) as sorbents for this DSI system. The owner or operator shall notify the Department of the use of a new sorbent (i.e., a sorbent not authorized by Permit No. 1190042-018-AC). Submit the notification to <u>DARM Permitting@dep.state.fl.us</u>.

[Rules 62-210.200(PTE) & 62-213.410 (Changes without Permit Revision), F.A.C. and Permit No. 1190042-018-AC]

#### **Excess Emissions**

{Permitting Note: Specific Conditions C.16. through C.19. apply only to the emissions standards specified in Specific Condition C.34. of this section that have "BACT" as the basis for the standard. Rule 62-210-700, F.A.C., (Excess Emissions) cannot vary or supersede any federal provision of the NSPS or the NESHAP programs.}

- **C.16.** <u>Operating Procedures</u>. The Best Available Control Technology (BACT) determinations established by this permit rely on "good operating practices" to reduce emissions. Therefore, all operators and supervisors shall be properly trained to operate and maintain the kiln and calciner, and pollution control systems in accordance with the guidelines and procedures established by each manufacturer. The training shall include good operating practices as well as methods for minimizing excess emissions. [Rule 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD Final BACT Determination and Emission Standards; Permit No.1190042-001-AC (PSD-FL-361)]
- C.17. <u>Excess Emissions Prohibited</u>. Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-210.700(4), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]
- **C.18.** <u>Allowable Data Exclusions (BACT Limits Only)</u>. Continuous monitoring data collected during periods of startup, shutdown, and malfunction may be excluded from the compliance demonstrations only in accordance with the following requirements, provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions are minimized. As provided by the authority in Rule 62-210.700(5), F.A.C., the following conditions replace the provisions in Rule 62-210.700(1), F.A.C.
  - a. *CO Data*. Each 30-day rolling average shall include all periods of operation (including startup, shutdown, and malfunction), but may exclude limited periods due to equipment malfunctions. No more than 30 hours in any calendar month shall be excluded from the compliance determinations due to equipment malfunctions. Malfunctions do not include process upsets that occur as a normal part of cement production.
  - b. NOx Data. Each 30-day rolling average shall include all periods of operation (including startup, shutdown, and malfunction), but may exclude limited periods due to malfunctions of the Selective Non-Catalytic Reduction (SNCR) system. "Malfunctions of the SNCR system" are defined as any unavoidable mechanical and/or electrical failure that prevents introduction of ammonia-based solutions into the kiln system. No more than 30 hours in any calendar month shall be excluded from the compliance determinations due to malfunctions of the SNCR system.
  - c. *Other Data*. All valid data shall be included in the compliance determination. If the mercury CEMS is used as the method for demonstrating compliance, all valid data shall be included in the compliance determination.
  - d. *Definitions*. The following definitions apply to the above provisions:
    - (1) *Startup (BACT)* is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical, or pollution control device imbalances, which might result in excess emissions.
    - (2) *Shutdown (BACT)* means the cessation of the operation of an emissions unit for any purpose. Shutdown begins when feed to the kiln is halted and ends when continuous kiln rotation ceases.

(3) *Malfunction (BACT)* means any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.

Within one working day of any BACT only startup, shutdown, or malfunction of the system for which an exclusion of data occurred, the permittee shall notify the Department's Central District Compliance Assurance Program (<u>DEP\_CD@dep.state.fl.us</u>).

[Rule 62-210. 200 (159, 230, and 245), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]

C.19. <u>Malfunction Notifications</u>. If temporarily unable to comply with any condition of the permit due to breakdown of equipment (malfunction) or destruction by hazard of fire, wind, or by other cause, the permittee shall immediately (within one working day) notify the Compliance Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules. If requested by the Compliance Authority, the owner or operator shall submit a quarterly written report describing the progress being made to correct the problem and prevent its recurrence. [Rules 62-210.700(6) and 62-4.130, F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]

{Permitting Note: "Immediately" shall mean the same day, if during a workday (i.e., 8:00 a.m. - 5:00 p.m.), or the first business day after the incident, excluding weekends and holidays; and, for purposes of Rule 62-4.160(15) and 40 CFR 70.6(a)(3)(iii)(B), "promptly" or "prompt" shall have the same meaning as "immediately".}

#### **Monitoring Requirements**

- **C.20.** <u>Aqueous Ammonia Injection</u>. A monitoring system to continuously monitor and record the aqueous ammonia injection rate of the SNCR system (1-hour block averages) shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations. [Rule 62-212.400 (Best Available Control Technology), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]
- C.21. <u>Required CEMS</u>. The permittee shall calibrate, operate and maintain CEMS to measure and record concentrations of the following pollutants in the pyroprocessing system main exhaust stack (Baghouse/EP ID E-19) in a manner sufficient to demonstrate continuous compliance with the emissions standards specified in this subsection for the pyroprocessing system.
  - a. CO;
  - b. NOx;
  - c. Hg;
  - d. VOC/THC\*; and
  - e. HCl

\* A continuous oxygen diluent monitor shall be calibrated, operated, and maintained at the THC monitor location to correct measured THC emissions to the required oxygen concentration. In the event the oxygen monitor is not operating, a default stack gas oxygen concentration of 16 percent will be applied.

[Rules 62-4.070(3), 62-204.800(11), 62-212.400 (Best Available Control Technology (BACT)), and 62-297.520, F.A.C.; Appendix BD - Final BACT Determination and Emission Standards; Permit No. 1190042-001-AC (PSD-FL-361)]

- C.22. <u>CEMS Certification Requirements</u>.
  - a. *CO CEMS (BACT)*. The carbon monoxide continuous emissions monitoring system (CO CEMS) shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F. The required Relative Accuracy Test Audit (RATA) tests shall be performed using EPA Method 10 in Appendix A of 40 CFR 60 and shall be based on a continuous sampling train. The CO CEMS span values shall be set

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appropriately, considering the expected range of emissions and corresponding emission standards.

b. *NOx CEMS (BACT)*. The nitrogen oxides continuous emissions monitoring system (NOx CEMS) shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 2. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F. The required RATA tests shall be performed using EPA Method 7E in Appendix A of 40 CFR 60. The NO<sub>X</sub> CEMS span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.

[Rules 62-204.800(8) & 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD - Final BACT Determination and Emission Standards; 40 CFR 60 Appendices A, B and F; Permit No.1190042-001-AC (PSD-FL-361)]

- **C.23.** <u>CEMS Data requirements (BACT Only CO, VOC, and NOx)</u>. The CEMS shall be calibrated, maintained, and operated in the in-line kiln/raw mill stack to measure and record the emissions of CO, NO<sub>X</sub>, and THC/VOC in a manner sufficient to demonstrate compliance with the emission limits of this permit. The CEMS shall express the results in units of pounds per ton of clinker produced, and pounds per hour. Emissions of VOC shall be reported in units of the standards (lb/hr, lb/ton of clinker) for BACT monitoring
  - a. Valid hourly averages (applies to all CEMS (BACT) hourly data used for longer averaging times. Each CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour. Each 1-hour block average shall be computed using at least one data point in each fifteen-minute quadrant of an hour, where the unit combusted fuel (or produced clinker) during that quadrant of an hour. Notwithstanding this requirement, a 1-hour average shall be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour). If less than two such data points are available, there is insufficient data and the 1-hour block average is not valid.
    - (1) Hours during which there is no kiln feed and no fuel fired are not valid hours.
    - (2) Hours during which the plant is firing fuel but producing no clinker are valid, but these hours are excluded from the production-normalized emission rate computation (pounds per ton of clinker). These hours are included in any pollutant mass emission rate computation (pounds per hour).
  - b. *30-day rolling averages (CO and NOx)*. Compliance with the emission limits for CO and NO<sub>x</sub> shall be based on a 30-day rolling average. Each 30-day rolling average shall be the arithmetic average of all valid hourly averages collected during the last 30 operating days. A new 30-day rolling average shall be recomputed after every day of operation for the new day and the preceding 29 operating days. For purposes of computing these emission limits, an operating day is any day that the kiln produces clinker or fires fuel.
  - c. 30-day block average (VOC). Compliance with the emission limits for VOC (as THC) shall be based on a 30-day block average. Each 30-day block average shall be the arithmetic average of all valid hourly averages occurring within each 30 operating-day block.
     {Permitting Note: Permittee may demonstrate by an annual Method 25A test, the fraction of THC that is methane and/or ethane. The methane/ethane fraction determined by this annual Method 25A test can then be subtracted from the THC CEMS data to demonstrate compliance with the VOC BACT limit.}
  - d. *Data exclusion*. Except for monitoring system breakdowns, repairs, calibration checks, zero and span adjustments, each CEMS shall monitor and record emissions during all operations including episodes of startups, shutdowns, and malfunctions. Limited amounts of CEMS emissions data recorded during some of these episodes may be excluded from the corresponding compliance demonstration subject to the provisions of **Specific Condition C.18**. The permittee shall minimize the duration of data excluded for such episodes to the extent practicable.
  - e. *Data availability*. Monitor availability for each CEMS shall be 95% or greater in any calendar quarter. Monitor availability shall be reported in the quarterly excess emissions report. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95%

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availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit, except as otherwise authorized by the Compliance Authority.

{Permitting Note: Not meeting 95% CEMS availability in a single calendar quarter does not constitute a violation of this permit condition so long as the corrective actions stipulated by the condition, i.e., submittal of a plan identifying the problems and taking corrective action in the next calendar quarter, are implemented by the permittee. Different problem(s) arising in subsequent calendar quarters with regard to CEMS availability also does not necessarily constitute a violation of this permit condition so long as corrective actions have been taken addressing any previous problem(s) and the new problem(s) do not arise from lack of maintenance, training of personnel or other negligence by the permittee. In addition, circumstances completely outside the control of the permittee, e.g. lightning strikes, that prevent 95% CEMS availability in a calendar quarter to calendar quarter related to the same problem(s) that causes CEMS availability to not meet the 95% criteria could also constitute a violation of this permit condition. Finally, condition.}

[Permit Nos. 1190042-001-AC (PSD-FL-361), 1190042-008-AC; 1190042-015-AC; and 1190042-022-AC]

**C.24.** <u>Continuous Compliance</u>. For purposes of BACT, continuous compliance with the permit standards for emissions of CO, NOx, Hg and VOC (via THC) shall be demonstrated with data collected from the required continuous emissions monitoring systems (CEMS). [Rules 62-212.400(10)(b) and 62-297.310(8)(a) & (b), F.A.C.]

#### **Testing Requirements**

- **C.25.** <u>SO<sub>2</sub> Compliance Testing</u>. Compliance stack tests for SO<sub>2</sub> shall be conducted prior to submittal of a Title V permit renewal application. [Permit No.1190042-015-AC]
- C.26. <u>Compliance Testing requirements</u>. Any required compliance tests shall be conducted at, at least 90% of permitted capacity in accordance with the requirements of Rule 62-297.310(3), F.A.C. [Rules 62-204.800(8) and 62-297.310(8)(a) and (b), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]

C.27.	Test Methods.	When required, tests shall be performed in accordance with the following reference	
me	thods:		

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5 or 5I	Method for Determining Particulate Matter Emissions (All PM is assumed to be PM <sub>10</sub> .)
6C	Method for Determining SO <sub>2</sub> Emissions (Instrumental)
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Note: The method shall be based on a continuous sampling train.}
23	Determination of Polychlorinated Dibenzo-P-Dioxins and Polychlorinated Dibenzofurans from Stationary Sources
321	Measurement of HCl by Fourier Transform Infrared (FTIR) instrumentation
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)
29	Determination of Metal Emissions from Stationary Sources

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Method	Description of Method and Comments
30A	Determination of Total Vapor Phase Mercury Emissions From Stationary Sources (Instrumental Analyzer Procedure)
30B	Determination of Mercury from Coal-Fired Combustion Sources Using Carbon Sorbent Traps

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. Tests shall be conducted in accordance with the appropriate test method and the applicable requirements specified in Appendix C of this permit, NSPS Subparts A and DDDD in 40 CFR 60, and NESHAP Subparts A and LLL in 40 CFR 63. [Rules 62-204.800(8) F.A.C.; 40 CFR 60 Appendix A; 40 CFR 63 Subparts A and LLL]

#### **Records and Reports**

- C.28. <u>Used Oil Records</u>. For each shipment of used oil received, the owner or operator shall maintain records from the vendor certifying that the used oil meets **Specific Condition FW12**. for specifications for "on-specification" used oil fuel. Records shall include the following parameters: arsenic, cadmium, chromium, lead, total halogens, flash point, PCBs, sulfur content, coal ash, and heating value. Otherwise, the owner or operator shall sample and analyze each shipment of used oil received for the above parameters. If vendor certifications are relied upon, the owner or operator shall analyze at least one sample obtained each calendar year for the above parameters. If analytical results show that the used oil does not meet the above requirements, the owner or operator shall immediately cease burning of the used oil and notify the Compliance Authority of the analytical results. The analysis shall be performed via EPA-approved or ASTM methods. The permittee shall obtain, make, and keep the following records:
  - a. gallons of on-specification used oil received and burned each month;
  - b. name and address of all vendors delivering used oil to the facility;
  - c. copies of the vendor certifications, if obtained, and any supporting information; and
  - d. analytical results showing required parameters.

The records shall be retained in a form suitable for inspection at the facility by the Department and shall be retained permanently.

[Permit No.1190042-001-AC (PSD-FL-361), 40 CFR 279.61, 40 CFR 761.20(e)]

- C.29. <u>Operational Records</u>. In order to demonstrate compliance with the limitations specified in **Specific Condition C.5.** through C.10., and C.14., the owner or operator shall maintain the following operational records on site:
  - a. For each 1-hour block of operation, continuously monitor and record the following:
    - (1) Dry preheater feed rate (tons/hour);
    - (2) Clinker production rate (tons/hour);
    - (3) fuel sources in use and fuel firing rate(s) for each fuel;
    - (4) heat input rate (based on the representative heating value and the hourly fuel firing rate of each fuel); and
    - (5) SNCR system  $NH_3/NO_X$  molar ratio or ammonia injection rate.
  - b. Records shall also document the following for each 24-hour rolling period and consecutive 12-month period:
    - (1) dry preheater feed rate (tons/24 hours and tons/12 consecutive months); and
    - (2) clinker production rates (tons/24 hours and tons/12 consecutive months)

[Permit No.1190042-001-AC (PSD-FL-361)]

#### Subsection C. Emissions Unit No. 003, Pyroprocessing System

- C.30. <u>On-Specification Used Oil Usage Records</u>. In order to demonstrate compliance with the usage limitations specified in **Specific Condition C.11.**, the permittee shall keep the following records of on-specification used oil usage in the pyroprocessing system:
  - a. Daily records shall consist of:
    - (1) gallons of on-specification (*see Specific Condition FW12. for specifications*) used oil used each day in the pyroprocessing system (gallons/day);
    - (2) amount of time each day that any pyroprocessing equipment was in operation firing on-specification used oil (hours/day); and
    - (3) daily average gallons/hour on-specification used oil firing rate, based on "a." and "b." above (divide "a" by "b").
  - b. Monthly records shall consist of:
    - (1) total pyroprocessing system on-specification used oil usage for the month (gallons/month);
    - (2) total pyroprocessing system on-specification used oil usage for the most recent 12-consecutive month period (gallons/12-consecutive months)

[Permit No.1190042-001-AC (PSD-FL-361)]

- **C.31.** <u>Fuel Analysis Records</u>. For each traditional fuel delivery the owner or operator shall maintain records of the quantity of fuel delivered and a representative analysis of the fuel including the sulfur content, higher and lower heating value, proximate analysis, and ultimate analyses. [Rule 62-212.400 (Best Available Control Technology), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]
- C.32. <u>Annual Mercury PSD Avoidance Emission Limitation Compliance Demonstration</u>.
  - a. Material Balance Demonstration. If not using the mercury (Hg) CEMS to demonstrate compliance with the Annual Hg BACT emission limitation (see b. below), the owner or operator shall demonstrate compliance with the Hg throughput limitation by material balance and maintaining records of the monthly and rolling 12-month mercury throughput. Samples of the raw mill feed and all fuels shall be collected each day. A single composite daily sample shall be made from all samples collected during a day. A monthly composite sample shall be made from each of the daily composite samples. Each monthly composite sample shall be analyzed to determine the mercury concentration of the materials representative for the month. The analytical methods used to determine mercury concentration shall be EPA or ASTM methods such as EPA Method 7471A (Mercury in Solid or Semisolid Waste). No other methods may be used unless prior written approval is received from the Department. For each raw material and fuel, the monthly mercury throughput rate (pounds per month) shall be the product of the mercury concentration from the monthly composite sample and the mass of raw material or fuel used during the month. If the mercury concentration is below detection limit or below the limits of quantification, the detection limit will be assumed for the concentration of the raw material or fuel. The owner or operator shall have the option of collecting, composting, analyzing and calculating the Hg leaving the process via the clinker or dust permanently withdrawn from the pyroprocessing system. If the mercury concentration is below the detectable limit or limits of quantification (for the clinker or dust withdrawn), a value of zero will be assumed for the concentration in the clinker or dust.
    - (1) For each month, the mass of mercury introduced into the pyroprocessing system (pounds per month) shall be the sum of the monthly mercury throughput rate for each raw material and fuel.
    - (2) The consecutive 12-month mercury throughput rate shall be the sum of the individual monthly records for the current month and the preceding eleven months (pounds of mercury per consecutive 12-months).
    - (3) Such records, including calculations and data, shall be completed no later than 25 days following the month of the records.
  - b. *Use of Mercury CEMS*. The permittee may use the Hg-CEMS to demonstrate compliance with the BACT cumulative 12-month rolling Hg mass emission limitation (122 pounds per rolling 12-month period) in lieu of the procedures described in the preceding paragraph.

#### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS. Subsection C. Emissions Unit No. 003, Pyroprocessing System

[Permit No.1190042-001-AC (PSD-FL-361)]

*{Permitting Note: Demonstrating compliance with the more stringent Hg emission standard in DDDD or LLL (as applicable), assures compliance with the BACT standard.}* 

- **C.33.** <u>Actual Emissions Reporting</u>: Permit No. 1190042-019-AC is based on an analysis that compared baseline actual emissions with projected actual emissions and avoided the requirements of subsection 62-212.400(4) through (12), F.A.C. for several pollutants. Therefore, pursuant to Rule 62-212.300(1)(e), F.A.C., the permittee is subject to the following monitoring, reporting and recordkeeping provisions.
  - a. The permittee shall monitor the emissions of any PSD pollutant that the Department identifies could increase as a result of the construction or modification and that is emitted by any emissions unit that could be affected; and, using the most reliable information available, calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change. Emissions shall be computed in accordance with the provisions in Rule 62-210.370, F.A.C., which are provided in Appendix C of Permit No. 1190042-019-AC.
  - b. The permittee shall report to the Department within 60 days after the end of each calendar year during the 5-year period setting out the unit's annual emissions during the calendar year that preceded submission of the report. The report shall contain the following:
    - (1) The name, address and telephone number of the owner or operator of the major stationary source;
    - (2) The annual emissions calculations pursuant to the provisions of 62-210.370, F.A.C., which are provided in Appendix C of Permit No. 1190042-019-AC;
    - (3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and
    - (4) Any other information that the owner or operator wishes to include in the report.
  - c. The information required to be documented and maintained pursuant to subparagraphs 62-212.300(1)(e)1 and 2, F.A.C., shall be submitted to the Compliance Authority and Permitting Authority, which shall make it available for review to the general public.
  - d. The permittee shall compute and report annual emissions in accordance with Rule 62-210.370(2), F.A.C. as provided by Appendix C of Permit No. 1190042-019-AC. For Permit No. 1190042-019-AC, the permittee shall use the following methods in reporting the actual annual emissions of nitrogen oxides (NO<sub>X</sub>) for the pyroprocessing system:
    - (1) The permittee shall use data collected from the CEMS to determine and report the actual annual emissions of NO<sub>X</sub>.
    - (2) As defined in Rule 62-210.370(2), F.A.C., the permittee shall use a more accurate methodology if it becomes available.

{*Permitting Note: The baseline emissions of NO<sub>X</sub> were determined to be 532.6 TPY and the could have accommodated/demand growth emissions were determined to be 169.6 TPY of NO<sub>X</sub>.}* 

[Permit No. 1190042-019-AC; and Rules 62-212.300(1)(e) and 62-210.370, F.A.C.]

#### Specific Condition C.34. to C.54 apply only if the kiln is subject to DDDD

#### **Emissions Standards**

**C.34.** <u>Emission Standards</u>. Emissions from the pyroprocessing system (including the air heater) main stack shall not exceed the emissions standards shown in the following table. Unless otherwise noted (refer to **Specific Condition C.18.**), emission limitations apply during all periods of operation (including startup, shutdown, and malfunction)

Subsection C.	Emissions	Unit No.	003, Pyroj	processing System
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Pollutant	Emission Limit <sup>1,2,6</sup>	Averaging Time	Compliance Method	Basis
Carbon Monoxide (CO)	2.67 lb/ton of clinker	20 day calling	CEMS	BACT
	362.5 lb/hr	30-day roning		
	790 parts per million by volume, dry, corrected to 7% oxygen (ppmvd @ 7% O <sub>2</sub> )	30-day rolling (CEMS) or three 1-hr runs (Method 10)	CEMS or Annual or greater Method 10	Table 8 to DDDD <sup>9</sup>
	1.8 lb/ton of clinker		CEMS	BACT
Nitrogen Ovides	243.8 lb/hr	30-day roning		
Nitrogen Oxides (NO <sub>X</sub> )	630 ppmvd @ 7% O <sub>2</sub>	30-day rolling (CEMS) or three 1-hr runs (Method 7 or 7E)	CEMS or Annual or greater Method 7 or 7E	Table 8 to DDDD <sup>3, 9</sup>
	0.185 lb/ton of clinker	Three 1 hour mura	Method 6 or 6C upon permit renewal	BACT
	25.0 lb/hr	Inree, I-nour runs		
Sulfur Dioxide (SO <sub>2</sub> )	600 ppmvd @ 7% O <sub>2</sub>	30-day rolling (CEMS) or three 1-hr runs (Method 6 or 6C)	CEMS or Annual or greater Method 6 or 6C	Table 8 to DDDD <sup>9</sup>
Volatile Organic	0.11 lb/ton of clinker		CEMS	BACT <sup>4</sup>
Compounds (VOC)	15.0 lb/hr	30-day block		
	0.153 lb/ton of clinker	Three 1-hr runs	Annual Method 5, RM-up	BACT <sup>5</sup>
	19.13 lb/hr	Three T in Tuns		
Particulate Matter	10% Opacity	6-minute block	CPMS	BACT
(PM/PM <sub>10</sub> )	Equation 1 in 40 CFR 63.1343(b)(2)	30-kiln operating day rolling of CPMS monitoring	Annual or greater Method 5, Raw mill up and raw mill down and PM CPMS <sup>11</sup>	Rule 62- 204.800(9)(f), F.A.C. <sup>9, 10, 11</sup>
Dioxins/ Furans (D/F) <sup>3</sup>	0.075 nanograms (ng)/dscm (Toxic Equivalency Basis (TEQ)) @ 7% O <sub>2</sub> <b>*or</b> 1.3 ng/dscm (Total Mass Basis) @ 7% O <sub>2</sub>	Three-run average	Annual or greater Method 23	Table 8 to DDDD
Mercury (Hg)	58 pounds per Million tons of clinker (lb/MM tons clinker)	30-day rolling	CEMS or Sorbent Trap	Rule 62- 204.800(9)(f), F.A.C. <sup>7,9</sup>
Hydrochloric Acid (HCl)	3 ppmvd @ 7% O <sub>2</sub>	30-day rolling (CEMS) or Three-run average (Method 321)	CEMS or Annual or greater Method 321	Table 8 to DDDD <sup>8, 9</sup>

#### Subsection C. Emissions Unit No. 003, Pyroprocessing System

Pollutant	Emission Limit <sup>1,2,6</sup>	Averaging Time	Compliance Method	Basis
Cadmium (Cd)	0.0014 mg/dscm @ 7% O2	Three-run average	Annual or greater Method 29	Table 8 to DDDD <sup>8</sup>
Lead (Pb)	0.014 mg/dscm @ 7% O <sub>2</sub>	Three-run average	Annual or greater Method 29	Table 8 to DDDD <sup>8</sup>

1. Oxygen monitoring is required for DDDD compliance, correction to 7% O<sub>2</sub>. DDDD pollutants, except Hg, that are measured by CMS shall not be oxygen corrected for periods of startup and shutdown pursuant to Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2875. Refer to **Specific Condition C.45** for operation requirements during periods of startup and shutdown.

2. On an annual basis, no more than 12 months following the previous annual air pollution control device inspection, the permittee shall complete the air pollution control device inspection as described in 40 CFR 60. 2706.

5. For purposes of BACT compliance, all PM emitted from the baghouse exhaust is assumed to be PM10.

- a. The PM limit in DDDD is more stringent than the BACT PM/PM<sub>10</sub> limits. Therefore, compliance with the DDDD PM limit assures compliance with the BACT PM/PM<sub>10</sub> limits.
- b. The BACT requirements do not waive or vary any applicable DDDD monitoring or record keeping requirements.
- 6. Because the kiln system exhaust gas partially vents through the coal mill (EU007) stack, compliance testing for DDDD pollutants of CO, NOx, SO<sub>2</sub>, D/F, HCl, Cd and Pb requires testing of kiln and coal mill per 40 CFR 60.2710(y)(3) (The kiln partially exhausts through the coal mill stack, but the coal mill exhaust does not exhaust to the kiln stack.). PM and Hg are addressed in footnotes 7, 10, and 11. For purposes of determining the combined emissions from kilns that exhaust kiln gases to a coal mill that exhausts through a separate stack, instead of installing a CEMS or PM CPMS on the alkali bypass stack or in-line coal mill stack, the results of the initial and subsequent performance test can be used to demonstrate compliance with the relevant emissions limit. A performance test shall be conducted on an annual basis (between 11 and 13 calendar months following the previous performance test). Note that CO, NOx and SO<sub>2</sub> are not required to be tested annually unless requested by the department since the pollutant limits are concentration-based and the coal mill stack concentration will be the same or less than the kiln concentration (See Specific Condition G.10).
- 7. See Specific Condition G.11.
- 8. If conducting stack tests to demonstrate compliance and performance tests for this pollutant for at least 2 consecutive years show that emissions are at or below this limit, permittee can skip testing according to 40 CFR 60.2720 if all of the other provisions of 40 CFR 60.2720 are met.
- 9. 40 CFR 60.2875 defines 30-day rolling average as: "the arithmetic mean of the previous 720 hours of valid operating data. Valid data excludes periods when this unit is not operating. The 720 hours should be consecutive, but not necessarily continuous if operations are intermittent." For Hg and PM, the 30-day rolling average is to be calculated as specified in Rule 62-204.800(9)(f), F.A.C.
- 10. Existing kilns that combine the clinker cooler exhaust and coal mill exhaust with the kiln exhaust, and send the combined exhaust to the PM control device (CPMS) as a single stream may meet an alternative PM emissions limit calculated using Equation 1 of §63.1343(b)(2):

$$PM_{alt} = (.0060 \text{ x } 1.65)(Q_k + Q_c + Q_{cm})/7000$$

Where:

 $PM_{alt}$  = Alternative PM emission limit for commingled sources. 0.006 = The PM exhaust concentration (gr/dscf) equivalent to 0.070 lb per ton clinker where clinker cooler and kiln exhaust gas are not combined.

<sup>3.</sup> All valid NOx hourly averages shall be included into the 30-day rolling average. Compliance with NOx BACT limit and monitoring requirements shall suffice for NOx DDDD limit and monitoring.

<sup>4.</sup> Compliance shall be demonstrated by THC CEMS. VOC emissions shall be measured as THC and expressed as "propane" for the mass emissions rate. The Permittee can demonstrate by a Method 25A test that a fraction of THC is methane if exceedance of VOC limit is indicated by THC CEMS.

#### Subsection C. Emissions Unit No. 003, Pyroprocessing System

Pollutant	Emission Limit <sup>1,2,6</sup>	Averaging Time	Compliance Method	Basis
$1.65 = \text{The cot}$ $Q_k = \text{The exh}$ $Q_c = \text{The exh}$ $Q_{cm} = \text{The exh}$ $7000 = \text{The exh}$ $7000 = \text{The cx}$ $7000 = \text{The cx}$ $11. \text{ Because the kiln exh}$ $PM \text{ requires testin}$ $per 40 \text{ CFR 63.13}$ $does not exhaust$ $and the results mu$ $G.16. \text{ for Equation}$ $and while the raw$ more frequently the demonstrated by the second se	onversion factor of ton feed per ton cl aust flow of the kiln (dscf/ton feed). aust flow of the clinker cooler (dscf/t haust flow of the coal mill (dscf/ton f onversion factor for grains (gr) per lb system exhaust gas partially vents thr- ng of kiln and coal mill. The combina 848(a)(7)(ii). The kiln partially exhau to the kiln stack. PM emissions from ust then be combined using Equation on 8. Initial testing must be conducted mill is not operating in accordance v han annual in accordance with 40 CF PM testing.	linker. con feed). feed). o. ough the coal mill (El ation of coal mill and usts through the coal n the kiln and coal mill 8 in 40 CFR 63.1349( d while the raw mill is with 40 CFR 63.1349( R 63.1350(b)(1)(iii).	U007) stack, complian kiln emissions detern nill stack, but the coa l stacks must be simu (b)(1)(viii). See <b>Spec</b> s under normal operat b)(1)(ix). PM testing PM10 compliance ca	nce testing for nines compliance l mill exhaust ltaneously tested <b>ific Condition</b> ing conditions may be required in be

{<u>Permitting Note</u> - In combination with the annual clinker production limitation of 1,186,250 tons per year, the above emissions standards (most stringent) effectively limit annual potential emissions from this unit to:

- 1,584 tons/year of CO (BACT);
- *1,068 tons/year of NO<sub>X</sub> (BACT);*
- 42 tons/year of  $PM/PM_{10}$  (DDDD)
- 110 tons/year of SO<sub>2</sub> (BACT); and;
- 66 tons/year of VOC (BACT).

*The effective limits in lb/ton clinker were calculated using the annual clinker production limit of 1,186,250 TPY.*}

[Rules 62-204.800(9)(f), 62-210.200 (Definition of Potential to Emit), 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD - Final BACT Determination and Emission Standards; Permit Nos.1190042-001-AC (PSD-FL-361), 1190042-009-AC (PSD-FL-361F), and 1190042-020-AC]

**C.35.** <u>Applicability of Emission Limits</u>. The emission limitations apply at all times the EU is operating including and not limited to startup, shutdown, or malfunction. [Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2670(a)]

#### Performance Testing

- **C.36.** <u>PM CPMS Requirements</u>. If the permittee uses a PM CPMS to demonstrate compliance, the permittee shall establish the PM CPMS operating limit and determine compliance with it according to Rule 62-204.800(9)(f)(9)(b). [Rule 62-204.800(9)(f), F.A.C.]
- C.37. Initial and Annual Performance Testing.
  - a. All performance tests shall consist of a minimum of three test runs conducted under conditions representative of normal operations.
  - b. The permittee shall document that the waste burned during the performance test is representative of the waste burned under normal operating conditions by maintaining a log of the quantity of waste burned (as required in 40 CFR 60.2740(b)(1)) and the types of waste burned during the performance test.

[Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2690]

C.38. Initial Air Pollution Control Device Inspection.

#### Subsection C. Emissions Unit No. 003, Pyroprocessing System

- a. The initial air pollution control device inspection shall be conducted within 60 days after installation of the control device and the kiln reaches the charge rate at which it will operate, but no later than 180 days after the final compliance date for meeting the amended emission limitations.
- b. Within 10 operating days following an air pollution control device inspection, all necessary repairs shall be completed unless the owner or operator obtains written approval from the Department establishing a date whereby all necessary repairs of the designated facility shall be completed.

[Rule 62-204.800(9)(f), F.A.C, referencing 40 CFR 60.2706]

*{Permitting Note: Charge rate is not applicable to the kiln system; kiln preheater feed rate and fuel firing rate records are maintained in accordance with Specific Condition C.29.}* 

#### **Continuous Compliance**

- **C.39.** <u>CO Compliance</u>. For facilities using a CEMS to demonstrate compliance with the CO emission limit, compliance may be demonstrated according to 40 CFR 60.2710(g) or periodic stack testing by Method 10 pursuant to 40 CFR 60.2710(b). [Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2710(g)]
- C.40. <u>Exemptions During Performance Testing</u>. Operation above the established maximum, below the established minimum, or outside the allowable range of the operating limits specified in Specific Condition C.34., constitutes a deviation from the permittee's DDDD operating limits, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. Operating limits are confirmed or reestablished during performance tests. [Rule 62-204.800(9)(f), F.A.C, referencing 40 CFR 60.2710(c)]
- C.41. <u>HCl and Hg Compliance</u>. If the permittee does not use an acid gas wet scrubber or dry scrubber, the permittee must determine compliance with the HCl emissions limit according to the requirements in paragraph 40 CFR 60.2710 (j)(1). The permittee shall determine compliance with the mercury emissions limit using a mercury CEMS according to Rule 62-204.800(9)(f), F.A.C. [Rule 62-204.800(9)(f), F.A.C, referencing 40 CFR 60.2710(j)]
- C.42. Interval of Annual Performance Tests.
  - a. The permittee shall conduct annual performance tests between 11 and 13 months of the previous performance test.
  - b. The permittee shall repeat the performance test if the feed stream is different than the feed streams used during any performance test used to demonstrate compliance.

[Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2715 and 40 CFR 60.2725]

- C.43. <u>Alternate Interval of Performance Testing</u>. The permittee shall conduct annual performance tests according to the schedule specified in **Specific Condition C.42a.**, with the following exceptions:
  - a. The permittee may conduct a repeat performance test at any time to establish new values for the operating limits to apply from that point forward, as specified in 40 CFR 60.2725. The Department may request a repeat performance test at any time.
  - b. The permittee shall repeat the performance test within 60 days of a process change, as defined in 40 CFR 60.2875. Process change means any of the following physical or operational changes:
    - (1) A physical change (maintenance activities excluded) to the DDDD unit which may increase the emission rate of any air pollutant to which a standard applies;
    - (2) An operational change to the DDDD unit where a new type of non-hazardous secondary material is being combusted;
    - (3) A physical change (maintenance activities excluded) to the air pollution control devices used to comply with the emission limits for the DDDD unit (e.g., replacing an electrostatic precipitator with a fabric filter); and
# Subsection C. Emissions Unit No. 003, Pyroprocessing System

- (4) An operational change to the air pollution control devices used to comply with the emission limits for the affected DDDD unit (e.g., change in the sorbent injection rate used for activated carbon injection).
- c. If the initial or any subsequent performance test for any pollutant listed in Table 8 of Subpart DDDD (Specific Condition C.34.) demonstrates that the emission level for these pollutants are equal to 75% of the applicable emission limits, the permittee is not required to conduct a performance test for the pollutant in response to a request by the Department to repeat a performance test or repeat the performance test for the pollutant for the next 2-years. The permittee shall conduct a performance test for the pollutant during the third year and no more than 37-months following the previous performance test for the pollutant. For cadmium and lead, emissions of both Cd and Pb shall be emitted at emission levels no greater than their respective emission levels equal to 75% of the applicable emission limit in **Specific Condition C.34.** to qualify for less frequent testing under 60.2720(a)(3).

