

ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET  
GAINESVILLE, FLORIDA 32609  
352/377-5822 ▪ FAX/377-7158

KA 624-08-04  
September 10, 2009

RECEIVED

SEP 11 2009

BUREAU OF AIR REGULATION

Mr. Jeff Koerner, Administrator  
Bureau of Air Regulation  
Florida Dept. of Environmental Regulation  
2600 Blair Stone Road, MS 5500  
Tallahassee, Florida 32399-2400

**RE: AC Permit Application for Short Term Trial Test of Alternative Fuel Materials in Kiln  
Suwannee American Cement; Branford Cement Plant, Facility ID: 1210465**

Dear Mr. Koerner:

Enclosed please find four (4) copies of an air construction (AC) permit application for Suwannee American Cement, Branford Cement Plant. The AC permit application is to request authorization to test alternative fuel materials in the Cement Kiln.

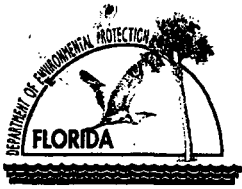
Please feel free to contact me at (352) 377-5822 or [mlee@koooglerassociates.com](mailto:mlee@koooglerassociates.com) or Krishna Cole, Suwannee American Cement at (386) 935-5023 or [krishnaC@suwanneecement.com](mailto:krishnaC@suwanneecement.com), if you have any questions regarding this submittal.

Regards,

Max Lee, PhD., P.E.  
Senior Engineer  
KOOGLER AND ASSOCIATES, INC.

Enclosure: Application Form

cc: Krishna Cole, Suwannee American Cement



# Department of Environmental Protection

RECEIVED

Division of Air Resource Management

SEP 11 2009

## APPLICATION FOR AIR PERMIT - LONG FORM

BUREAU OF AIR REGULATION

### I. APPLICATION INFORMATION

**Air Construction Permit** – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

**Air Operation Permit** – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

#### Identification of Facility

1. Facility Owner/Company Name: <b>Suwannee American Cement, LLC</b>	
2. Site Name: <b>Branford Cement Plant</b>	
3. Facility Identification Number: <b>01210465</b>	
4. Facility Location... Street Address or Other Locator: <b>5117 US Hwy 27, near intersection of CR 49</b> City: <b>Branford</b> County: <b>Suwannee</b> Zip Code: <b>32008</b>	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

#### Application Contact

1. Application Contact Name: <b>Max Lee, PhD, PE</b>	
2. Application Contact Mailing Address... Organization/Firm: <b>Koogler and Associates, Inc.</b> Street Address: <b>4014 NW 13<sup>th</sup> Street</b> City: <b>Gainesville</b> State: <b>Florida</b> Zip Code: <b>32609</b>	
3. Application Contact Telephone Numbers... Telephone: <b>(352) 377-5822</b> ext.13 Fax: <b>(352) 377-7158</b>	
4. Application Contact E-mail Address: <b>mlee@kooglerassociates.com</b>	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application: <b>9/11/09</b>	3. PSD Number (if applicable):
2. Project Number(s): <b>1210465-097-A</b>	4. Siting Number (if applicable):

## APPLICATION INFORMATION

### Purpose of Application

**This application for air permit is being submitted to obtain: (Check one)**

#### **Air Construction Permit**

- Air construction permit.
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

#### **Air Operation Permit**

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

#### **Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)**

- Air construction permit and Title V permit +revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

**Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:**

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

### Application Comment

**Application is for 20 calendar days in a 12 month trial period to test auto shredder residue (ASR) in the cement kiln. Limitation of the amount of ASR to be tested will provide reasonable assurance of emissions compliance. The amount of ASR will be limited to 1,200 tons of material.**

**Suwannee American Cement (SAC) proposes to monitor emissions by the existing continuous monitoring systems and material balance (via sampling and analyses). As described in Attachment 1, SAC will coordinate with Gerdau Ameristeel (supplier of ASR) to evaluate the supplied ASR and limit contaminants in ASR to be trial tested.**

**APPLICATION INFORMATION**

**Scope of Application**

<b>Emissions Unit ID Number</b>	<b>Description of Emissions Unit</b>	<b>Air Permit Type</b>	<b>Air Permit Processing Fee</b>
004	In-Line Kiln/Raw Mill	N/A	N/A
xxx	Unregulated shredder and screen	N/A	N/A

**Application Processing Fee**

**Check one:**  Attached - Amount: \$ \_\_\_\_\_  Not Applicable

# APPLICATION INFORMATION

## Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name : <b>Mr. Tom Messer, Plant Manager</b>
2. Owner/Authorized Representative Mailing Address... Organization/Firm: <b>Suwannee American Cement, LLC</b> Street Address: <b>5117 US Hwy 27</b> City: <b>Branford</b> State: <b>Florida</b> Zip Code: <b>32008</b>
3. Owner/Authorized Representative Telephone Numbers... Telephone: <b>(386) 935 -5000</b> ext. Fax: <b>(386) 935 -5080</b>
4. Owner/Authorized Representative E-mail Address: <b>tomm@suwanneecement.com</b>
5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i>   Signature  9.10.09 Date