*Permitting Note: The pollutants that contain a footnote "3" to Table 8 of Subpart DDDD (footnote 8 of* Specific Condition C.34) are Cd, D/F (toxic equivalency basis), HCl, and Pb. Pollutants that do not contain the footnote "3" are CO, D/F (total mass basis), Hg, NOx, PM, and SO<sub>2</sub>. The facility uses CEMS to monitor emissions of CO and NOx, and a PM CPMS to monitor emissions of PM, to demonstrate compliance with their respective BACT limits. Subpart DDDD does not require the use of CEMS to demonstrate compliance with the applicable emission limits for CO or NOx. For D/F (toxic equivalency basis), D/F (total mass basis), SO<sub>2</sub>, Hg, and HCl, performance tests for at least 2 consecutive years must show that emissions are at or below 75% of their respective emission limits in order for them to qualify for less frequent testing. For Cd and Pb, performance tests for **both** pollutants must show that emissions are at or below 75% of their emission limit for them to qualify for less frequent testing. Since the method of compliance for PM is PM CPMS, PM does not qualify for less frequent testing. If the facility chooses to use CEMS to demonstrate compliance with the Subpart DDDD limits for CO and NOx, performance tests required to certify the CEMS is required annually, and therefore do not qualify for less frequent testing. However, if the facility chooses to conduct stack testing to demonstrate compliance with the Subpart DDDD limits for CO and NOx, they qualify for less frequent testing as long as performance test for at least 2 years show that emissions are at or below 75% of their emission limit. Additionally, less frequent testing is not applicable if the facility wishes to establish new operating limits, or if the Department requests the facility to repeat a performance test, or if there is a process change (as defined in 40 CFR 60.2875). Finally, if conducting less frequent testing, and a subsequent performance test for the pollutant indicates emissions to be above 75% of the emission limit, the performance testing frequency changes back to annual, until that pollutant qualifies for less frequent testing again.}

d. If the permittee is conducting less frequent testing for a pollutant as provided above and a subsequent performance test for the pollutant indicates that the DDDD unit does not meet the emission level specified in paragraph (c) above, the permittee shall conduct annual performance tests for the pollutant according to the schedule specified in **Specific Condition C.42 a**. until the permittee qualifies for less frequent testing for that pollutant.

[Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2720(a) and 60.2875]

C.44. <u>Required Monitoring Equipment</u>.

- a. HCl. For waste-burning kilns not equipped with a wet scrubber or dry scrubber, in place of HCl testing with EPA Method 321 at 40 CFR 63, Appendix A, the permittee shall install, calibrate, maintain, and operate a CEMS for monitoring HCl emissions, as specified in 40 CFR 60.2710(j), discharged to the atmosphere and record the output of the system.
- b. NOx. To demonstrate continuous compliance with the NOx emissions limit, the facility may substitute use of a CEMS for the NOx annual performance test to demonstrate compliance with the NOx emissions

# Subsection C. Emissions Unit No. 003, Pyroprocessing System

limits and monitor the charge rate, secondary chamber temperature and reagent flow of the selective noncatalytic reduction system, if applicable.

- c. Hg. Waste-burning kilns shall install, calibrate, maintain, and operate a mercury CMS as specified in rule 62-204.800(9)(f), F.A.C.
- d. PM. Waste-burning kilns shall install, calibrate, maintain, and operate a PM CPMS as specified in rule 62-204.800(9)(f), F.A.C.

[Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2730(g) & (k) and 40 CFR 60.2710(j)]

*{Permitting Note: Charge rate is not applicable to the kiln system; kiln preheater feed rate and fuel firing rate records are maintained in accordance with Specific Condition C.29.}* 

**C.45.** <u>CEMS Data During Startup and Shutdown</u>. "CEMS data during startup and shutdown", is defined as: CEMS data collected during the periods of kiln operation that do not include normal operations. Startup means the time from when a shutdown kiln first begins firing fuel until it begins producing clinker. Startup begins when a shutdown kiln turns on the induced draft fan and begins firing fuel in the main burner. Startup ends when feed is being continuously introduced into the kiln for at least 120 minutes or when the feed rate exceeds 60 percent of the kiln design limitation rate, whichever occurs first. Shutdown means the cessation of kiln operation. Shutdown begins when feed to the kiln is halted and ends when continuous kiln rotation ceases.

{*Permitting Note: CEMS data during startup and shutdown, as defined above, are not corrected to 7% oxygen, and are measured at stack oxygen content. Also see* **Specific Condition C.35.** This correction does not apply to mercury monitoring to the alternative mass-based limit in Rule 62-204.800(9)(f), F.A.C.} [Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2875 and 60.2710]

- **C.46.** <u>Control Equipment Inspections</u>. If the permittee uses an air pollution control device to meet the emission limitations in DDDD, the permittee shall conduct an initial and annual inspection of the air pollution control device. The inspection shall include, at a minimum, the following:
  - a. Inspect air pollution control device(s) for proper operation; and
  - b. Develop a site-specific monitoring plan according to the requirements in **Specific Condition C.47**. This requirement also applies to the permittee if the permittee petitions the EPA Administrator for alternative monitoring parameters under 40 CFR 60.13(i).
  - [Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2710(k)]
- **C.47.** <u>CMS Monitoring Plan</u>. For each CMS required in 40 CFR 60.2710, the permittee shall develop and submit to the EPA Administrator for approval, a site-specific monitoring plan according to a.(1) through (6) of this condition:
  - a. The permittee shall submit this site-specific monitoring plan at least 60 days before the permittee's initial performance evaluation of the CMS:
    - (1) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (*e.g.*, on or downstream of the last control device);
    - (2) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer and the data collection and reduction systems;
    - (3) Performance evaluation procedures and acceptance criteria (e.g., calibrations);
    - (4) Ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR 60.11(d);
    - (5) Ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR 60.13; and

# Subsection C. Emissions Unit No. 003, Pyroprocessing System

- (6) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR 60.7(b), (c), (c)(1), (c)(4), (d), (e), (f) and (g).
- b. The permittee shall conduct a performance evaluation of each CMS in accordance with the site-specific monitoring plan.
- c. The permittee shall operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.

[Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2710(l)]

# **Operator Training and Qualifications**

#### C.48. Operator Training and Qualification Requirements.

- a. No CISWI unit can be operated unless a fully trained and qualified CISWI unit operator is accessible, either at the facility or can be at the facility within 1 hour. The trained and qualified CISWI unit operator may operate the CISWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified CISWI unit operators are temporarily not accessible, the permittee shall follow the procedures in §60.2665.
- b. Operator training and qualification must be obtained through a state-approved program or by completing the requirements included in paragraph c of this condition.
- c. Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the three elements described below:
  - (1) Training on the following eleven subjects:
    - (a) Environmental concerns, including types of emissions;
    - (b) Basic combustion principles, including products of combustion;
    - (c) Operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures;
    - (d) Combustion controls and monitoring;
    - (e) Operation of air pollution control equipment and factors affecting performance (if applicable);
    - (f) Inspection and maintenance of the incinerator and air pollution control devices;
    - (g) Actions to prevent and correct malfunctions or to prevent conditions that may lead to malfunctions;
    - (h) Bottom and fly ash characteristics and handling procedures;
    - (i) Applicable federal, state, and local regulations, including Occupational Safety and Health Administration workplace standards;
    - (j) Pollution prevention; and
    - (k) Waste management practices.
  - (2) An examination designed and administered by the instructor.
  - (3) Written material covering the training course topics that can serve as reference material following completion of the course.
- d. The operator training course must be completed by the later of:
  - (1) February 7, 2018;
  - (2) Six months after CISWI unit startup; and
  - (3) Six months after an employee assumes responsibility for operating the CISWI unit or assumes responsibility for supervising the operation of the CISWI unit.
- e. To maintain qualification, the permittee must complete an annual review or refresher course covering, at a minimum, the following five topics:
  - (1) Update of regulations;
  - (2) Incinerator operation, including startup and shutdown procedures, waste charging, and ash handling;
  - (3) Inspection and maintenance;
  - (4) Prevention and correction of malfunctions or conditions that may lead to malfunction; and

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(5) Discussion of operating problems encountered by attendees.

[Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2635]

# **Recordkeeping and Reporting Requirements**

- C.49. <u>Site-Specific Operator Training Documentation</u>.
  - a. Documentation shall be available at the facility and readily accessible for all CISWI unit operators that addresses the ten topics described in paragraphs a. (1) through (10) below. The permittee shall maintain this information and the training records required by paragraph c. of this condition in a manner that they can be readily accessed and are suitable for inspection upon request:
    - (1) Summary of the applicable standards under Subpart DDDD;
    - (2) Procedures for receiving, handling, and charging waste;
    - (3) Incinerator startup, shutdown, and malfunction procedures;
    - (4) Procedures for maintaining proper combustion air supply levels;
    - (5) Procedures for operating the incinerator and associated air pollution control systems within the standards established under Subpart DDDD;
    - (6) Monitoring procedures for demonstrating compliance with the incinerator operating limits;
    - (7) Reporting and recordkeeping procedures;
    - (8) The waste management plan required under 40 CFR 60.2620 through 60.2630;
    - (9) Procedures for handling ash; and
    - (10) A list of the wastes burned during the performance test.
  - b. The permittee shall establish a program for reviewing the information listed in paragraph a. above, with each incinerator operator:
    - (1) The initial review of the information listed in paragraph a. of this condition shall be conducted by the later of the following three dates:
      - (a) February 7, 2018;
      - (b) Six months after CISWI unit startup; and
      - (c) Six months after being assigned to operate the CISWI unit.
    - (2) Subsequent annual reviews of the information listed in paragraph a. above must be conducted no later than 12 months following the previous review.
  - c. The permittee shall also maintain the information specified below:
    - Records showing the names of CISWI unit operators who have completed review of the information in 40 CFR 60.2660(a) as required by 40 CFR 60.2660(b), including the date of the initial review and all subsequent annual reviews;
    - (2) Records showing the names of the CISWI operators who have completed the operator training requirements under 40 CFR 60.2635, met the criteria for qualification under 40 CFR 60.2645, and maintained or renewed their qualification under 40 CFR 60.2650 or 60.2655. Records shall include documentation of training, the dates of the initial refresher training, and the dates of their qualification and all subsequent renewals of such qualifications; and
    - (3) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

[Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2660 and 60.2665]

- C.50. <u>Records</u>. The permittee shall maintain the items (as applicable) as specified below for a period of at least 5 years:
  - a. Calendar date of each record;
  - b. Records of the data described below:
    - (1) The CISWI unit charge dates, times, weights, and hourly charge rates;

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- (2) For affected CISWI units that establish operating limits for controls other than wet scrubbers under Rule 62-204.800(9)(f), F.A.C., referencing §60.2675(d) through (g) or §60.2680, the permittee shall maintain data collected for all operating parameters used to determine compliance with the operating limits.
- (3) If a fabric filter is used to comply with the emission limitations, the permittee shall record the date, time, and duration of each alarm and the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken. The permittee shall also record the percent of operating time during each 6-month period that the alarm sounds, calculated as specified in 40 CFR 60.2675(c), referenced by Rule 62-204.800(9)(f), F.A.C.
- c. Identification of calendar dates and times for which data show a deviation from operating limits established under 40 CFR 60.2675(d) through (g) or 40 CFR 60.2680, referenced by Rule 62-204.800(9)(f), F.A.C., with a description of the deviations, reasons for such deviations, and a description of corrective actions taken.
- d. The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating limits, as applicable. Retain a copy of the complete test report including calculations.
- e. Records showing the names of CISWI unit operators who have completed review of the information in **Specific Condition C.49.a.** as required by **Specific Condition C.49.b.**, including the date of the initial review and all subsequent annual reviews.
- f. Records showing the names of the CISWI operators who have completed the operator training requirements under 40 CFR 60.2635 (Specific Condition C.48), met the criteria for qualification under 40 CFR 60.2645, and maintained or renewed their qualification under 40 CFR 60.2650 or 40 CFR 60.2655, all referenced by Rule 62-204.800(9)(f), F.A.C. Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.
- g. For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.
- h. Records of calibration of any monitoring devices as required under 40 CFR 60.2730, referenced by Rule 62-2024.800(9)(f), F.A.C.
- i. Equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment.
- j. The information listed in Specific Condition C.49.a.
- k. On a daily basis, keep a log of the quantity of waste burned and the types of waste burned (always required).
- 1. Maintain records of the annual air pollution control device inspections that are required for the kiln, any required maintenance and any repairs not completed within 10 days of an inspection or the timeframe established by the Department.
- m. For continuously monitored pollutants or parameters, the permittee shall document and keep a record of the following parameters measured using continuous monitoring systems:
  - (1) All 1-hour average concentrations of SO<sub>2</sub>, NO<sub>x</sub>, CO, Hg, PM –CPMS, HCl DDDD limit emissions. The permittee shall indicate which data are CEMS data during startup and shutdown;
  - (2) All 1-hour average percent oxygen concentrations.
- n. If the permittee chooses to stack test less frequently than annually, consistent with §60.2720(a) through (c), referenced by Rule 62-204.800(9)(f), F.A.C., the permittee shall keep annual records that document that the permittee's emissions in the previous stack test(s) were less than 75 percent of the applicable emission limit and document that there was no change in source operations including fuel composition

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and operation of air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past year.

- o. Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.
- p. Records of all required maintenance performed on the air pollution control and monitoring equipment.
- q. Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 60.11(d), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
- r. For operating units that combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to 40 CFR 241.3(b)(1), the permittee shall keep a record which documents how the secondary material meets each of the legitimacy criteria under §241.3(d)(1). If the unit combusts a fuel that has been processed from a discarded non-hazardous secondary material pursuant to §241.3(b)(4), the permittee shall keep records as to how the operations that produced the fuel satisfies the definition of processing in 40 CFR 241.2 and each of the legitimacy criteria in 40 CFR 241.3(d)(1). If the fuel received a non-waste determination pursuant to the petition process submitted under 40 CFR 241.3(c), the permittee shall keep a record that documents how the fuel satisfies the requirements of the petition process. For operating units that combust non-hazardous secondary materials as fuel pursuant to 40 CFR 241.4, the permittee shall keep records documenting that the material is a listed non-waste under 40 CFR 241.4(a). Link to 40 CFR 241.

[Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2740 (a), (b)(1)(5-6), (e-m), (n)(2-4)(6)(8-9), (q-u)]

*{Permitting Note: Charge rate is not applicable to the kiln system; kiln preheater feed rate and fuel firing rate records are maintained in accordance with Specific Condition C.29.}* 

- **C.51.** <u>Initial Test Report</u>. The initial test report shall be submitted to EPA electronically using the EPA Electronic Reporting Tool (ERT) within 60-days following the initial performance test including the information specified in Table 5 to 40 CFR 60, Subpart DDDD. [Rule 62-204.800(9)(f) referencing 40 CFR 60.2760 and Table 5 of NSPS Subpart DDDD]
- **C.52.** <u>EPA Annual Report</u>. The annual report shall be submitted to EPA electronically using the EPA ERT no later than 12 months following the submission of the initial test report and subsequent reports including the information specified Table 5 to 40 CFR 60, Subpart DDDD. [Rule 62-204.800(9)(f) F.A.C. referencing 40 CFR 60.2765, 60.2770 and Table 5 of NSPS Subpart DDDD]
- C.53. Semi-Annual Deviation Report. The emissions limitation or operating limit deviation report shall be submitted to EPA electronically using the EPA ERT by August 1<sup>st</sup> of that year for data collected during the first half of the calendar year and by February 1<sup>st</sup> of the following year for data collected during the second half of the calendar year. The deviation report shall include the information specified in Table 5 in NSPS Subpart DDDD. {*Permitting Note: The information in this report shall be included in the semi-annual monitoring report required in Specific Condition FW9.*} [Rule 62-204.800(9)(f), F.A.C. referencing 40 CFR 60.2775, 60.2780 and Table 5 of NSPS Subpart DDDD]
- C.54. <u>Report Submittal</u>.
  - a. The permittee shall submit initial, annual, deviation reports, results of each performance test and CEMS performance evaluation electronically on or before the submittal due dates specified in **Specific Conditions C.51 C.53**.
  - b. The permittee must submit initial, annual and deviation reports electronically or in paper format, postmarked on or before the submittal due dates. Beginning on April 16, 2021 or once the reporting form has been available in CEDRI for 1 year, whichever is later, the permittee must submit subsequent reports on or before the submittal dates to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/).

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Use the appropriate electronic report in CEDRI for DDDD or an alternate electronic file format consistent with the extensible markup language (XML) schema listed on the CEDRI website (<u>https://www3.epa.gov/ttn/chief/cedri/index.html</u>). When the date forms become available in CEDRI will be listed on the CEDRI website. The reports must be submitted by the deadlines specified in **Specific Conditions C.51 - C.53**, regardless of the method in which the report is submitted.

c. All documents related to compliance activities such as reports, tests, and notifications (as specified in Specific Conditions C.51 - C.53) submitted in a manner outlined in paragraph b. of this condition, shall also be submitted to the Compliance Authority listed on the cover page of this permit.

[Rules 62-4.160(15)., 62-213.440(1)(b)., & 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2795]

# Specific Condition C.55. to C.68 apply only if the kiln is subject to LLL

# **Emissions Standards**

C.55. <u>Emissions Standards</u>. Emissions from the pyroprocessing system (including the air heater) main stack shall not exceed the emissions standards shown in the following table. Unless otherwise noted (refer to **Specific Condition C.18**.), emission limitations apply during all periods of operation (including startup, shutdown, and malfunction)

Pollutant <sup>1</sup>	Emission Limit <sup>2.4</sup>	Averaging Time	Compliance Method <sup>3</sup>	Basis
CO.	2.67 lb/ton of clinker		CEMS	BACT
CO	362.5 lb/hr	30-day rolling		
NO	1.8 lb/ton of clinker	20 day ralling	CEMS	DACT
NOX	243.8 lb/hr	30-day roning		BACI
50	0.185 lb/ton of clinker	Three 1 hour mura	Method 6 or 6C, upon permit renewal	BACT
$\mathbf{SO}_2$	25.0 lb/hr	Three, 1-hour runs		
Noci	0.11 lb/ton of clinker	30-day block	CEMS	BACT
VOC	15.0 lb/hr			
THC	24 ppmvd (as propane) @7% O <sub>2</sub>	30-kiln operating day rolling	CEMS <sup>7</sup>	LLL <sup>10</sup>
	0.153 lb/ton of clinker	Three 1-hr runs	Annual Method 5, RM-up	BACT
PM/PM <sub>10</sub> <sup>8</sup>	19.13 lb/hr			
	10% Opacity	6-minute block	CPMS <sup>8</sup>	BACT
	Equation 1 in 40 CFR 63.1343(b)(2) <sup>9</sup>	30-kiln operating day rolling of CPMS monitoring <sup>5</sup>	Annual Method 5, Raw Mill-up and Raw Mill down & PM CPMS <sup>10</sup>	LLL <sup>10</sup>

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Pollutant <sup>1</sup>	Emission Limit <sup>2.4</sup>	Averaging Time	Compliance Method <sup>3</sup>	Basis
D/F <sup>11</sup>	$\begin{array}{l} 0.20 \text{ ng/dscm (TEQ)} @ 7\% \text{ O}_2 \text{ (if} \\ T > 400 \ ^\circ\text{F) or} \\ 0.40 \text{ ng/dscm (TEQ)} @ 7\% \text{ O}_2 \text{ (if} \\ T \le 400 \ ^\circ\text{F} \underline{)} \end{array}$	Three 3-hr runs	ST, 30-month Method 23 & Temperature Monitor	LLL <sup>11</sup>
Hg	55 lb/MM tons clinker <sup>4</sup>	30-kiln operating day rolling	CEMS <sup>12</sup>	LLL <sup>10</sup>
HC1	3 ppmvd @ 7% O <sub>2</sub> <sup>4</sup>	30- kiln operating day rolling	HCl or SO <sub>2</sub> CEMS <sup>13</sup>	LLL <sup>10</sup>

1. Pollutant: PM = particulate matter;  $PM_{10} = PM$  with a mean diameter of 10 micron or less;  $SO_2 =$  sulfur dioxide;  $NO_x =$  nitrogen oxides; CO = carbon monoxide; VOC = volatile organic compounds; D/F = dioxin and furans; Hg = mercury; THC = total hydrocarbons; HCl = hydrogen chloride.

2. Units of emission limits: lb/hr = pounds per hour; lb/ton-c = pounds per ton of clinker; lb/MM tons clinker = pounds per million tons of clinker; ng/dscm TEQ = nanograms per dry standard cubic meter, toxic equivalents; ppmvd = parts per million volume dry.

3. Compliance Method: ST = annual or periodic stack test; CEMS = continuous emission monitor system; SBT = sorbent trap CEMS; CPMS = continuous parameter monitoring system. Except as provided in 40 CFR 63.1348(b), performance tests are required at regular intervals for affected sources that are subject to a dioxin, organic HAP or HCl emissions limit. Performance tests required every 30 months must be completed no more than 31 calendar months after the previous performance test except where that specific pollutant is monitored using CEMS; performance tests required every 12 months must be completed no more than 13 calendar months after the previous performance test.

- 4. Oxygen monitoring is required for compliance, all concentration limits require correction to 7% O<sub>2</sub>.
- 5. Compliance shall be demonstrated by THC CEMS. VOC emissions shall be measured as total hydrocarbons (THC) and expressed as "propane" for the mass emissions rate. Permittee can demonstrate by a Method 25A test that a fraction of THC is methane if exceedance of VOC limit is indicated by THC CEMS.
- 6. See also Subsection G. (EU007) for details on required coal mill testing and monitoring.
- 7. THC monitoring is a combination of kiln CEMS and coal mill testing per 40 CFR 63.1348(b)(6)(ii). Permittee can alternatively comply by testing and monitoring for total organic HAP monitoring in accordance with the requirements of 40 CFR 63.1350(j).
- 8. For purposes of BACT compliance, all PM emitted from the baghouse exhaust is assumed to be PM10.
  - a. The PM limit in LLL are more stringent than the BACT PM/PM10 limits. Therefore, compliance with the LLL PM limits is considered compliance with the BACT PM/PM10 limits.
  - b. The BACT requirements do not waive or vary any applicable LLL monitoring or record keeping requirements.
- 9. Existing kilns that combine the clinker cooler exhaust and coal mill exhaust with the kiln exhaust, and send the combined exhaust to the PM control device (CPMS) as a single stream may meet an alternative PM emissions limit calculated using Equation 1 of §63.1343(b)(2):

$$PM_{alt} = (.0060 \text{ x } 1.65)(Q_k + Q_c + Q_{cm})/7000$$

Where:

 $PM_{alt}$  = Alternative PM emission limit for commingled sources. 0.006 = The PM exhaust concentration (gr/dscf) equivalent to 0.070 lb per ton clinker where clinker cooler and kiln exhaust gas are not combined. 1.65 = The conversion factor of ton feed per ton clinker.  $Q_k$  = The exhaust flow of the kiln (dscf/ton feed).  $Q_c$  = The exhaust flow of the clinker cooler (dscf/ton feed).

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	Pollutant <sup>1</sup>	Emission Limit <sup>2.4</sup>	Averaging Time	Compliance Method <sup>3</sup>	Basis
	$Q_{cm} = The$ 7000 - The	exhaust flow of the coal mill (dscf/t	on feed).		
10	<ol> <li>Because the kiln system exhaust gas partially vents through the coal mill (EU007) stack, compliance testing for LLL pollutants of PM, THC, Hg, and HCl requires testing of kiln and coal mill. The combination of coal mill and kiln emissions determines compliance per 40 CFR 63.1348(a)(7)(ii). (The kiln partially exhausts through the coal mill stack, but the coal mill exhaust does not exhaust to the kiln stack.) PM emissions from the kiln and coal mill stacks must be simultaneously tested and the results are then combined using Equation 8 in 40 CFR 63.1349(b)(1)(viii). PM testing may be required more frequently than annual in accordance with 40 CFR 63.1350(b)(1)(iii). See Specific Condition G.3 [40 CFR 63.1349(a) and (b)(1), and 40 CFR 63.1350(b)(1)] for details on coal mill monitoring and PM CPMS monitoring with PM testing requirements for BACT compliance. PM10 compliance can be demonstrated by PM testing.</li> </ol>				
11	<ul> <li>Dioxin/furans sha temperatures at th exceed 0.40 ng/ds to the particulate r</li> </ul>	ll not exceed 0.20 ng/dscm (TEQ) @ e inlet to the particulate matter contri cm (TEQ) @ 7% oxygen when the a natter control device is 204° C (400	7% oxygen when the rol device is greater the average of the perform ° F) or less.	ae average of the perfo nan 204° C (400° F) a nance test run temper	ormance test run nd shall not atures at the inlet
12	<ol> <li>Hg monitoring is c 63.1350(k).</li> </ol>	ombination of kiln CMS/sorbent tra	p and coal mill testing	g per 40 CFR 63.1348	8(b)(7) and
13 14	<ol> <li>HCl monitoring is combination of kiln CMS and coal mill testing per 40 CFR63.1348(b)(8) and 63.1349(b)(6).</li> <li>NESHAP pollutants compliance by CMS shall exclude all data during periods of startup and shutdown per 40 CFR 63.1343(a). Refer to Specific Condition C.63 for operation requirements during periods of startup and shutdown</li> </ol>				
{ <u>Pe</u> the	ermitting Note - In c above (most string 1,584 tons/year 1,068 tons/year	combination with the annual clin. ent) emissions standards effective • of CO; • of NO <sub>X</sub> ;	ker production limi ely limit annual pot	tation of 1,186,250 ential emissions fro	tons per year, m this unit to:
	• 42 tons/year of	PM/PM10 (LLL Limit is most stri	ingent)		
	• 110 tons/year o	of SO <sub>2</sub> ; and;			
	• 66 tons/year of	`VOC.}			
Rules 'echno ubpar	62-204.800(11), 62 ology), F.A.C.; App t LLL, Permit Nos.	-210. 200 (Definition of Potentia endix BD - Final BACT Determi 1190042-001-AC (PSD-FL-361)	ll to Emit), 62-212.4 ination and Emissio ) and 1190042-009-	400 (Best Available n Standards; NESH AC (PSD-FL-361F	Control AP 40 CFR 63 )]
xcess	Emissions				
2 <b>.56.</b> def	LLL Allowable Da	<u>ata Exclusions</u> . LLL compliance in LLL:	e data exclusions sha	all only abide by the	e following
a.	<i>Startup</i> means the Startup begins when Startup ends when feed rate exceeds 6	time from when a shutdown kiln en a shutdown kiln turns on the in feed is being continuously intro 60 percent of the kiln design limi	first begins firing f duced draft fan and duced into the kiln tation rate, whichev	uel until it begins pr begins firing fuel in for at least 120 min ver occurs first.	roducing clinker. the main burner. utes or when the
b.	Shutdown means the when continuous k	he cessation of kiln operation. Sh	nutdown begins who	en feed to the kiln is	s halted and ends
[40	40 CFR 63.1341]				

# **Monitoring Requirements**

#### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS. Subsection C. Emissions Unit No. 003, Pyroprocessing System

- C.57. <u>Baghouse Temperature Monitor</u>. A continuous temperature monitor shall be calibrated, operated, and maintained at the inlet to the baghouse for the kiln system exhaust in accordance with the D/F monitoring requirements of 40 CFR 63.1350(g). [Rule 62-204.800(11), F.A.C.; 40 CFR 63.1350; Permit No.1190042-001-AC (PSD-FL-361)]
- **C.58.** <u>Continuous Flow Rate Monitoring</u>. The permittee shall operate, calibrate, and maintain instruments for continuously measuring and recording the pollutant per mass flow rate to the atmosphere from sources subject to an emissions limitation that have a pounds per ton of clinker basis (i.e., the pyroprocessing system). The flow monitor shall be certified pursuant to 40 CFR 60, Appendix F. [Rule 62-204.800(11), F.A.C.; 40 CFR 63.1350(n), Permit No.1190042-001-AC (PSD-FL-361)]
- **C.59.** <u>Clinker Production Monitoring Requirements</u>. The permittee must determine hourly clinker production by the following:
  - a. Determine hourly clinker production rate by one of two methods:
    - Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of clinker produced. The system of measuring hourly clinker production must be maintained within ±5 percent accuracy, or
    - (2) Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of feed to the kiln. The system of measuring feed must be maintained within ±5 percent accuracy. Calculate the hourly clinker production rate using a kiln-specific feed to clinker ratio based on reconciled clinker production determined for accounting purposes and recorded feed rates. Update this ratio monthly. Note that if this ratio changes at clinker reconciliation, the permittee must use the new ratio going forward, but the permittee does not have to retroactively change clinker production rates previously estimated.
  - b. Determine, record, and maintain a record of the accuracy of the system of measuring hourly clinker production (or feed mass flow if applicable) before initial use (for new sources) or by the effective compliance date of LLL (for existing sources). During each quarter of source operation, the permittee must determine, record, and maintain a record of the ongoing accuracy of the system of measuring hourly clinker production (or feed mass flow).
  - c. If the permittee measures clinker production directly, record the daily clinker production rates; if the permittee measures the kiln feed rates and calculates clinker production, record the hourly kiln feed and clinker production rates.
  - d. Develop an emissions monitoring plan in accordance with paragraphs (p)(1) through (p)(4) of 40 CFR 63.1350.

[40 CFR 63.1350(d)]

- **C.60.** <u>Operation and Maintenance Plan Requirements</u>. The permittee must prepare, for each affected source subject to the provisions of LLL, a written operations and maintenance plan. The plan must be submitted to the Compliance Authority and must include the following information:
  - a. Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emissions limits and operating limits, including fugitive dust control measures for open clinker piles of 40 CFR 63.1343, 63.1345, and 63.1346. The permittee's operations and maintenance plan must address periods of startup and shutdown.
  - b. Corrective actions to be taken when required by paragraph 40 CFR 63.1350(f)(3);
  - c. Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.

Failure to comply with any provision of the operations and maintenance plan developed in accordance with this condition is a violation of the standard. [40 CFR 63.1347]

# Subsection C. Emissions Unit No. 003, Pyroprocessing System

*{Permitting Note - The permittee must submit an operation and maintenance plan in accordance with this Condition with the application for renewal of the Title V permit. Refer to Appendix OM - Operation and Maintenance Plan}* 

C.61. Operation and Maintenance (O&M) Plan. The permittee shall operate, maintain and correct any malfunctions to emission units, monitoring systems, and control equipment in accordance with the attached Operation and Maintenance (O&M) Plan (Appendix OM - Operation and Maintenance Plan). [40 CFR 63.1347]

#### C.62. <u>PM CPMS Monitoring Requirements</u>

- a. The permittee has conducted an initial performance test using Method 5 or Method 5I to establish the PM operating parameter limits. The permittee shall use the PM CPMS to demonstrate continuous compliance with this established operating limit.
- b. The permittee shall repeat the Method 5 or Method 5I performance test annually and reassess and adjust the CPMS site-specific operating limit in accordance with the results of the performance test using the procedures in 40 CFR 63.1349(b)(1) (i) through (vi) of LLL.
- c. The permittee shall repeat the Method 5 or Method 5I test if the analytical range of the PM CPMS instrument is changed, or if the instrument itself is replaced, or any principal analytical component of the instrument that would alter the relationship of output signal to in-stack PM concentration is replaced.

To determine continuous compliance, the permittee shall use the PM CPMS output data for all periods when the process is operating, and the PM CPMS is not out-of-control. The permittee shall demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit on a 30 operating day rolling average basis, updated at the end of each new kiln operating day.

If the 30 operating day PM CPMS average value is higher than the established operating parameter limit, the permittee shall:

- d. Within 48 hours of the exceedance, visually inspect the air pollution control device;
- e. If inspection of the air pollution control device identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and,
- f. Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit. Within 45 days verify or re-establish the PM CPMS operating limit.