## APPLICATION INFORMATION

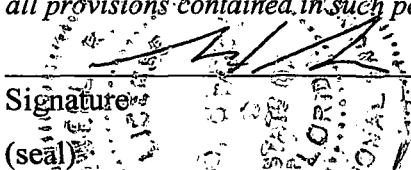
### Application Responsible Official Certification

**Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."**

1. Application Responsible Official Name:
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source, CAIR source, or Hg Budget source.
3. Application Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
4. Application Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
5. Application Responsible Official E-mail Address:
6. Application Responsible Official Certification: <i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i>  _____ Signature  _____ Date

**APPLICATION INFORMATION**

**Professional Engineer Certification**

1. Professional Engineer Name: <b>Max Lee, PhD PE</b> Registration Number: <b>58091</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>Koogler and Associates, Inc.</b> Street Address: <b>4014 NW 13<sup>th</sup> Street</b> City: <b>Gainesville</b> State: <b>Florida</b> Zip Code: <b>32609</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(352) 377-5822</b> ext.13 Fax: <b>(352) 377-7158</b>
4. Professional Engineer E-mail Address: <b>mlee@kooglerassociates.com</b>
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/> , if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/> , if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i>  Signature _____ Date <u>9/10/09</u> (seal) 

\* Attach any exception to certification statement.

## II. FACILITY INFORMATION

### A. GENERAL FACILITY INFORMATION

#### Facility Location and Type

1. Facility UTM Coordinates... Zone <b>17</b> East (km) <b>321.40</b> North (km) <b>3315.9</b>		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) <b>29/57/45</b> Longitude (DD/MM/SS) <b>82/51/03</b>	
3. Governmental Facility Code: <b>0</b>	4. Facility Status Code: <b>A</b>	5. Facility Major Group SIC Code: <b>32</b>	6. Facility SIC(s): <b>3241</b>
7. Facility Comment :			

#### Facility Contact

1. Facility Contact Name: <b>Krishna Cole, Environmental Engineer</b>
2. Facility Contact Mailing Address Organization/Firm: <b>Suwannee American Cement, LLC</b> Street Address: <b>P.O. Box 410</b> City: <b>Branford</b> State: <b>FL</b> Zip Code: <b>32008</b>
3. Facility Contact Telephone Numbers: Telephone: <b>(386) 935-5023</b> ext.   Fax: <b>(386) 935-5080</b>
4. Facility Contact E-mail Address: <b>krishnac@suwaneeement.com</b>

#### Facility Primary Responsible Official

**Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."**

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City:                                    State:                                    Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) -     ext.     Fax: ( ) -
4. Facility Primary Responsible Official E-mail Address:



# FACILITY INFORMATION

## Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a “major source” and a “synthetic minor source.”

1. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	
<p><b>The SAC Branford Cement Plant, is subject to 40 CFR 60, Subpart F: Standards of Performance for Portland Cement Plants (superceded by 40 CFR 63, Subpart LLL); 40 CFR 60, Subpart Y: Standards of Performance for Coal Preparation Plants; 40 CFR 60, Subpart OOO: Standards of Performance for Nonmetallic Mineral Processing Plants; 40 CFR 63, Subpart LLL: National Emission Standards for Hazardous Air Pollutants from Portland Cement Industry.</b></p>	

**FACILITY INFORMATION**

**List of Pollutants Emitted by Facility**

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
<b>Particulate Matter – PM</b>	<b>A</b>	<b>N</b>
<b>Particulate Matter – PM<sub>10</sub></b>	<b>A</b>	<b>N</b>
<b>SO<sub>2</sub></b>	<b>A</b>	<b>N</b>
<b>NO<sub>x</sub></b>	<b>A</b>	<b>N</b>
<b>CO</b>	<b>A</b>	<b>N</b>
<b>VOC</b>	<b>B</b>	<b>N</b>
<b>SAM</b>	<b>B</b>	<b>N</b>
<b>H114 (Mercury)</b>	<b>C</b>	<b>N</b>
<b>PB</b>	<b>C</b>	<b>N</b>
<b>DIOX (Dioxins/Furans)</b>	<b>C</b>	<b>N</b>
<b>HAPs – Total</b>	<b>A</b>	<b>N</b>
<b>H106 (hydrochloric acid)</b>	<b>A</b>	<b>N</b>

**FACILITY INFORMATION**

**B. EMISSIONS CAPS**

**Facility-Wide or Multi-Unit Emissions Caps N/A**

1. Pollutant Subject to Emissions Cap	2. Facility-Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

# FACILITY INFORMATION

## C. FACILITY ADDITIONAL INFORMATION

### Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: 2005 <u>-006-AV</u>
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: 2005 <u>-006-AV</u>
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: 2005 <u>-006-AV</u>

### Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): <input checked="" type="checkbox"/> Attached, Document ID: <u>1</u>
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: <u>1</u>
4. List of Exempt Emissions Units: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
5. Fugitive Emissions Identification: <input checked="" type="checkbox"/> Attached, Document ID: <u>1</u> <input type="checkbox"/> Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

# FACILITY INFORMATION

## C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

### Additional Requirements for FESOP Applications N/A

- |   |
|---|
| 1. List of Exempt Emissions Units:<br><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (no exempt units at facility) |
|---|

### Additional Requirements for Title V Air Operation Permit Applications N/A

- |   |
|---|
| 1. List of Insignificant Activities: (Required for initial/renewal applications only)<br><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (revision application)   |
| 2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)<br><input type="checkbox"/> Attached, Document ID: _____<br><input type="checkbox"/> Not Applicable (revision application with no change in applicable requirements)   |
| 3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)<br><input type="checkbox"/> Attached, Document ID: _____<br><p>Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.</p> |
| 4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)<br><input type="checkbox"/> Attached, Document ID: _____<br><input type="checkbox"/> Equipment/Activities Onsite but Not Required to be Individually Listed<br><input type="checkbox"/> Not Applicable  |
| 5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)<br><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable   |
| 6. Requested Changes to Current Title V Air Operation Permit:<br><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable  |

**FACILITY INFORMATION**

**C. FACILITY ADDITIONAL INFORMATION (CONTINUED)**

**Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program**

1. Acid Rain Program Forms:

Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):

Attached, Document ID: \_\_\_\_\_  Previously Submitted, Date: \_\_\_\_\_

Not Applicable (not an Acid Rain source)

Phase II NO<sub>x</sub> Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):

Attached, Document ID: \_\_\_\_\_  Previously Submitted, Date: \_\_\_\_\_

Not Applicable

New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):

Attached, Document ID: \_\_\_\_\_  Previously Submitted, Date: \_\_\_\_\_

Not Applicable

2. CAIR Part (DEP Form No. 62-210.900(1)(b)):

Attached, Document ID: \_\_\_\_\_  Previously Submitted, Date: \_\_\_\_\_

Not Applicable (not a CAIR source)

3. Hg Budget Part (DEP Form No. 62-210.900(1)(c)):

Attached, Document ID: \_\_\_\_\_  Previously Submitted, Date: \_\_\_\_\_

Not Applicable (not a Hg Budget unit)

**Additional Requirements Comment**

## EMISSIONS UNIT INFORMATION

Section [1] of [2]

In-Line Kiln/Raw Mill

### III. EMISSIONS UNIT INFORMATION

**Title V Air Operation Permit Application** - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

**Air Construction Permit or FESOP Application** - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

**Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application** - Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

**In-Line Kiln/Raw Mill****A. GENERAL EMISSIONS UNIT INFORMATION****Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)
- The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
- The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

**Emissions Unit Description and Status**

1. Type of Emissions Unit Addressed in this Section: (Check one)
- This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
- This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
- This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: **In-Line Kiln/Raw Mill**

3. Emissions Unit Identification Number: **004**

4. Emissions Unit Status Code: <b>A</b>	5. Commence Construction Date:	6. Initial Startup Date: <b>2/17/2003</b>	7. Emissions Unit Major Group SIC Code: <b>32</b>
--	--------------------------------	--	---

8. Federal Program Applicability: (Check all that apply) **N/A**

- Acid Rain Unit
- CAIR Unit
- Hg Budget Unit

9. Package Unit:

Manufacturer: **Polysius**

Model Number:

10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment:



**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

**In-Line Kiln/Raw Mill**

**Emissions Unit Control Equipment/Method: Control 1 of 1**

- |  |
|--|
| 1. Control Equipment/Method Description:<br><b>Baghouse – High Temperature</b> |
| 2. Control Device or Method Code: <b>016</b>                                   |

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

**In-Line Kiln/Raw Mill**

**B. EMISSIONS UNIT CAPACITY INFORMATION**

**(Optional for unregulated emissions units.)**

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Process or Throughput Rate: <b>210 TPH (1-hr) dry preheater feed rate, 1,684,578 tons/consecutive 12-mo.</b>
2. Maximum Production Rate: <b>120 TPH (1-hr) clinker; 965,425 tons/consecutive 12-mo.</b>
3. Maximum Heat Input Rate: million Btu/hr <b>458 (24-hr)</b>
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8,760 hours/year
6. Operating Capacity/Schedule Comment:

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

**In-Line Kiln/Raw Mill**

**C. EMISSION POINT (STACK/VENT) INFORMATION**

**(Optional for unregulated emissions units.)**

**Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram: <b>Kiln</b>		2. Emission Point Type Code: <b>1</b>	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: <b>V</b>		6. Stack Height: <b>315 feet</b>	
		7. Exit Diameter: <b>9.42 feet</b>	
8. Exit Temperature: <b>205°F (mill operating)</b>		9. Actual Volumetric Flow Rate: <b>194,000 acfm (mill operating)</b>	
		10. Water Vapor: <b>6.5 %</b>	
11. Maximum Dry Standard Flow Rate: <b>144,000 dscfm</b>		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: <b>Common baghouse for raw mill and kiln</b>			

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

In-Line Kiln/Raw Mill

CURRENT SEGMENTS

**D. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate:** Segment 1 of 6

1. Segment Description (Process/Fuel Type): <b>Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Preheater Kiln</b>		
2. Source Classification Code (SCC): <b>3-05-006-23</b>		3. SCC Units: <b>Tons Clinker</b>
4. Maximum Hourly Rate: <b>120</b>	5. Maximum Annual Rate: <b>965,425</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

**Segment Description and Rate:** Segment 2 of 6

1. Segment Description (Process/Fuel Type): <b>Industrial Processes; In-Process Fuel Use; Bituminous Coal; Cement Kiln/Dryer – Kiln and Precalciner</b>		
2. Source Classification Code (SCC): <b>3-90-002-01</b>		3. SCC Units: <b>Tons Burned</b>
4. Maximum Hourly Rate: <b>17.6</b>	5. Maximum Annual Rate: <b>154,310</b>	6. Estimated Annual Activity Factor:
7. <del>Maximum</del> Typical % Sulfur: <b>0.7</b>	8. <del>Maximum</del> Typical % Ash: <b>7.9</b>	9. Million Btu per SCC Unit: <b>26</b>
10. Segment Comment: <b>Hourly rate based 458 mmbtu/hr @ 26 mmbtu/ton. Annual rate based on the hourly rate and 8,760 hr/yr. Typical % sulfur, % ash, and MMBtu/ton burned based on typical fuel analysis data.</b>		

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

In-Line Kiln/Raw Mill

CURRENT SEGMENTS

**D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)**

**Segment Description and Rate:** Segment 3 of 6

1. Segment Description (Process/Fuel Type): <b>Industrial Processes; In-Process Fuel Use; Natural Gas; Cement Kiln/Dryer – Kiln and Precalciner</b>		
2. Source Classification Code (SCC): <b>3-90-006-02</b>	3. SCC Units: <b>Million Cubic Feet Burned</b>	
4. Maximum Hourly Rate: <b>0.436</b>	5. Maximum Annual Rate: <b>3,821.0</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: <b>negligible</b>	8. Maximum % Ash: <b>negligible</b>	9. Million Btu per SCC Unit: <b>1,050</b>
10. Segment Comment: <b>Hourly rate based on 458 mmbtu/hr @ 1,050 mmbtu/mmcf.</b>		

**Segment Description and Rate:** Segment 4 of 6

1. Segment Description (Process/Fuel Type): <b>Industrial Processes; In-Process Fuel Use; Coke – Petroleum Coke in Kiln and Precalciner</b>		
2. Source Classification Code (SCC): <b>3-90-008-99</b>	3. SCC Units: <b>Tons Burned</b>	
4. Maximum Hourly Rate: <b>16.96</b>	5. Maximum Annual Rate: <b>148,596</b>	6. Estimated Annual Activity Factor:
7. <del>Maximum</del> Typical % Sulfur: <b>0.5 – 1.0</b>	8. <del>Maximum</del> Typical % Ash: <b>0.5 – 5.0</b>	9. Million Btu per SCC Unit: <b>27</b>
10. Segment Comment: <b>Hourly rate based 458 mmbtu/hr @ 28 mmbtu/ton. Annual rate based on the hourly rate and 8,760 hr/yr. Typical % sulfur, % ash. burned based on AP-42 Appendix A. MMBtu/ton based on in-house periodic analyses.</b>		

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

In-Line Kiln/Raw Mill

CURRENT SEGMENTS**Segment Description and Rate:** Segment 5 of 6

1. Segment Description (Process/Fuel Type): <b>Industrial Processes; In-Process Fuel Use; Natural Gas; Raw Mill</b>		
2. Source Classification Code (SCC): <b>3-99-900-03</b>		3. SCC Units: <b>Million Cubic Feet Burned</b>
4. Maximum Hourly Rate: <b>0.03</b>	5. Maximum Annual Rate: <b>266.97</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: <b>negligible</b>	8. Maximum % Ash: <b>negligible</b>	9. Million Btu per SCC Unit: <b>1,050</b>
10. Segment Comment: <b>Hourly rate based on 32 mmbtu/hr @ 1,050 mmbtu/mmcf.</b>		