PM CPMS exceedances leading to more than four required performance tests in a 12-month process operating period (rolling monthly) constitute a presumptive violation of 40 CFR 63.1349 and 1350. [Rule 62-204.800(11), F.A.C., 40 CFR 63.1349 and 63.1350(b)]

#### C.63. <u>CEMS Certification Requirements</u>.

- a. *THC CEMS (also as a surrogate for VOCs monitoring required by LLL).* The total hydrocarbon continuous emissions monitoring system (THC CEMS) (which is also used for VOC BACT monitoring) as VOC is measured as total hydrocarbons) shall meet the requirements of 40 CFR 63.1349 and 63.1350.
- b. *Hg CEMS/sorbent trap (LLL)*. The mercury continuous emissions monitoring system (Hg-CEMS) shall meet the requirements in Performance Specification 12A (PS-12A) or 12B. The owner or operator shall meet the requirements of 40 CFR 63.1349 and 63.1350.
- c. *PM CPMS (LLL)*. The PM CPMS shall meet the requirements of 40 CFR 63.1350(b).
- d. *HCl CEMS (LLL)*. The HCl CEMS shall meet the requirements of 40 CFR 63.1349 and 63.1350. [40 CFR 63.1349 and 63.1350; Permit No. 1190042-001-AC (PSD-FL-361)]

# Subsection C. Emissions Unit No. 003, Pyroprocessing System

- **C.64.** <u>Operations During NESHAP Startup and Shutdown</u>. During periods of startup and shutdown as defined in **Specific Condition C.56** and 40 CFR 63.1341, the permittee shall meet the following requirements:
  - a. During startup the permittee must use any one or combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, synthesis gas (syngas), and ultra-low sulfur diesel (ULSD) until the kiln reaches a temperature of 1,200 degrees Fahrenheit.
  - b. Combustion of the primary kiln fuel (i.e., coal), may commence once the kiln temperature reaches 1,200 degrees Fahrenheit.
  - c. Alternative fuels shall only be fired after the kiln has achieved normal operation, temperatures and production, that is, not during startup. (See **Specific Condition H.7**)
  - d. All dry sorbent and activated carbon injection systems that control hazardous air pollutants must be turned on and be properly operating at the time the gas stream at the inlet to the baghouse reaches 300 degrees Fahrenheit (five-minute average) during startup. Temperature of the gas stream is to be measured at the inlet of the baghouse every minute. Such injection systems can be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.
  - e. The permittee must keep records of the date, time and duration of each startup or shutdown period for any affected source that is subject to a standard during startup or shutdown that differs from the standard applicable at other times, and the quantity of feed and fuel used during the startup or shutdown period.
  - [40 CFR 63.1346(g) and Kiln Operation and Maintenance Plan (Appendix OM)]

# **Testing and Compliance Requirements**

- C.65. <u>Annual PM Compliance Tests Required</u>. During each calendar year (January 1<sup>st</sup> to December 31<sup>st</sup>), this emission unit shall be tested to demonstrate compliance with the emissions standards for PM. The permittee shall simultaneously test the kiln and coal mill stacks to determine an emissions limit per 40 CFR 63.1343(b)2 and then set the PM CPMS 30-kiln operating day limit using 63.1349(b)1. Coal Mill emissions must be accounted for by 40 CFR 63.1349(b)(1)(viii). See also Subsection G (EU-007). [Rules 62-297.310(8)(a) and (b), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361); 40 CFR 63 Subpart LLL]
- C.66. <u>Continuous Compliance</u>. For purposes of Subpart LLL continuous compliance with the PM, Hg, and HCl standards of 40 CFR 63.1343 shall be demonstrated using data collected from PM, Hg, and HCl CEMS/CPMS in accordance with 40 CFR 63.1348(b), and 40 CFR 63.1350(b), (k) & (l). Coal mill emissions must be accounted for by 40 CFR 63.1349(b)(4)(iii). See also Subsection G. [40 CFR 63.1348(b), 63.1350(b), (k), (l), and 63.1349(b)(4)(iii)]
- C.67. <u>D/F Compliance Testing</u>. D/F tests shall be conducted in accordance with the provisions of 40 CFR 63.1348(a)(3) and 63.1349(b)(3). Frequency of testing shall be in accordance with the requirements of 40 CFR 63.1348(c) and 63.1349(c) (i.e., every 30 months, or upon making a change in operations that may adversely affect compliance with the standard (see Specific Condition C.68). [Rules 62-297.310(8)(a) and (b), F.A.C.; 40 CFR 60.8; 40 CFR 63.1348 and 1349(b), Permit No.1190042-001-AC (PSD-FL-361)]
- C.68. <u>Supplemental Dioxin/Furan and PM/PM<sub>10</sub> Compliance Tests</u>. The owner or operator shall notify the Compliance Authority prior to initiating any significant change in the feed or fuel used in the most recent compliant performance test for dioxin/furan or PM/PM<sub>10</sub>. For purposes of this condition, significant means any of the following:
  - a. a physical or chemical change in the feed or fuel;
  - b. the use of a raw material not previously used;
  - c. a change in the LOI of the coal ash outside the normal range of monitored parameters;
  - d. a change between non-beneficiated coal ash and beneficiated coal ash.

# Subsection C. Emissions Unit No. 003, Pyroprocessing System

Based on the information provided, the Compliance Authority will determine if performance testing pursuant to 40 CFR 63.1349 will be required for the new feed or fuel. A significant change shall not include switching to a feed/fuel mix for which the permittee already tested in compliance with the dioxin/furan and PM/PM10 emission limits. [Permit No.1190042-001-AC (PSD-FL-361)]

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# Subsection D. Emissions Unit No. 004, Clinker and Additives Storage and Handling

#### The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
004	Clinker and Additives Storage and Handling

This emissions unit consists of clinker handling from clinker cooler to clinker silo discharge, as well as, clinker and additive (limestone, gypsum and other materials) handling from storage to the finish mill.

The following emissions points (EP) in the raw materials conveying, storage, and processing are controlled by fabric filter baghouses.

Baghouse / EP ID	Emissions Point (EP) Description	<b>Baghouse Description</b>
L-03	Clinker Cooler Discharge	CAMCORP Model 15TR12x30 baghouse with design exhaust air flow rate of 3,000 acfm
L-06	Clinker Transfer to Clinker Silo #1	CAMCORP Model 8TR12x64 baghouse with design exhaust air flow rate of 6,500 acfm
M-08	Clinker Transfer to Clinker Silo #2	CAMCORP Model 6TR12x42 baghouse with design exhaust air flow rate of 4,000 acfm
DC-1	Clinker Transfer from Clinker Silo #1	DONALDSON four filter baghouse with design exhaust air flow rate of 353 acfm
DC-2	Clinker Transfer from Clinker Silo # 2	DONALDSON four filter baghouse with design exhaust air flow rate of 353 acfm

{*Permitting Note: This emissions unit is regulated under 40 CFR 63, Subpart A (General Provisions) and 40 CFR 63, Subpart LLL (National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Portland Cement Manufacturing Industry) adopted by reference in Rule 62-204.800(8)(b), F.A.C.*}

# Control Technology

**D.1.** <u>Baghouse Controls</u>. Each emissions point (EP) identified above for the clinker and additives storage and handling operations shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a PM emission limit of 0.01 grains/dscf and a PM<sub>10</sub> emission limit of 0.007 grains/dscf. [Rule 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD - Final BACT Determination and Emission Standards; Permit No.1190042-001-AC (PSD-FL-361)]

# **Emission Limitations and Standards**

- D.2. <u>Visible Emissions (VE) Limitations</u>. Visible emissions shall not exceed the following limits.
  - a. Visible emissions are limited to 5% opacity from each of the emissions points (EP) shown in the EP table above and controlled by a baghouse.
  - b. Visible emissions are limited to 10% opacity from any other emissions point associated with this emissions unit and <u>not</u> controlled by a baghouse.

{The baghouses are designed to control PM emissions to 0.01 grains/dry standard cubic foot (gr/dscf) and PM<sub>10</sub> emissions to 0.007 gr/dscf. The 5% opacity limitation is consistent with this design and provides reasonable assurance that annual emissions of PM/PM<sub>10</sub> for all emission points in this emission unit system will be less than 4 TPY. Exceedance of the 5% opacity limit shall be deemed an exceedance of this permit condition and not necessarily an exceedance of the 10% opacity VE limitations given in NSPS 40 CFR 60 Subpart F or NESHAP 40 CFR 63 Subpart LLL.}

# Subsection D. Emissions Unit No. 004, Clinker and Additives Storage and Handling

[Rules 62-204.800(8) and (11), and 62-212.400 (Best Available Control Technology (BACT)), F.A.C.; Appendix BD – Final BACT Determination and Emission Standards; 40 CFR 60.62(c); 40 CFR 63.1345; Permit No. 1190042-001-AC (PSD-FL-361)]

#### **Monitoring of Operations**

- **D.3.** <u>Opacity Monitoring Requirements</u>. Each affected emissions point (EP) subject to an opacity standard shall be periodically monitored using the procedures described in paragraphs "a" through "g" of this condition to ensure compliance with the requirements of **Specific Condition D.2.b**.
  - a. The permittee must conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of 40 CFR 60, Appendix A. The performance test must be conducted while the affected source is in operation.
  - b. If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of performance testing from monthly to semiannually for that affected source. If visible emissions are observed during any semi-annual test, the permittee must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.
  - c. If no visible emissions are observed during the semi-annual test for any affected source, the permittee may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the owner or operator must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.
  - d. If visible emissions are observed during any Method 22 performance test, the permittee must conduct 30 minutes of opacity observations, recorded at 15-second intervals in accordance with Method 9 in accordance with 40 CFR 60, Appendix A. The Method 9 performance test must begin within 1 hour of any observation of visible emissions.
  - e. The requirement to conduct Method 22 visible emissions monitoring under this paragraph does not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. "Totally enclosed conveying system transfer point" must mean a conveying system transfer point that is enclosed on all sides, top, and bottom. The enclosures for these transfer points must be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.
  - f. If any partially enclosed or unenclosed conveying system transfer point is located in a building, the permittee must conduct a Method 22, according to the requirements of paragraphs (a) through (d) of this condition for each such conveying system transfer point located within the building, or for the building itself, according to 63.1350(f)(1)(vii).
  - g. If visible emissions from a building are monitored, the requirements of paragraphs (a) through (d) of this condition apply to the monitoring of the building, and the permittee must test visible emissions from each side, roof, and vent of the building for at least 10 minutes.

[Rule 62-204.800(11), F.A.C., 40 CFR 63.1347, 40 CFR 63.1350(f), Permit No.1190042-001-AC (PSD-FL-361)]

# **Test Methods and Procedures**

- **D.4.** <u>Annual Compliance Tests Required</u>. During each calendar year (January 1<sup>st</sup> to December 31<sup>st</sup>), the baghouse exhaust vents for the emission points (EP) shown in the EP table above shall <u>each</u> be tested for visible emissions. [Rule 62-297.310(8), F.A.C.]
- **D.5.** <u>Test Methods</u>. When required, tests shall be performed in accordance with the following reference methods

#### Subsection D. Emissions Unit No. 004, Clinker and Additives Storage and Handling

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources
22	Visual Determination of Fugitive Emissions From Material Sources (for opacity periodic monitoring)

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-297.401, and 62-204.800(11) F.A.C.; 40 CFR 63.1350(f); Permit No.1190042-001-AC (PSD-FL-361)]

**D.6.** <u>Common Testing Requirements</u>. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

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# Subsection E. Emissions Unit No. 005, Finish Mill (Cement Grinding)

#### The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
005	Finish Mill (Cement Grinding)

This emissions unit consists of a cement finish (grinding) mill in a closed circuit with a high efficiency air separator and cyclones capable of processing approximately 159 tons per hour of cement. Other equipment includes associated enclosed conveyors, bucket elevators, and belts.

The following emissions points (EP) in the finish mill/cement grinding process are controlled by fabric filter baghouses.

Baghouse/ EP ID	Emissions Point (EP) Description	Baghouse Description
N-93	Finish Mill Air Separator	CAMCORP Model 110TR12x1760 baghouse with design exhaust air flow rate of 150,000 acfm
N-94	Finish Mill Sweep (Sepol vent)	CAMCORP Model 29TR12x464 baghouse with design exhaust air flow rate of 40,000 acfm

{*Permitting Note: This emissions unit is regulated under 40 CFR 63, Subpart A (General Provisions) and 40 CFR 63, Subpart LLL (National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Portland Cement Manufacturing Industry) adopted by reference in Rule 62-204.800(8)(b), F.A.C.*}

# Control Technology

E.1. <u>Baghouse Controls</u>. Each emissions point (EP) identified above for the finish mill grinding operations shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a PM design specification of 0.01 grains/dscf and a PM<sub>10</sub> design specification of 0.007 grains/dscf. [Rule 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD - Final BACT Determination and Emission Standards; Permit No.1190042-001-AC (PSD-FL-361)]

# **Emission Limitations and Standards**

- E.2. Particulate Matter (PM/PM<sub>10</sub>) Standard for Finish Mill Air Separator (EP ID N-93). Particulate matter (PM/PM<sub>10</sub>) emissions from the finish mill air separator baghouse (Emission Point (EP) ID N-93) shall not exceed 0.007 grains per dscf of exhaust as determined by EPA Method 5. All PM emitted from the baghouse exhaust is assumed to be PM<sub>10</sub>. The BACT requirements do not waive or vary any applicable NESHAP monitoring or record keeping requirements. [Rules 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD Final BACT Determination and Emission Standards; Permit No.1190042-001-AC (PSD-FL-361)]
- E.3. <u>Visible Emissions (VE) Limitations</u>. Visible emissions from the finish mill air separator baghouse (EP ID N-93) and from the finish mill sweep baghouse (EP ID N-94) are limited to 5% opacity. [Rule 62-212.400(BACT), F.A.C.; Appendix BD Final BACT Determination and Emission Standards; Permit No.1190042-001-AC (PSD-FL-361)]

*{Permitting Note: The above limits are more stringent and suffice for LLL VE limit pursuant to 40 CFR 63.1345}* 

# **Monitoring of Operations**

**E.4.** <u>Opacity Monitoring Requirements</u>. For Emissions Point (EP) ID N-93 and EP ID N-94, the permittee must monitor opacity by conducting daily visible emissions observations in accordance with the procedures of

#### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS. Subsection E. Emissions Unit No. 005, Finish Mill (Cement Grinding)

Method 22 of Appendix A-7 of 40 CFR Part 60. The duration of the Method 22 performance test must be 6 minutes, to ensure compliance with the requirements of **Specific Condition E.3**. A Baghouse Leak Detection System (BLDS) can be used in lieu of daily Method 22 performance tests.

- a. Within 24 hours of the end of the Method 22 performance test in which visible emissions were observed, the permittee must conduct a follow up Method 22 performance test of each stack from which visible emissions were observed during the previous Method 22 performance test.
- b. If visible emissions are observed during the follow-up Method 22 performance test required by paragraph (a) of this condition from any stack from which visible emissions were observed during the previous Method 22 performance test required by paragraph (a), the permittee must then conduct an opacity test of each stack from which emissions were observed during the follow up Method 22 performance test in accordance with Method 9 of Appendix A-4 of 40 CFR 60. The duration of the Method 9 test must be 30 minutes.

[Rule 62-204.800(11), F.A.C., 40 CFR 63.1347, 40 CFR 63 1350(f)(2), (3), & (4), Permit No.1190042-001-AC (PSD-FL-361)]

#### **Test Methods and Procedures**

- E.5. <u>Annual Compliance Tests Required</u>. During each calendar year (January 1<sup>st</sup> to December 31<sup>st</sup>), the baghouse exhaust vents for the emission points (EP) shown in the EP table above shall <u>each</u> be tested to demonstrate compliance with the visible emissions standards of **Specific Condition E.3**. [Rule 62-297.310(8), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)].
- E.6. <u>Compliance Tests Prior To Renewal</u>. The exhaust vent for the finish mill air separator baghouse (EP ID N-93) shall be tested for particulate matter (PM) emissions to demonstrate compliance with the PM emission limitation of **Specific Condition E.2** prior to submittal of a permit renewal application. [Rule 62-297.310(8), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]

*{Permitting Note: This test which is only required once during the term of a permit prior to obtaining a renewed permit should be performed roughly five years from the previous test.}* 

**E.7.** <u>Test Methods</u>. When required, tests shall be performed in accordance with the following reference methods:

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Method for Determining Particulate Matter Emissions The minimum sample volume shall be 30 dry standard cubic feet
9	Visual Determination of the Opacity of Emissions from Stationary Sources
22	Visual Determination of Fugitive Emissions From Material Sources (for opacity periodic monitoring)

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rule 62-297.401, F.A.C., 40 CFR 63.1350; Permit No.1190042-001-AC (PSD-FL-361)]

**E.8.** <u>Common Testing Requirements</u>. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

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# Subsection F. Emissions Unit No. 006, Cement Handling, Storage, Packing, and Loadout

#### The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
006	Cement Handling, Storage, Packing, and Loadout

This emission unit includes cement conveyance to silos, cement silos, loadout to trucks from silos, and cement bagging operations. Equipment includes two concrete cement silos with rotary shut-off valves, flow control valve, and airslides. The cement bagging operation includes a screen, surge hopper, bucket elevator and packer. Operation is estimated to be nominally 500 tons per hour of cement to truck loadout and/or bagging operation.

The following emissions points (EP) in the Cement Handling, Storage, Packing, and Loadout processes are controlled by fabric filter baghouses.

Baghouse/ EP ID	Emissions Point (EP) Description	Baghouse Description
N-91	Cement Transfer from Finish Mill	CAMCORP Model 9TR12x81 baghouse with design exhaust air flow rate of 8,000 acfm
Q-25	Cement Silos #1, 2, 3, and 5	CAMCORP Model 11TR12x121 baghouse with design exhaust air flow rate of 12,000 acfm
Q-26	Cement Silo #4	CAMCORP Model 11TR12x121 baghouse with design exhaust air flow rate of 12,000 acfm
Q-14	Truck Loadout #1	CAMCORP Model 7TR8x49 baghouse with design exhaust air flow rate of 3,000 acfm
Q-17	Truck Loadout #2	CAMCORP Model 7TR8x49 baghouse with design exhaust air flow rate of 3,000 acfm
R-12A	Packing (Bagging) Plant	CAMCORP Model 11TR12x121 baghouse with design exhaust air flow rate of 12,000 acfm

{*Permitting Note: This emissions unit is regulated under 40 CFR 63, Subpart A (General Provisions) and 40 CFR 63, Subpart LLL (National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Portland Cement Manufacturing Industry) adopted by reference in Rule 62-204.800(8)(b), F.A.C.*}

# Control Technology

**F.1.** <u>Baghouse Controls</u>. Each emissions point (EP) identified above for cement handling, storage, packing and loadout operations shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a PM design specification of 0.01 grains/dscf and a PM<sub>10</sub> design specification of 0.007 gr/dscf. [Rule 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD - Final BACT Determination and Emission Standards; Permit No.1190042-001-AC (PSD-FL-361)]

# **Emission Limitations and Standards**

- F.2. <u>VE Limitations</u>. Visible emissions shall not exceed the following limits:
  - a. Visible emissions are limited to 5% opacity from each of the emissions points (EP) shown in the EP table above controlled by a baghouse.

# Subsection F. Emissions Unit No. 006, Cement Handling, Storage, Packing, and Loadout

b. Visible emissions are limited to 10% opacity from any other emissions point associated with this emissions unit and <u>not</u> controlled by a baghouse.

[Rules 62-204.800(8) & (11), and 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD – Final BACT Determination and Emission Standards; 40 CFR 60.62(c); 40 CFR 63.1343; Permit No.1190042-001-AC (PSD-FL-361)]

#### **Monitoring of Operations**

- **F.3.** <u>Opacity Monitoring Requirements</u>. Each affected emissions point (EP) subject to an opacity standard shall be periodically monitored using the procedures described in paragraphs "a" through "f" of this condition to ensure compliance with the requirements of **Specific Condition F.2.a**.
  - a. The permittee must conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of 40 CFR 60, Appendix A. The performance test must be conducted while the affected source is in operation.
  - b. If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the permittee must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.
  - c. If no visible emissions are observed during the semi-annual test for any affected source, the permittee may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the owner or operator must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.
  - d. If visible emissions are observed during any Method 22 performance test, the permittee must conduct 30 minutes of opacity observations, recorded at 15-second intervals in accordance with Method 9 in accordance with 40 CFR 60, Appendix A. The Method 9 performance test must begin within 1 hour of any observation of visible emissions.
  - e. The requirement to conduct Method 22 visible emissions monitoring under this paragraph does not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. "Totally enclosed conveying system transfer point" must mean a conveying system transfer point that is enclosed on all sides, top, and bottom. The enclosures for these transfer points must be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.
  - f. If any partially enclosed or unenclosed conveying system transfer point is located in a building, the permittee must conduct a Method 22, according to the requirements of paragraphs (a) through (d) of this condition for each such conveying system transfer point located within the building, or for the building itself, according to 63 1350(f)(1)(vii).

[Rule 62-204.800(11), F.A.C., Permit No.1190042-001-AC (PSD-FL-361), 40 CFR 63 1350(f)]

#### **Test Methods and Procedures**

**F.4.** <u>Annual Compliance Tests Required</u>. During each calendar year (January 1<sup>st</sup> to December 31<sup>st</sup>), the baghouse exhaust vents for the emission points (EP) shown in the EP table above shall <u>each</u> be tested to demonstrate compliance with the visible emissions standards of **Specific Condition F.2**. [Rule 62-297.310(8), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]

{Permitting Note: As of the issuance of this permit, all EPs in this EU are controlled with a baghouse.}

**F.5.** <u>Test Methods</u>. When required, tests shall be performed in accordance with the following reference methods:

# Subsection F. Emissions Unit No. 006, Cement Handling, Storage, Packing, and Loadout

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources
22	Visual Determination of Fugitive Emissions From Material Sources (for opacity periodic monitoring)

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rule 62-297.401, F.A.C., 40 CFR 63.1350; Permit No.1190042-001-AC (PSD-FL-361)]

**F.6.** <u>Common Testing Requirements</u>. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

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# Subsection G. Emissions Unit No. 007, Coal and Petroleum Coke Grinding System

#### The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
007	Coal and Petroleum Coke Grinding System

The coal and petroleum coke grinding system includes coal/petroleum coke handling from truck and railcar unloading to the pulverized fuel bin. Equipment includes a coal/petroleum coke grinding mill with thermal dryer, storage bins, and associated conveyor systems. Clinker cooler gas is used for drying.

The following emissions points (EP) in the coal and petroleum coke grinding system are controlled by fabric filter baghouses.

Baghouse/ EP ID	Emissions Point (EP) Description	Baghouse Description
S-22	Coal/Petroleum Coke Mill (including Thermal Dryer)	Two CAMCORP Model 12PRW233 baghouse separators, each with design exhaust air flow rate of 17,500 acfm (combined common exhaust stack)
S-26	Coal/Petroleum Coke Bin	CAMCORP Model 8PRT19 baghouse with design exhaust air flow rate of 800 acfm (ancillary de-dusting)

{Permitting Note: This emissions unit (Baghouse/ EP ID S-22) is subject to 40 CFR 60 Subpart A (General Provisions) and 40 CFR 60 Subpart Y -Standards of Performance for Coal Preparation Plants. For the purposes of Subpart Y applicability, this emissions unit commenced construction on or before December 3, 2007 and is considered an "existing" source (built prior to April 28, 2009).

As with the EU 003 main baghouse EP, EP S-22 is also regulated under either DDDD or LLL. For the purposes of LLL, this facility is considered an as an "existing" source (built prior to May 6, 2009). For the purposes of DDDD, the kiln and related emissions from EP S-22 are considered an "existing" source. Because the kiln EU-003 vents partially to the coal mill (S-22), the coal mill emissions are presumptively subject to all emissions limits of DDDD or LLL, as applicable. This subsection of the permit therefore includes three sets of conditions to address the separate requirements. Specific Conditions G.1 through G.8 apply regardless of applicability of DDDD or LLL. Specific Conditions G.9 through G.11. apply only when the kiln is subject to DDDD. Specific Conditions G.13 through G.17. apply only when the kiln is subject to LLL. (See Specific Condition G.3.).

<u>PSD BACT Determination</u> - A determination of the BACT was made for particulate matter ( $PM/PM_{10}$ ). To satisfy some of the BACT requirements for this emission unit the visible emissions limits act as surrogate standards for PM. (Appendix BD – Final BACT Determination and Emission Standards)

# Specific Conditions G.1 – G.8 apply to this EU at all times, regardless of whether the EU is regulated under DDDD or LLL.

**G.1.** <u>Process Rate Limitation</u>. The coal/petroleum coke grinding mill may process up to 18.5 tons per hour based on a 30-day rolling average of coal/petroleum coke. No more than 134,904 tons of coal/petroleum coke shall be processed through the grinding mill during any consecutive 12-month period. [Rule 62-210. 200 (Definition of Potential to Emit), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361)]

# Control Technology

**G.2.** <u>Baghouse Controls</u>. Each emissions point identified above for the coal and petroleum coke grinding system shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a PM design specification of 0.01 grains/dscf and a PM<sub>10</sub> design specification of 0.007

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gr/dscf. [Rule 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD – Final BACT Determination and Emission Standards; Permit No.1190042-001-AC (PSD-FL-361)]

#### **Emission Limitations and Standards**

G.3. <u>Particulate Matter (PM/PM<sub>10</sub>) Standard</u>. PM/PM<sub>10</sub> emissions from the thermal dryer (Emission Point (EP) ID S-22) shall not exceed 0.007 grains per dry standard cubic feet (gr/dscf) of exhaust as determined by EPA Method 5. [Rules 62-204.800(8), and 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD – Final BACT Determination and Emission Standards; 40 CFR 60.252; and Permit No.1190042-001-AC (PSD-FL-361)]

{Permitting Note: The PM limit for EP S-22 is effectively 0.006 gr/dscf as determined by 40 CFR 63.1343(b)(2), Equation 1. As such, compliance with this limit provides assurance of compliance with the PM limit of 40 CFR 60, Subpart Y and the BACT PM emission limit. The BACT determination PM limit (0.007 gr/dscf) is more stringent than the applicable NSPS Subpart Y 40 CFR 60.252(a)(1) PM limit of 0.031 gr/dscfm. (See Specific Condition G.16.)}

- G.4. <u>Visible Emissions (VE) Limitations</u>. Visible emissions shall not exceed the following limits.
  - a. Visible emissions from emissions point (EP S-26) controlled by a baghouse shall not exceed 5% opacity.
  - b. Visible emissions from all coal/petcoke processing and conveying equipment, coal/petcoke storage systems, or coal/petcoke transfer and loading systems <u>not</u> controlled by a baghouse, shall not exceed 10% opacity.

[Rules 62-204.800(8), and 62-212.400 (Best Available Control Technology), F.A.C.; Appendix BD – Final BACT Determination and Emission Standards; 40 CFR 60.252; and Permit No.1190042-001-AC (PSD-FL-361)]

{Permitting Note\_- These BACT determination VE opacity limits are more stringent than the applicable NSPS Subpart Y 40 CFR 60.252(a)(2) and 60.254(a) VE limits of 20% opacity. Demonstration of compliance with the BACT VE limitations will also be considered as demonstration of compliance with NSPS 40 CFR 60 Subpart Y limit.)

#### **Continuous Monitoring Requirements**

**G.5.** <u>Thermal Dryer Exit Temperature</u>. A monitoring device for the continuous measurement of the temperature of the gas stream at the exit of the thermal dryer shall be installed, calibrated, maintained, and continuously operated to measure the temperature of the gas stream in accordance with the requirements of 40 CFR 60 Subpart Y. [Rule 62-204.800(8), F.A.C.; 40 CFR 60.256(a)]

#### **Testing Requirements**

- **G.6.** <u>Annual Compliance Tests Required</u>. During each calendar year (January 1<sup>st</sup> to December 31<sup>st</sup>), the baghouse exhaust vents for emission point S-26 shall be tested for visible emissions. [Rule 62-297.310(8)(a), F.A.C.]
- **G.7.** <u>Common Testing Requirements</u>. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

#### **Recordkeeping and Reporting Requirements**

- **G.8.** <u>Coal/Petroleum Coke Grinding Mill Process Rate Records</u>. In order to document compliance with the coal/petroleum coke grinding mill process rate limitations of **Specific Condition G.1**, the permittee shall maintain the following records of the monthly grinding mill processing rate:
  - a. the month of the record;

# Subsection G. Emissions Unit No. 007, Coal and Petroleum Coke Grinding System

- b. the total quantity of coal and petroleum coke processed through the grinding mill for the month (tons coal/petroleum coke per month);
- c. the total hours of operation of the grinding mill for the month (hours/month) (operation of the grinding mill is defined as periods of operation when coal or petroleum coke is being processed (ground) by the mill);
- d. the average grinding mill coal/petroleum coke processing rate (tons/hour) for the month (based on b. and c. above); and
- e. the total tons of coal and petroleum processed through the grinding mill in the most recent 12 consecutive month period (tons coal/petroleum coke per 12 consecutive month period).

The above reports shall be recorded and available for inspection no later than 10 days following the end of the month. [Rule 62-213.440(1)(b), F.A.C.]

#### Specific Conditions G.9 – G.11 apply to this EU only when the Kiln is regulated under DDDD.

**G.9.** <u>Hg and PM Emissions</u>. When there is an in-line coal mill that exhausts emissions through a separate stack, the combined emissions are subject to the emission limits applicable to the waste-burning kilns. For Hg and PM, the unit may comply with the alternative production-based emission limits specified in **Specific Condition C.34.** [Rule 62-204.800(9)(f)5a., F.A.C. and Permit No. 1190042-020-AC]

#### **Compliance Testing**

**G.10.** <u>Compliance Testing</u>. Because the kiln system exhaust gas partially vents through the coal mill stack, compliance testing for DDDD pollutants of CO, NOx, SO<sub>2</sub>, HCl, D/F, Cd, and Pb requires testing of kiln and coal mill. For purposes of determining the combined emissions from kilns that exhaust kiln gases to the coal mill, that exhausts through a separate stack, instead of installing a CEMS on the in-line coal mill, the results of the initial and subsequent performance test can be used to demonstrate compliance with the relevant emissions limit. A performance test shall be conducted on an annual basis between 11 and 13 months following the previous performance test. [Rule 62-204.800(9)(f), F.A.C., referencing 40 CFR 60.2710(y)(3)]

{Permitting Note: Based on discussions between the Department and the EPA, CO, NOx and SO<sub>2</sub>, are not required to be tested on the coal mill for purposes of compliance to DDDD emission limits. These pollutant emissions are expected to be of the same concentration or less in the coal mill stack as compared to the kiln stack. Therefore, it is conservative to assume these pollutants, which have concentration based limits, in the coal mill stack are of the same concentration as the kiln stack. Hg and PM testing requirements are addressed in **Specific Condition G.11.**}

- **G.11.** <u>Hg and PM Compliance Testing</u>. Because the Hg and PM emission limits are specific to Rule 62-204.800(9)(f), F.A.C., the procedure to demonstrate compliance on the coal mill stack shall follow procedures outlined in:
  - a. 40 CFR 63 1348(b)(7) and 40 CFR 63.1349(b)(5) for Hg; and
  - b. 40 CFR 63.1349(b)(1)(viii) for PM.

[Rule 62-204.800(9)(f)8., F.A.C. and Permit No. 1190042-020-AC]

**G.12.** <u>Test Methods</u>. When required, tests shall be performed in accordance with the following reference methods:

Method	Description of Method and Comments	
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content	
5/5I	Method for Determining Particulate Matter Emissions (All PM is assumed to be PM <sub>10</sub> .)	

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Method	Description of Method and Comments
23	Determination of Polychlorinated Dibenzo-P-Dioxins And Polychlorinated Dibenzofurans From Stationary Sources
25A	Measurement of Gaseous Organic Concentrations (Flame Ionization - Instrumental)
29	Determination of Metal Emissions from Stationary Sources
321	Measurement of Gaseous Hydrogen Chloride Emissions At Portland Cement Kilns by Fourier Transform Infrared (FTIR) Spectroscopy

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. Tests shall be conducted in accordance with the appropriate test method and the applicable requirements specified in Appendix TV of this permit, NSPS Subpart A and DDDD in 40 CFR 60. [Rules 62-204.800(8) & (11), F.A.C.; 40 CFR 60 Appendix A]

# Specific Conditions G.13 – G.17 apply to this EU only when the Kiln is regulated under LLL.

**G.13.** <u>THC Emissions</u>. Because the kiln (which is subject to NESHAP 40 CFR 63 Subpart LLL) vents partially to the coal mill, the coal mill emissions are presumptively subject to the THC emissions limits of NESHAP Subpart LLL. Coal mill emissions must be accounted for in accordance with 40 CFR 63.1348(b)(6)(ii). Because the kiln uses a THC CEMS for monitoring, the THC CEMS data is combined with the coal mill THC testing results to determine an effective compliance limit using Equation 9, below. For the purposes of conducting the accuracy and quality assurance evaluations for CEMS, the THC span value (as propane) is 50 ppmvd and the reference method (RM) is Method 25A of 40 CFR 60, Appendix A. THC must be measured either upstream of the coal mill or the coal mill stack.

$$Cks = \frac{(MACT Limit \times (Qab + Qcm + Qks)) - (Qab \times Cab) - (Qcm \times Ccm)}{Qks}$$
(Eq. 9)

Where:

Cks = Kiln stack concentration (ppmvd). Qab = Alkali bypass flow rate (volume/hr). Cab = Alkali bypass concentration (ppmvd). Qcm = Coal mill flow rate (volume/hr).

Ccm = Coal mill concentration (ppmvd).

Qks = Kiln stack flow rate (volume/hr).

[40 CFR 63.1349(b)(4)]

**G.14.** <u>Hg Emissions</u>. Because the kiln vents partially to the coal mill, the coal mill emissions are presumptively subject to the Hg emissions limits of NESHAP 40 CFR 63 Subpart LLL. Coal mill emissions must be accounted for by 40 CFR 63.1349(b)5. Because the kiln uses a Hg CEMS or sorbent trap system for monitoring, the Hg CEMS/sorbent trap data is combined with coal mill Hg testing results to determine an effective compliance limit using Equation 10, below.

$$E_{30D} = k \frac{\sum_{i=1}^{n} C_i Q_i}{P}$$
 (Eq. 10)

Where:

 $E_{30D}$  = 30-day rolling emission rate of mercury, lb/MM tons clinker.

 $C_i$  = Concentration of mercury for operating hour i,  $\mu g/scm$ .

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 $Q_i$  = Volumetric flow rate of effluent gas for operating hour i, where  $C_i$  and  $Q_i$  are on the same basis (either wet or dry), scm/hr.

k = Conversion factor, 1 lb/454,000,000  $\mu$ g.

n = Number of kiln operating hours in a 30 kiln operating day period.

P = 30 days of clinker production during the same time period as the mercury emissions measured, million tons.

[40 CFR 63.1349(b)(5)]

**G.15.** <u>HCl Emissions</u>. Because the kiln vents partially to the coal mill, the coal mill emissions are presumptively subject to the HCl emissions limits of NESHAP 40 CFR 63 Subpart LLL. Coal mill emissions must be accounted for by 40 CFR 63.1349(b)(6). Because the kiln uses either an HCl CEMS or surrogate monitoring by SO<sub>2</sub> CEMS or by minimal sorbent injection rate (See 40 CFR 63.1349(b)(6)) for monitoring, the CEMS data is combined with coal mill HCl testing results to determine an effective compliance limit using Equation 11, below.

$$Cks = \frac{(MACT \ Limit \times (Qab + Qcm + Qks)) - (Qab \times Cab) - (Qcm \times Ccm)}{Qks}$$
(Eq. 11)

Where:

Cks = Kiln stack concentration (ppmvd).

Qab = Alkali bypass flow rate (volume/hr).

Cab = Alkali bypass concentration (ppmvd).

Qcm = Coal mill flow rate (volume/hr).

Ccm = Coal mill concentration (ppmvd).

Qks = Kiln stack flow rate (volume/hr).

[40 CFR 63.1349(b)(6)]

# **Compliance Test Methods and Procedures**

G.16. <u>Annual PM Compliance Tests Required</u>. Since the kiln (which is subject NESHAP 40 CFR 63 Subpart LLL) vents partially to the coal mill (S-22), the coal mill emissions are presumptively subject to the PM emissions limits of NESHAP 40 CFR 63 Subpart LLL. During each calendar year (January 1<sup>st</sup> to December 31<sup>st</sup>), coal mill emission point S-22 shall be tested to demonstrate compliance with the emissions standards for PM. The permittee shall simultaneously test the kiln and coal mill to determine an emissions limit per 40 CFR 63.1343(b)2 and then set the PM CPMS 30-kiln operating day limit using 63.1349(b)1. Coal Mill emission must be accounted for by 40 CFR 63.1349(b)(1)(viii). Equation 8 below.

$$E_c = \frac{E_K + E_B + E_C}{P}$$
 (Eq. 8)

Where:

- $E_C$  = Combined hourly emission rate of PM from the kiln and bypass stack and/or inline coal mill, lb/ton of kiln clinker production.
- $E_K$  = Hourly emissions of PM emissions from the kiln, lb.
- $E_B$  = Hourly PM emissions from the alkali bypass stack, lb.
- $E_C$  = Hourly PM emissions from the inline coal mill stack, lb.