**D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)**

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

**In-Line Kiln/Raw Mill**

**NEW SEGMENT**

**Segment Description and Rate:** Segment **6** of **6**

1. Segment Description (Process/Fuel Type): <b>Industrial Processes; In-Process Fuel Use; Automobile Shredder Residue (ASR) – in Kiln and Precalciner</b>		
2. Source Classification Code (SCC): <b>3-90-012-99</b>		3. SCC Units: <b>tons</b>
4. Maximum Hourly Rate: <b>10.0</b>	5. Maximum Annual Rate: <b>1200</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: <b>To be determined</b>	8. Maximum % Ash: <b>TBD</b>	9. Million Btu per SCC Unit: <b>TBD</b>
10. Segment Comment: <b>Maximum Hourly Rate based on a maximum of 30% heat input replacement.</b>		

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

In-Line Kiln/Raw Mill

**I. EMISSIONS UNIT ADDITIONAL INFORMATION**

**Additional Requirements for All Applications, Except as Otherwise Stated**

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>1</u> <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>1</u> <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>April 2005</u>
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>April 2005</u> <input type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable



EMISSIONS UNIT INFORMATION

Section [1] of [2]

In-Line Kiln/Raw Mill

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

Additional Requirements for Title V Air Operation Permit Applications N/A

1. Identification of Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____
2. Compliance Assurance Monitoring: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Alternative Methods of Operation: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

Additional Requirements Comment

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## EMISSIONS UNIT INFORMATION

Section [2] of [2]

Unregulated shredder and screen Unit

### III. EMISSIONS UNIT INFORMATION

**Title V Air Operation Permit Application** - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

**Air Construction Permit or FESOP Application** - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

**Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application** - Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

**EMISSIONS UNIT INFORMATION**

Section [2] of [2]

Unregulated shredder and screen Unit

**A. GENERAL EMISSIONS UNIT INFORMATION**

**Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

**Emissions Unit Description and Status**

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: **Shredder and Screen**

3. Emissions Unit Identification Number: **xxx**

4. Emissions Unit Status Code: <b>C</b>	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: <b>32</b>
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8. Federal Program Applicability: (Check all that apply) **N/A**

Acid Rain Unit

CAIR Unit

Hg Budget Unit

9. Package Unit:  
Manufacturer: \_\_\_\_\_ Model Number: \_\_\_\_\_

10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment:  
**Request this temporary unit to be unregulated.**

**EMISSIONS UNIT INFORMATION**

Section [2] of [2]

Unregulated shredder and screen Unit

**Emissions Unit Control Equipment/Method: Control 1 of 1**

1. Control Equipment/Method Description: <b>Water Spray</b>
2. Control Device or Method Code: <b>061</b>

**EMISSIONS UNIT INFORMATION**

Section [2] of [2]

Unregulated shredder and screen Unit

**D. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate: Segment 1 of 2**

1. Segment Description (Process/Fuel Type):  <b>Diesel Fuel usage Internal Combustion Engine</b>		
2. Source Classification Code (SCC): <b>20200102</b>		3. SCC Units: <b>1000 gallons</b>
4. Maximum Hourly Rate: <b>0.013</b>	5. Maximum Annual Rate: <b>1.58</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.5	8. Maximum % Ash:	9. Million Btu per SCC Unit: 137
10. Segment Comment: <b>710 hp = 1.8 mmbtu/hr</b> <b>x 1000 gal/137 mmbtu = 13 gal/hr</b> <b>x 120 hr = 1580 gallons</b>		

**Segment Description and Rate: Segment 2 of 2**

1. Segment Description (Process/Fuel Type): <b>Industrial Processes; In-Process Fuel Use; Automobile Shredder Residue (ASR)</b>		
2. Source Classification Code (SCC): <b>3-90-012-99</b>		3. SCC Units: <b>tons</b>
4. Maximum Hourly Rate: <b>10.0</b>	5. Maximum Annual Rate: <b>1200</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: <b>To be determined</b>	8. Maximum % Ash: <b>TBD</b>	9. Million Btu per SCC Unit: <b>TBD</b>
10. Segment Comment:		

**EMISSIONS UNIT INFORMATION**

Section [2] of [2]

Unregulated shredder and screen Unit

**I. EMISSIONS UNIT ADDITIONAL INFORMATION**

**Additional Requirements for All Applications, Except as Otherwise Stated**

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>1</u> <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>1</u> <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>1</u> <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable



**ATTACHMENT 1**

**LIMITED TRIAL TEST OF AUTO SHREDDER RESIDUE**

**DESCRIPTION OF PROPOSED PROJECT**

**AIR CONSTRUCTION PERMIT APPLICATION**

**SUBMITTED SEPTEMBER 10, 2009**



## **ATTACHMENT 1**

### **DESCRIPTION OF PROPOSED PROJECT**

Suwannee American Cement (SAC) operates a cement plant located in Branford, Florida. The cement plant consists of a dry-process kiln with preheater, precalciner, and clinker cooler capable of producing up to 965,425 tons per year of clinker. The cement kiln is permitted to utilize coal, natural gas, and petroleum coke as fuels. SAC is requesting 20 calendar days within a 12-month period to evaluate auto shredder residue (ASR) as alternative fuels for the kiln. This air construction (AC) permit application is submitted following discussions and the suggestions of the Department as an abbreviated trial following the submittal of an AC permit application and related Requests for Additional Information (RAI) for a longer trial (see details of FDEP Project 1210465-016-AC).