P = Hourly clinker production, tons.

The permittee shall demonstrate initial compliance by conducting separate performance tests while the raw mill is under normal operating conditions and while the raw mill is not operating. [Rules 62-297.310(8)(a) and (b), F.A.C.; Permit No.1190042-001-AC (PSD-FL-361) and 40 CFR 63.1349]

**G.17.** <u>Test Methods</u>. When required, tests shall be performed in accordance with the following reference methods:

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Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5/5I	Method for Determining Particulate Matter Emissions (All PM is assumed to be PM <sub>10</sub> .)
25A	Measurement of Gaseous Organic Concentrations (Flame Ionization - Instrumental)
29	Determination of Metal Emissions from Stationary Sources
321	Measurement of Gaseous Hydrogen Chloride Emissions At Portland Cement Kilns by Fourier Transform Infrared (FTIR) Spectroscopy

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. Tests shall be conducted in accordance with the appropriate test method and the applicable requirements specified in Appendix TV of this permit, NSPS Subpart A in 40 CFR 60, and NESHAP Subparts A and LLL in 40 CFR 63. [Rules 62-204.800(8) & (11), F.A.C.; 40 CFR 60 Appendix A; 40 CFR 63 Subparts A and LLL]

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### Subsection H. Emissions Unit No. 010, Alternative Fuels processing System

#### The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
010	Alternative Fuels Processing System

#### **Essential Potential to Emit (PTE) Parameters**

H.1. <u>Hours of Operation</u>. The activities included in this emissions unit are permitted to operate continuously (i.e., 8,760 hours per year). [Rule 62-210.200 (Potential to Emit), F.A.C.; Permit No.1190042-009-AC (PSD-FL-361F)]

#### Performance Requirements

- **H.2.** <u>AF Equipment</u>. The permittee is authorized to operate the following permanent equipment for firing alternative fuels (AF) in the pyroprocessing kiln system. The permittee shall submit details of the final design once complete (e.g., design heat input rates and schematics).
  - a. <u>Mechanical and Pneumatic Handling and Feed Systems</u>. Each feed system is designed to handle alternative fuels with multiple points of injection to accommodate various AF particle size, density, and heating value. The nominal feed rate of the total feed system is 32 tons of AF per hour.
    - (1). The mechanical feed system(s) for the calciner and kiln burners consists of mechanical feeder(s), weighing mechanism(s), load hopper(s) with required conveyors, storage bins, and other associated equipment.
    - (2). The pneumatic feed systems for the calciner and kiln burners consists of a system of mechanical feeder(s) and associated system of air movement equipment and related ductwork, weighing mechanism(s), loading hopper(s) with required conveyors, storage bins, and other associated equipment.
  - b. <u>Kiln and Calciner Burner, AF Handling and Firing Systems</u>. The permittee can operate the current kiln and/or calciner burner system with a multi-channel fuel burner(s) and/or other related feed equipment specifically designed for co-firing AF with authorized fuels in the kiln.
  - c. <u>Feed Systems</u>. To the extent practicable, components of the feed systems shall be substantially enclosed or covered to prevent the loss of any AF and fugitive dust emissions. Each feed system shall be integrated into the existing kiln data system. The AF feed rate shall be recorded along with the other fuel feed rates.
  - d. <u>Fuel Preparation Equipment.</u> The permittee is authorized to install grinding, shredding, screening, and sizing equipment to prepare the AF. This equipment will be powered by electric motors or diesel engines. In addition, the diesel engines shall comply with any applicable NSPS or NESHAP standards.
     [Permit No.1190042-009-AC (PSD-FL-361F); Rule 62-210.225, PTE, F.A.C.; Rule 62-296.320]
- **H.3.** <u>Prohibited Materials</u>. The owner or operator shall <u>not</u> introduce into any part of the process any of the following fuels and materials:
  - a. hazardous wastes as defined in 40 CFR 261;
  - b. petroleum contaminated soil or materials;
  - c. off-specification used oil;
  - d. nuclear waste, and radioactive waste;
  - e. biomedical waste;
  - f. asbestos-containing materials per 40 CFR 61 Subpart M;
  - g. whole batteries;
  - h. solid wastes, other than tires as allowed by this permit, or
  - i. Coal ash which has not been determined to be acceptable for initial or continued use to control emissions of Total Hydrocarbon (THC) and Volatile Organic Compound (VOC) by initial, trial,

# Subsection H. Emissions Unit No. 010, Alternative Fuels processing System

or periodic sampling protocols and test results specified in the facility Material Management Plan for THC/VOC emissions control (Appendix MM - Material Management Plan).

If the permittee identifies delivered material that falls under the above paragraph, the supplier shall be contacted and the material shall be returned, disposed, or any other appropriate legal method of handling the material shall be employed. The permittee shall maintain records of delivery, sampling and analysis, and actions taken to correct abnormalities. Such records shall be stored onsite for at least five years and available for inspection upon request. [Rule 62-210. 200 (Potential to Emit), F.A.C.; Permit No.1190042-009-AC (PSD-FL-361F)]

- **H.4.** <u>Alternative Fuels (AF)</u>. Subject to the AF Acceptance Criteria, the permittee is authorized to accept authorized fuels within any of the following AF categories.
  - a. <u>Tire-Derived Fuel (TDF)</u>, which includes whole and shredded tires with or without steel belt material including portions of tires such as tire fluff. The kiln is currently permitted to use both whole tires using the existing tire injection mechanism system and chipped tires.
  - b. <u>Plastics</u>, which includes materials such as polyethylene plastic used in agricultural and silvicultural operations. This may include incidental amounts of chlorinated plastics.
  - c. <u>Roofing Materials</u>, which consists of roofing shingles and related roofing materials with the bulk of the incombustible grit material separated and which is not subject to regulations as an asbestos-containing material per 40 CFR 61, Subpart M.
  - d. <u>Agricultural Biogenic Materials</u>, which includes materials such as peanut hulls, rice hulls, corn husks, citrus peels, cotton gin byproducts, animal bedding and other similar types of materials.
  - e. <u>Cellulosic Biomass Untreated</u>, which includes materials such as untreated lumber, tree stumps, tree limbs, slash, bark, sawdust, sander dust, wood chips scraps, wood scraps, wood slabs, wood millings, wood shavings and processed pellets made from wood or other forest residues.
  - f. <u>Cellulosic Biomass Treated</u>, which includes preservative-treated wood that may contain treatments such as creosote, copper-chromium-arsenic (CCA), or alkaline copper quaternary (ACQ), painted wood, or resinated woods (plywood, particle board, medium density fiberboard, oriented strand board, laminated beams, finger-jointed trim and other sheet goods). The permittee shall not fire more than 1,000 lb/hour averaged on a 7-day block average basis of segregated streams of wood treated with copper-chromium-arsenic (CCA) compounds.
  - g. <u>Carpet-Derived Fuel</u>, which includes shredded new, reject or used carpet materials. This material may contain incidental related materials (e.g., tack-down strips, nails, etc.).
  - h. <u>Alternative Fuel Mix</u>, which includes a blended combination of two or more of any of the above materials.
  - i. <u>Biosolids</u>, which includes organic materials sanitized to meet EPA Class A sanitization standards and is derived from treatment processes of public treatment water systems.
  - j. <u>Engineered Fuel (EF)</u> is engineered to have targeted, consistent fuel properties such as: calorific value, moisture, particle size, ash content, and volatility. The specific targeted properties are established based on available alternative fuel material supply and are carefully controlled through blending of non-hazardous combustible materials or through separation of non-hazardous incombustible materials from combustible materials (mixes of any alternative fuels where the blending and processing may also include the addition of on-specification used oils or other non-hazardous liquids to ensure consistent and predictable fuel properties). EF is engineered largely from the above materials and could include, but not be limited to materials such as animal meal, automotive manufacturing byproducts, clean-up debris from natural disasters, processed municipal solid waste, dried/sanitized biosolids, paint filter cake, hospital materials (non-infectious), pharmaceuticals (expired prescriptions), cosmetics, and confiscated narcotics that are not a hazardous waste (40 CFR 261).

[Rule 62-210. 200 (Potential to Emit), F.A.C.; Permit No.1190042-009-AC (PSD-FL-361F)]

**H.5.** <u>Receiving AF</u>. For AF received at the plant, the permittee shall comply with the following requirements:

# Subsection H. Emissions Unit No. 010, Alternative Fuels processing System

- a. All AF materials received at the plant shall be in covered trucks and/or enclosed containers as needed to prevent fugitive emissions. When unloading and handling AF, the permittee shall take reasonable precautions to prevent fugitive dust emissions.
- b. The permittee shall record the category/type and the amount of each AF received.
- c. Each AF category received shall be sampled and analyzed in a manner consistent with industry standards for quality assurance and quality control to ensure that representative data is collected. The permittee shall obtain the analytical results of a representative sample of the AF category prior to the initial delivery, quarterly for the first year, and if the analysis meets permit requirements the frequency of sampling and analysis shall be annual every January thereafter, if that material is present. All records and results of the analysis will be maintained at the facility as required for currently permitted fuels.
- d. Fuel Analyses Parameters:
  - i. The following information shall be included when reporting the analytical results for an AF: heating value (Btu/lb) of AF; moisture, ash, sulfur and chlorine content (percent by weight); chromium, lead, and mercury contents (ppm). All concentrations are on a dry basis.
  - ii. Reject roofing shingles, either separately as item **H.4.c**. (Roofing Materials) or if knowingly included in item **H.4.j**. (Engineered Fuel), shall include a certification from the manufacturer that they were made without asbestos or analytical testing results.

[Permit No.1190042-009-AC (PSD-FL-361F)]

- **H.6.** <u>Processed/Prepared AF</u>. The AF shall be stored:
  - a. Under cover or in covered trailers, containers, or buildings as needed to prevent fugitive emissions;
  - b. On top of a paved or compacted clay surface; and,
  - By Best Management Practices to promote containment and prevent contamination of air, water, and soil. The permittee identified Best Management Practices in the air permit application for Permit No. 1190042-009-AC

[Permit No.1190042-009-AC (PSD-FL-361F)]

- **H.7.** <u>Operation</u>. Alternative fuels (AF) shall only be fired after the kiln has achieved normal operation, temperatures and production (i.e., when raw materials are introduced).
  - a. AF shall be introduced only in the high-temperature combustion zones of the main kiln burner, the precalciner burner or appropriate secondary firing points in the precalciner/preheater.
  - b. The permittee shall make every effort during the shakedown and assessment periods to promote efficient combustion and minimize emissions impacts.
  - c. Operators shall discontinue firing AF if one of the CEMS, CPMS, or other continuous monitors indicates a non-compliance issue related to alternative fuels. Use of AF may start again after the issue is corrected.

[Permit No.1190042-009-AC (PSD-FL-361F)]

- H.8. <u>Biosolids NESHAP 40 CFR 61 Requirements Subpart A</u>. When combusting biosolids the permittee shall comply with all applicable requirements of 40 CFR 61, Subpart A, General Provisions, which have been adopted by reference in Rule 62-204.800(10)(d), F.A.C., except for 40 CFR 61.08 and except that the Secretary of the Department is not the Administrator for the purposes of 40 CFR 61.04, 40 CFR 61.11, and 40 CFR 61.18. In lieu of the process set forth in 40 CFR 61.08, the Department will follow the permit processing procedures of Rule 62-4.055, F.A.C. [Rule 62-204.800(10)(d), F.A.C., and Permit No.1190042-009-AC (PSD-FL-361F)]
- **H.9.** <u>Mercury Emissions from Biosolids</u>. The permitted maximum allowable emission rate for mercury is 7.1 pounds per 24-hour period. [Rule 62-204.800(10)(d), F.A.C., and 40 CFR 61.52 and Permit No.1190042-009-AC (PSD-FL-361F)]

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{*Permitting Note: Compliance with this condition is demonstrated by compliance with either the mercury limit in Rule 62-204.800(9), F.A.C. of 58 lb/MM tons clinker or the mercury limit in NESHAP 40 CFR 63 Subpart LLL of 55 lb/MM tons clinker, depending on whichever regulation is applicable to the kiln.*}

#### **Monitoring Requirements**

- **H.10.** <u>Sampling Criteria</u>. At a minimum, the frequency of sampling and analysis shall be consistent with the frequency of sampling and analysis of coal. (See **Specific Condition H.5.d**.) All records and results of the analysis shall be maintained at the facility as required for currently permitted fuels. [Permit No.1190042-009-AC (PSD-FL-361F)]
- **H.11.** <u>AF Assessment and Analytical Methods</u>. The permittee shall use the following analytical methods to determine the composition of the AF.

Parameter	Analytical Methods
Moisture, Volatiles, Ash and Fixed Carbon	Proximate Analysis appropriate for given fuel
Carbon, Hydrogen, Nitrogen Sulfur and	Ultimate Analysis appropriate for given fuel
Oxygen	
Heating Value	ASTM E711 - 87(2004) Standard Test Method for Gross Calorific Value of Refuse-Derived Fuel by the Bomb Calorimeter, or
	ASTM D5468 - 02(2007) Standard Test Method for Gross Calorific and Ash Value of Waste Materials, or Proximate Analysis appropriate for given fuel
Chlorine	EPA SW-846 or EPA Method 9056
Mercury	EPA 7470A/7471A
Chromium and Lead	EPA SW-846 or EPA Method 6010B

Other equivalent methods may be used with prior written approval of the Compliance Authority [Permit No.1190042-009-AC (PSD-FL-361F)]

- **H.12.** <u>Sampling/Analysis by Permittee</u>. For each AF category assessment, the permittee shall obtain analytical results of the AF as required in **Specific Condition H.5**. The operator shall take a representative as-fired sample of the AF and have it analyzed for the parameters listed in **Specific Condition H.5.d.** [Permit No.1190042-009-AC (PSD-FL-361F)]
- **H.13.** <u>Testing of Biosolids for Mercury</u>. The permittee shall test biosolids unless a waiver of emission testing is obtained under 40 CFR 61.13 from the Department. Such tests shall be conducted in accordance with the procedures set forth in 40 CFR 61 Subpart E as follows.
  - a. The emission or sampling test shall be performed within 90 days of startup of firing biosolids per Method 101A or 105 in Appendix B to 40 CFR 61 Subpart E. A total of three composite samples or as necessary shall be obtained within an operating period of 24 hours. When the 24-hour operating period is not continuous, the total sampling period shall not exceed 72 hours after the first grab sample is obtained. Samples shall not be exposed to any condition that may result in mercury contamination or loss.
  - b. The Compliance Authority (<u>DEP CD@dep.state.fl.us</u>) shall be notified at least 30 days prior to an emission or sampling test.
  - c. The permittee shall take samples over such a period or periods as are necessary to determine accurately the maximum emissions which will occur in a 24-hour period. No changes shall be made in the operation which would potentially increase emissions above the level determined by the most recent stack test, until the new emission level has been estimated by calculation and the results reported to the Department.

#### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS. Subsection H. Emissions Unit No. 010, Alternative Fuels processing System

# d. All samples shall be analyzed and mercury emissions shall be determined within 30 days after the stack or sampling test. Each determination shall be reported to the Compliance Authority (<u>DEP CD@dep.state.fl.us</u>) within 15 calendar days following the date such determination is completed. Records of emission test results and other data needed to determine total emissions shall be retained at the source and shall be made available, for inspection by the Compliance Authority, for a minimum of 5 years.

- e. The maximum 24-hour period biosolids firing rate shall be determined by use of a flow rate measurement device that can measure the mass rate of biosolids charged to the incinerator or dryer with an accuracy of  $\pm 5$  percent over its operating range. Other methods of measuring biosolids mass charging rates may be used if they have received prior approval by the Department.
- f. If sampling is used, mercury emissions shall be determined by use of the following equation.

$$E_{Hg} = \frac{MQ \ F_{sm(arg)}}{1000}$$

where:

 $E_{Hg}$  = Mercury emissions, g/day.

M = Mercury concentration of biosolids on a dry solids basis,  $\mu g/g$ .

- Q = Biosolids changing rate, kg/day.
- $F_{sm}$  = Weight fraction of solids in the collected biosolids after mixing.

1000 = Conversion factor, kg  $\mu$ g/g<sup>2</sup>.

- g. No changes in the operation of a plant shall be made after a biosolids test has been conducted which would potentially increase emissions above the level determined by the most recent biosolids test, until the new emission level has been estimated by calculation and the results reported to the Compliance Authority (DEP CD@dep.state.fl.us).
- h. If mercury emissions exceed 3.5 pound per 24-hour period, demonstrated either by stack sampling according to 40 CFR 61.53 or biosolids sampling, the permittee shall monitor mercury emissions at intervals of at least once per year. The results of monitoring shall be reported and retained as indicated in **Specific Condition H.13.d**.

[Rule 62-204.800(10)(d), F.A.C., 40 CFR 61.53, 53, 54, and 55, and Permit No.1190042-009-AC (PSD-FL-361F)]

{*Permitting Note: Compliance with this condition is demonstrated by the monitoring of mercury emissions in accordance with Rule 62-204.800(9), F.A.C., and Specific Condition C.34.; or NESHAP LLL and Specific Condition C.55.; whichever is applicable to the kiln.*}

**H.14.** <u>AF Target Levels</u>. Target levels are the desired AF properties for as-fired fuel in the system. Target Levels are not enforceable.

Parameter	Target Levels <sup>a</sup>
Higher Heating Value	> 5,000 Btu/lb
Arsenic	< 2,000 ppm by weight
Beryllium	< 20 ppm by weight
Cadmium	< 200 ppm by weight
Chromium	< 200 ppmw (mg/kg)
Lead	< 1,000 ppmw (mg/kg)
Mercury	< 0.3 ppm by weight

a - Heating value is on dry basis. All concentrations are dry basis. Target levels are based on USGS data

# Subsection H. Emissions Unit No. 010, Alternative Fuels processing System

of coal samples, (<u>https://pubs.usgs.gov/ds/0975/ds975.pdf</u>). [Permit No.1190042-009-AC (PSD-FL-361F)]

#### **Notification Requirements**

- **H.15.** <u>Shakedown Notifications</u>. Within 15 (fifteen) days of completing construction, the permittee shall notify the Compliance Authority and provide a schedule for shakedown and the initial AF category assessment. The Compliance Authority may waive this deadline. [Permit No.1190042-009-AC (PSD-FL-361F)]
- H.16. <u>AF Assessment Notifications</u>. At least five days prior to firing each new category of AF material listed in Specific Condition H.4., the permittee shall notify the Compliance Authority with a proposed schedule of when the specific new category of AF will be fired. The Compliance Authority may waive this deadline. [Permit No.1190042-009-AC (PSD-FL-361F)]

#### **Recordkeeping and Reporting Requirements**

- **H.17.** <u>Records of Fuels and Heat Input</u>. The permittee shall record the fuel-firing rate continuously. The permittee shall maintain records of the quantity and representative analysis of fuels purchased, and such records shall include the parameters listed in **Specific Condition H.5.d**. The permittee shall make and maintain records of heat input to the pyroprocessing system on a block-hour basis, starting at the beginning of each hour, by multiplying the hourly average fuel-firing rate by the heating value representative of that fuel from the records of fuel analysis. Such records shall be completed for each block-hour by the end of the day following the day the fuel was fired. [Permit No.1190042-009-AC (PSD-FL-361F)]</u>
- **H.18.** <u>Reports for Shakedown and AF Assessments</u>. During periods of authorized shakedowns and AF category assessments, the permittee shall document the shakedown and/or AF category assessment period. These periods may end early when the operator is confident that good operating practices have been defined for the AF category that results in steady kiln system operation. Within 90 days of completing a shakedown and/or assessment of each AF category listed in **Specific Condition H.4**., the permittee shall provide a written report summarizing the following information collected from the shakedown and/or AF category assessment period to the Compliance Authority (**DEP CD@dep.state.fl.us**).
  - a. For a 24-hour period representing good operating practices and steady kiln operation, the report shall include: the representative analysis of the AF fired; hourly AF and fossil fuel firing rates; hourly clinker production; hourly CO, NOx, and THC emissions data from the CEMS; the hourly averages from the CPMS; and the inlet temperature to main kiln baghouse (3-hour average). Identify the good operating practices resulting in steady kiln operation.
  - b. The AF category assessments may occur over several years. Emissions from the initial AF category assessment of a new fuel may be excluded from the report requiring a comparison of actual-to-baseline emissions (Rules 62-212.300(1)(e) and 62-210.370, F.A.C.) since operators are still establishing good operating practices and the AF will not have been available for the full calendar year. To exclude emissions data collected during an authorized shakedown and/or AF category assessment period from this report, the permittee shall submit the following information: total clinker production; fossil fuel fired; AF fired; total CO, NOx, and THC emissions (tons). Excluded data shall be replaced with data estimated from: the actual clinker production rate; and an emissions factor based on the average emission rates from the rest of the year (i.e., all periods except the shakedown and/or AF assessment periods).
    [Permit No.1190042-009-AC (PSD-FL-361F)]
- **H.19.** <u>Test Reports</u>. The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix TR Facility-Wide Testing Requirements of this permit. The permittee shall use the most accurate of the approaches below to compute the emissions of a pollutant.
  - a. If the emissions unit is equipped with a CEMS meeting the requirements of Rule 62-210.370(2)(b), F.A.C., the permittee shall use the CEMS to compute the emissions of the pollutant.

- b. If a CEMS is not available or does not meet the requirements of Rule 62-210.370(2)(b), F.A.C, but emissions of the pollutant can be calculated using the mass balance methodology of Rule 62-210.370(2)(c), F.A.C., the permittee shall use that methodology, unless the permittee demonstrates to the Department that an alternative approach is more accurate.
- c. If a CEMS is not available or does not meet the requirements of Rule 62-210.370(2)(b), F.A.C., and emissions cannot be computed pursuant to the mass balance methodology, the permittee shall use an emission factor meeting the requirements of Rule 62-210.370(2)(d), F.A.C., unless the permittee demonstrates to the Department that an alternative approach is more accurate.
   [Permit No.1190042-009-AC (PSD-FL-361F)]
- **H.20.** <u>Records Availability</u>. All records shall be made available to the Department upon request. [Permit No.1190042-009-AC (PSD-FL-361F) and Rule 62-4.070(1) & (3), F.A.C.]

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# Subsection I. Emissions Unit No. 009, Kiln Emergency Generator CI RICE

#### The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
009	Kiln Emergency Generator CI RICE

This emissions unit consists of one Manufacturer-certified Compression Ignition Reciprocating Internal Combustion Engine (CI RICE) used to drive an emergency generator at the facility. The CI RICE is a Caterpillar Diesel Engine Model No. C32, rated at 1.12 megawatts and 1050 horsepower, with a manufacture date of 2007.

{Permitting Notes: This emergency-use RICE is regulated under 40 CFR 63, Subpart ZZZZ, NESHAP for Stationary RICE and 40 CFR 60, Subpart IIII, NSPS for Stationary Compression Ignition RICE, adopted in Rules 62.204.800(11)(b) & (8)(b), F.A.C., respectively. This CI RICE is considered "new" with a displacement of less than 30 liters per cylinder, located at a major source of HAP, that has been modified, reconstructed, or commenced construction on or after 6/12/2006, and that have a post-2007 model year. In accordance with provisions of 40 CFR 63.6590(b)(i), this emergency RICE is subject to only the limited requirements (notification only) of Subpart ZZZZ.}

#### **Essential Potential to Emit (PTE) Parameters**

- **I.1.** <u>Authorized Fuel</u>. This stationary RICE must use diesel fuel that meets the following requirements for non-road diesel fuel:
  - a. *Sulfur Content*. The sulfur content shall not exceed 15 ppm (0.0015%) by weight (ultra low sulfur) for non-road fuel.
  - b. *Cetane and Aromatic*. The fuel must have a minimum cetane index of 40 or must have a maximum aromatic content of 35 volume percent.
  - [40 CFR 60.4207(b), 80.510(b)]
- **I.2.** <u>Restricted Hours of Operation</u>. The following limitations apply to the CI RICE operations:
  - a. *Emergency Situations*. There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 60.4211(f)(1)]
  - b. Other Situations. The permittee may operate this emergency stationary RICE for any combination of maintenance and readiness testing for a maximum of 100 hours per calendar year. Operation for the purpose of maintenance checks and testing is allowed provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, or the insurance company associated with the engine. The owner or operator may petition the Compliance Authority for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year. Any operation for non-emergency situations as allowed by **paragraph I.2.c.** count as part of the 100 hours per calendar year allowed by this paragraph [40 CFR 60.4211(f)(2)(i)]
  - c. *Non-emergency Situations*. This engine may be operated for up to 50 hours per calendar year in nonemergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph b., above. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 60.4211(f)(3)].

#### **Emissions Standards**

**I.3.** <u>NMHC + NO<sub>X</sub> Emissions</u>. Emissions of non-methane hydrocarbons plus nitrogen oxide shall not exceed 6.4 grams per kilowatt-hour (g/KW-hr). [40 CFR 60.4202 and 40 CFR 89.112- Table 1]

# Subsection I. Emissions Unit No. 009, Kiln Emergency Generator CI RICE

- I.4. <u>CO Emissions</u>. Emissions of carbon monoxide shall not exceed 3.5 g/KW-hr. [40 CFR 60.4202 and 40 CFR 89.112- Table 1]
- I.5. <u>PM emissions</u>. Emissions of particulate matter shall not exceed 0.20 g/KW-hr. [40 CFR 60.4202 and 40 CFR 89.112- Table 1]

#### **Monitoring Requirements**

**I.6.** <u>Hour Meter</u>. The owner or operator must install a non-resettable hour meter on the CI RICE if one is not already installed. [40 CFR 60.4209(a)]

#### **Testing and Compliance Requirements**

- I.7. Operation and Maintenance. The owner or operator must operate and maintain the CI RICE according to the manufacturer's written instructions. In addition, owners and operators may only change those settings that are permitted by the manufacturer. This RICE must be maintained and operated to meet the emissions limits in Specific Conditions I.3. through I.5. over the entire life of the engine. [40 CFR 60.4206 & 4211(a)]
- **I.8.** <u>Compliance Requirements Due to Loss of Certification</u>. If the permittee does not install, configure, operate, and maintain the engine and control device according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if the permittee does not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or the permittee changes the emission-related settings in a way that is not permitted by the manufacturer, the permittee must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action. [40 CFR 60.4211(g)]
- **I.9.** <u>Testing Requirements</u>. In the event performance tests are required pursuant to **Specific Condition I.8.**, the following requirements shall be met:
  - a. *Testing Procedures*. The performance test must be conducted according to the in-use testing procedures in 40 CFR Part 1039, Subpart F.
  - b. *NTE Standards*. Exhaust emissions from this engine must not exceed the not-to-exceed (NTE) numerical requirements, rounded to the same number of decimal places as the applicable standard (STD) in **Specific Conditions I.3** through **I.5**, determined from the following equation:

NTE Requirement For Each Pollutant =  $(1.25) \times (STD)$  (Eq. 1) [40 CFR 60.4212(a) & (c)]

**I.10.** <u>Common Testing Requirements</u>. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

# **Records and Reports**

- **I.11.** <u>Testing Notification</u>. At such time that the requirements of **Specific Conditions I.8** and **I.9**. become applicable, the owner or operator shall notify the compliance authority of the date by which the initial compliance test must be performed. [Rule 62-213.440(1), F.A.C]
- **I.12.** <u>Hours of Operation Records</u>. The owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner or operator must record the time of operation of the engine and the reason the engine was in operation during that time. [40 CFR 60.4214(b)]
### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

## Subsection I. Emissions Unit No. 009, Kiln Emergency Generator CI RICE

- **I.13.** <u>Maintenance Records</u>. To demonstrate conformance with the manufacturer's written instructions for maintaining the certified engine and to document when compliance testing must be performed pursuant to **Specific Condition I.8.**, the owner or operator must keep the following records:
  - a. Engine manufacturer data indicating compliance with the standards.
  - b. A copy of the manufacturer's written instructions for operation and maintenance of the certified engine.
  - c. A written maintenance log detailing the date and type of maintenance performed on the engine, as well as, any deviations from the manufacturer's written instructions.

[Rule 62-213.440(1), F.A.C.; and, 40 CFR 60.4211(c) & (g)]

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## SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

# Subsection J. Emissions Unit No. 011, Loadout Backup Emergency Generator CI RICE

#### The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
011	Loadout Backup Emergency Generator CI RICE

This emissions unit consists of one Manufacturer-certified CI RICE used in case of loss of electricity to the loadout/shipping operations at the facility. The CI RICE is a Caterpillar Diesel Engine Model CIS Serial No. fte03836, rated at 500 kilowatts and 762 brake horsepower, with a manufacture date of 2019.

{Permitting Notes: This emergency-use reciprocating internal combustion engine (RICE) is regulated under 40 CFR 63, Subpart ZZZZ, NESHAP for Stationary RICE and 40 CFR 60, Subpart IIII, NSPS for Stationary Compression Ignition RICE, adopted in Rules 62.204.800(11)(b) & (8)(b), F.A.C., respectively. This CI RICE is considered "new" with a displacement of less than 30 liters per cylinder, located at a major source of HAP, that has been modified, reconstructed, or commenced construction on or after 6/12/2006, and that have a post-2007 model year. In accordance with provisions of 40 CFR 63.6590(b)(i), this emergency RICE is subject to only the limited requirements (notification only) of Subpart ZZZZ.}

# **Essential Potential to Emit (PTE) Parameters**

- J.1. <u>Authorized Fuel</u>. This stationary RICE must use diesel fuel that meets the following requirements for non-road diesel fuel:
  - a. *Sulfur Content*. The sulfur content shall not exceed 15 ppm (0.0015%) by weight (ultra low sulfur) for non-road fuel.
  - b. *Cetane and Aromatic*. The fuel must have a minimum cetane index of 40 or must have a maximum aromatic content of 35 volume percent.
  - [40 CFR 60.4207(b), 80.510(b)]
- J.2. <u>Restricted Hours of Operation</u>. The following limitations apply to the CI RICE operations:
  - a. *Emergency Situations*. There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 60.4211(f)(1)]
  - b. Other Situations. The permittee may operate this emergency stationary RICE for any combination of maintenance and readiness testing for a maximum of 100 hours per calendar year. Operation for the purpose of maintenance checks and testing is allowed provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, or the insurance company associated with the engine. The owner or operator may petition the Compliance Authority for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year. Any operation for non-emergency situations as allowed by **paragraph J.2.c.** count as part of the 100 hours per calendar year allowed by this paragraph [40 CFR 60.4211(f)(2)(i)]
  - c. *Non-emergency Situations*. This engine may be operated for up to 50 hours per calendar year in nonemergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in **paragraph b.**, above. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 60.4211(f)(3)].

#### **Emissions Standards**

**J.3.** <u>NMHC + NO<sub>X</sub> Emissions</u>. Emissions of non-methane hydrocarbons plus nitrogen oxide shall not exceed 0.4 grams per kilowatt-hour (g/KW-hr). [EPA-420-B-16-022 (Tier II Standards)]

# Subsection J. Emissions Unit No. 011, Loadout Backup Emergency Generator CI RICE

- J.4. <u>CO Emissions</u>. Emissions of carbon monoxide shall not exceed 3.5 g/KW-hr. [EPA-420-B-16-022 (Tier II Standards)]
- J.5. <u>PM emissions</u>. Emissions of particulate matter shall not exceed 0.02 g/KW-hr. [EPA-420-B-16-022 (Tier II Standards)]

### **Monitoring Requirements**

**J.6.** <u>Hour Meter</u>. The owner or operator must install a non-resettable hour meter on the CI RICE if one is not already installed. [40 CFR 60.4209(a)]

#### **Testing and Compliance Requirements**

- J.7. <u>Operation and Maintenance</u>. The owner or operator must operate and maintain the CI RICE according to the manufacturer's written instructions. In addition, owners and operators may only change those settings that are permitted by the manufacturer. This RICE must be maintained and operated to meet the emissions limits in **Specific Conditions J.3** through **J.5**. over the entire life of the engine. [40 CFR 60.4206 & 4211(a)]
- **J.8.** <u>Compliance Requirements Due to Loss of Certification</u>. If the permittee does not install, configure, operate, and maintain the engine and control device according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if the permittee does not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or the permittee changes the emission-related settings in a way that is not permitted by the manufacturer, the permittee must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action. [40 CFR 60.4211(g)]
- **J.9.** <u>Testing Requirements</u>. In the event performance tests are required pursuant to **Specific Condition J.8.**, the following requirements shall be met:
  - a. *Testing Procedures*. The performance test must be conducted according to the in-use testing procedures in 40 CFR Part 1039, Subpart F.
  - b. *NTE Standards*. Exhaust emissions from the engine must not exceed the not-to-exceed (NTE) numerical requirements, rounded to the same number of decimal places as the applicable standard (STD) in **Specific Conditions J.3** through **J.5**, determined from the following equation:

NTE Requirement For Each Pollutant =  $(1.25) \times (STD)$  (Eq. 1)

[40 CFR 60.4212(a) & (c)]

**J.10.** <u>Common Testing Requirements</u>. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

# **Records and Reports**

- **J.11.** <u>Testing Notification</u>. At such time that the requirements of **Specific Conditions J.8.** and **J.9.** become applicable, the owner or operator shall notify the compliance authority of the date by which the initial compliance test must be performed. [Rule 62-213.440(1), F.A.C]
- **J.12.** <u>Hours of Operation Records</u>. The owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner or operator must record the time of operation of the engine and the reason the engine was in operation during that time. [40 CFR 60.4214(b)]

## SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

# Subsection J. Emissions Unit No. 011, Loadout Backup Emergency Generator CI RICE

- **J.13.** <u>Maintenance Records</u>. To demonstrate conformance with the manufacturer's written instructions for maintaining the certified engine and to document when compliance testing must be performed pursuant to **Specific Condition J.8.**, the owner or operator must keep the following records:
  - a. Engine manufacturer data indicating compliance with the standards.
  - b. A copy of the manufacturer's written instructions for operation and maintenance of the certified engine.
  - c. A written maintenance log detailing the date and type of maintenance performed on the engine, as well as, any deviations from the manufacturer's written instructions.

[Rule 62-213.440(1), F.A.C.; and, 40 CFR 60.4211(c) & (g)]

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