The amount of material of ASR requested is based on limiting the expected mercury (Hg) input from ASR to the kiln system to 2.4 pounds. Based on a meeting held at the Department in Tallahassee, Florida with Jeff Koerner and Susan Devore with the Department, Krishna Cole with SAC and James Wold with Gerdau Ameristeel on September 4, 2009, the best available ASR analysis data indicates 1.0 ppm of Hg and thus 1,200 tons of ASR should sufficiently limit Hg potential emissions from ASR to 2.4 pounds or less.

SAC requests to test trial ASR at three or more levels of input to replace up to 30% of the required heat input for operation at full capacity production. SAC expects testing to last 20 days or less based on the amount of material requested to be tested. Given the unique nature of the material and market conditions, SAC is requesting that the permit last for up to one year to complete the testing. The time period and the amount of material is requested to provide time to evaluate each step in this process: to import, store, and handle/mix. During the trial period, SAC will determine the amount of material that will be needed to obtain the desired kiln fuel mix. Further details of the process are provided below.

## TEST MATERIAL

Auto Shredder Residue (ASR) is a byproduct of the metal recycling process and is a mixture of non-ferrous materials including plastics, foam, textiles, rubber, and glass that comes from shredded consumer products (primarily scrap automobiles). Only the byproduct of shredded automobiles (no residential or industrial appliances) will be used for this test trial.

While ASR is considered a byproduct, it contains material of significant heating value. The efficient thermal incineration of a cement kiln can provide an alternative use of both the material heat content and a disposal method by incorporation into cement product. Thus, use of ASR in cement production will provide a reduction of fossil fuel usage and will eliminate a substantial amount of landfilled waste. As well, the use of this material for fuel will effectively reduce greenhouse gas emissions due to the reduced mining, transport, and use of fossil fuels.

## MATERIAL FLOW AND PROCESS DESCRIPTION

ASR for this test trial will originate at the Gerdau Ameristeel (Gerdau) facility located in Baldwin, Florida. As discussed in the RAIs, of FDEP project 1210465-016-AC, Gerdau Ameristeel, Jacksonville will submit their Source Control Program to EPA Region IV division for review and qualification prior to acceptance of any material by SAC.

Gerdau expects to be able to shred 400 tons per day of ASR for this trial. Gerdau may need to re-shred some material to meet the requested size for SAC of 1" inch diameter or less. While Gerdau expects to be able to shred up to 400 tons per day, storage capacity at Gerdau is expected to limit the shredding and thus shredding of 1200 tons for the test trial will occur at separate intervals. However, based on the expected daily shredding capacity, Gerdau expects to create a sample for analysis from each 400-ton pile (i.e., 3 samples). Gerdau will collect a representative sample and analyze (according to EPA SW-846 methods) the initial stockpile (approximately 400 tons) of ASR for waste classification, total RCRA metals and thallium, and total PCB

concentration prior to shipment to SAC. For this initial stockpile, the results of this analysis will be provided to SAC prior to or at delivery of ASR to SAC. SAC shall notify the Department 48 hours prior to commencement of test trial, and shall make the initial results a part of its notice of commencement. Gerdau shall deliver the results of all analysis to SAC as soon as the results become available. SAC will try to coordinate its sampling of ASR to match the shipments quantities from Gerdau with the goal to have comparable analytical data from SAC and Gerdau. All results will be made part of a final report to the Department.

The materials will be transported to SAC's Branford facility by covered truck from Gerdau and will be stored on a paved surface under cover at the plant site which is currently controlled for PM emissions by water spray. The material typically has a moisture content of ten percent so processing of the material should be considered a wet process (in comparison to definition of wet processing of crushed stone AP-42, 11.19.2.2). The material will be delivered to a live bottom hopper by front loader which feeds the temporary Schenck feeder system. The Schenck feeder will measure and dose the material pneumatically through the existing flyash injection feed lines. The system will be integrated with the coal fuel feeding controls currently in operation and operated from the control room. The Schenck feed data will be monitored and recorded by SAC's PI Data Retrieval System; and all fuel feed and dry preheater feed data will be made part of the final report to the Department.

#### ASR OPTIONAL RE-GRINDING PROCESS AT SAC

SAC requests the option to re-shred the received ASR from Gerdau. This option is requested due to the potential occurrence that received ASR from Gerdau may plug the kiln injection system. If this occurs, SAC will contact Gerdau to request additional shredding to be conducted on all future shipments to SAC. In the event that the ASR cannot be re-shredded at Gerdau to the needed size to prevent plugging, SAC requests that the amount of re-shredding at SAC be of up to 1200 tons. SAC requests that re-shredding be conducted by a temporary diesel shredding and screening system. The temporary shredding and screening system is a Doppstadt AK Series shredder followed by a SM Series trommel screen. According to the salespersons, the shredder and screen to be rented for this process is expected to shred at a rate of 15 tons per hour. To

estimate emissions from shredding and screening of 1200 tons of ASR, two conservative assumptions are made: 1) only 10 tons per hour may be shredded and screened of ASR, and 2) the largest shredding and screening system (AK Grinder, model 630 and SM series trommel, model 726) would be used. This re-shredding and screening system would be conducted in between the stockpile and the Schenck feeder system described above and shown in Figure 1 as "location for optional shredding". The shredded material will be stored inside the gypsum storage building. Shredding and screening will be conducted on a concrete surface area outside of the gypsum area as shown on Figure 1. The material typically has a moisture content at ten percent. Spray bars will be provided on the system for control of fugitive emissions. As stated above, shredding of a material with such moisture content is defined as wet processing and should not result in significant fugitive emissions. The goal of the shredding at SAC is to create a material having an average diameter that will not plug the injection system. Currently the material size is expected to be one inch or smaller. However, this test trial will be used to determine if such a diameter is adequate to not plug the system. Thus, re-shredding on-site is requested. The potential emissions are estimated in Table 1. Based on these low potential emissions and the temporary nature of the optional shredding and screening system, it is requested that the system be considered an unregulated emission unit.

Table 1: Emissions from handling and re-shredding of ASR at SAC

Estimate of ARS Processing emissions  
 SAC, Branford Plant  
 Emission Calculations

STEP	Action/Tasks	generic description	% of			PM Emissions tons	PM <sub>10</sub> Emissions tons	SO <sub>2</sub> Emissions tons	CO Emissions tons	NO <sub>x</sub> +NMHC Emissions tons	
			Total Throughput	PM Emission Factor <sup>b</sup>	PM <sub>10</sub> Emission Factor <sup>b</sup>						Emission Factors <sup>c</sup>
1	Receive materials by covered truck.										
2	Store under cover (to prevent stormwater runoff and fugitives).										
3	Load material by frontend loader into optional shredder hopper. "										
4	optional AK series shredder AK Series shredder engine emissions 610 horse power engine operating for 120 hours	loading without cc shredding engine	100 100	0.0038729 lb/ton 0.0012 lb/ton	0.0018318 lb/ton 0.00054 lb/ton	0.00232 0.00072 0.00199	0.00110 0.00032 0.00199	0.15 gr/bhp.hr 0.929 gr/bhp.hr 3.7 gr/bhp.hr 3.0 gr/bhp.hr	0.0738	0.2940	0.2424
	optional SM Series screen " Screener engine emissions 100 horse power engine operating for 120 hours	screening engine	100	0.00014 lb/ton	0.000046 lb/ton	0.00008 0.00265	0.00003 0.00265	0.2 gr/bhp.hr 0.929 gr/bhp.hr 2.6 gr/bhp.hr 3.0 gr/bhp.hr	0.0123	0.0344	0.0397
5	Half (1/2) inch or less material fed pneumatically into existing flyash feed line or stored under cover.	conveying	100	0.00014 lb/ton	0.000046 lb/ton	0.00008	0.00003				
6	Prepared material stored under cover will be loaded by frontend loader into the pneumatic feed hopper. "	loading without cover	100	0.0038729 lb/ton	0.0018318 lb/ton	0.00232	0.00110				
<b>Total =</b>						<b>0.010</b>	<b>0.007</b>	<b>0.086</b>	<b>0.328</b>	<b>0.282</b>	

Based on process rates of: **total = 1,200 tons of ARS**

Notes:

<sup>a</sup> This screen will operate as a wet screen most of the time. However since it may operate without water sprays, emissions are calculated for this emissions point. Loading factor calculated below.

<sup>b</sup> Emission factors of screening, crushing, and conveying based on AP-42 Table 11.19.2-2. Alternate fuel PM factors assumed to have similar emissions as aggregate operation. Controlled emission factors are used since the moisture content of the raw material is estimated to be >1.5% (AP-42 basis for "controlled" emissions).

<sup>c</sup> DoppStadtUS, SM Series trommel, shredding at minimum of 10 tn/hr of ASR having diesel engine maximum size 100 horse power (see attached brochure for SM model 726). Total shredding requires 120 hours. 100 and 610 HP Tier 3 engine emission factors stated below. AP-42, 3.3-1 emission factors= 0.929gr/bhp\*hr-SO<sub>x</sub>.

Emission Factors For Process Fugitive Emissions

Material Transfer Operations

$E = k (0.0032) (US)^{1.3} / (M/2)^{0.4}$  Reference: AP-42 Sector 13.2.4

k = 0.74 TSP Factor 1.000 Ratio/TSP  
 0.95 PM10 0.473 Ratio/TSP  
 0.11 PM2.5 0.149 Ratio/TSP  
 U = 7.3 MPH Average Wind Speed

Material	Condition	Moisture M. %	Emission Factor, E		
			TSP Lbs./hr	PM10 Lbs./ton	PM2.5 Lbs./ton
ARS - estimate as coal	Normal	2	0.00387	0.00183	0.00058

Moisture content selected as conservative estimate. Analytical data shows moisture of higher values

Engine Power	Tier	Year	CO	HC	NMHC G/Gal TS	NO <sub>x</sub>	PM
(100 ≤ hp < 175)	Tier 2	2003	3.70	-	4.90	-	0.22
	Tier 3	2007	3.70	-	3.00	-	-†
(600 ≤ hp < 750)	Tier 2	2002	2.60	-	4.80	-	0.15
	Tier 3	2006	2.60	-	3.00	-	-†

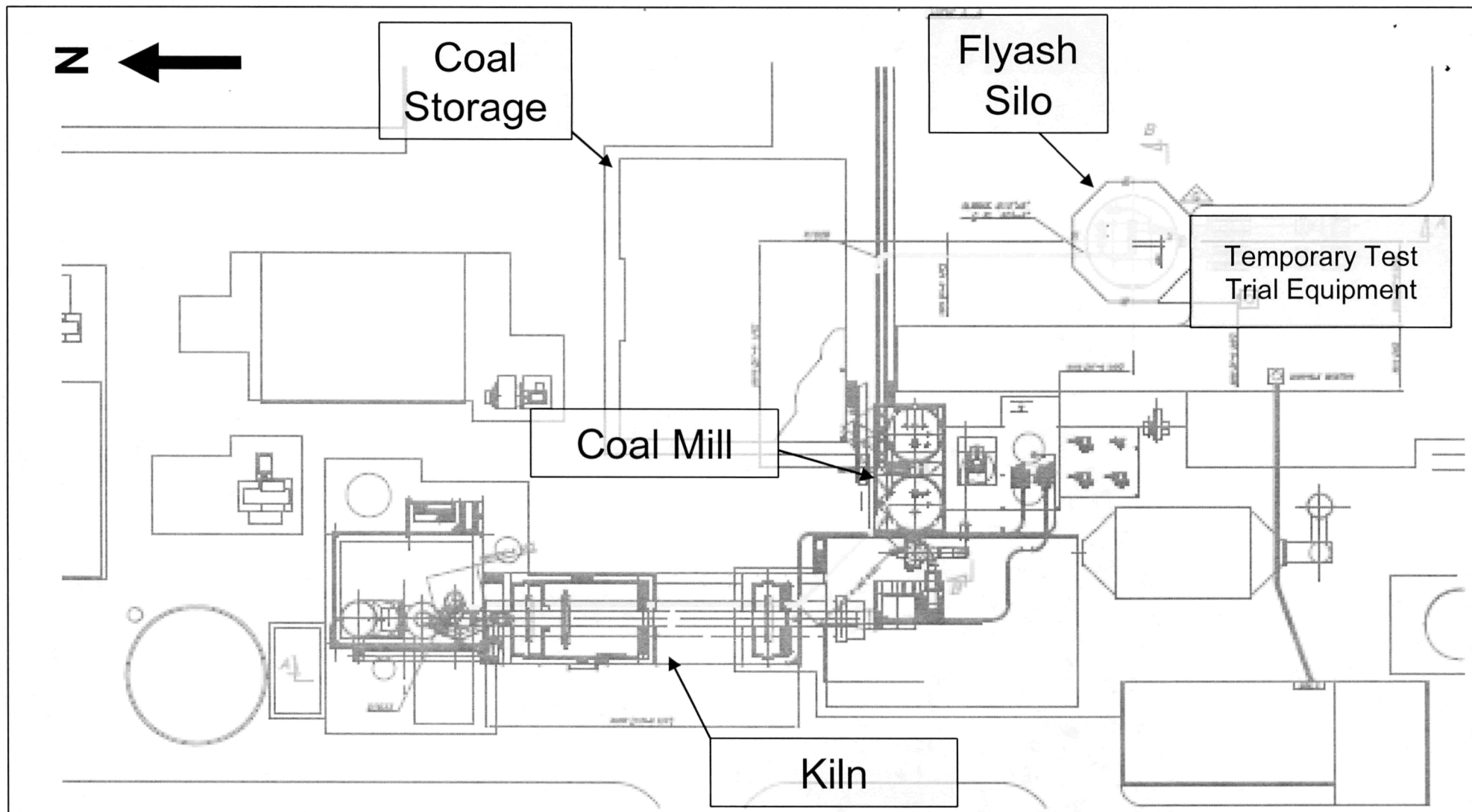


Figure 1: Overview layout of SAC facility and proposed location of test trial equipment.

## Secondary Fuels

### Site location and Traffic Flow

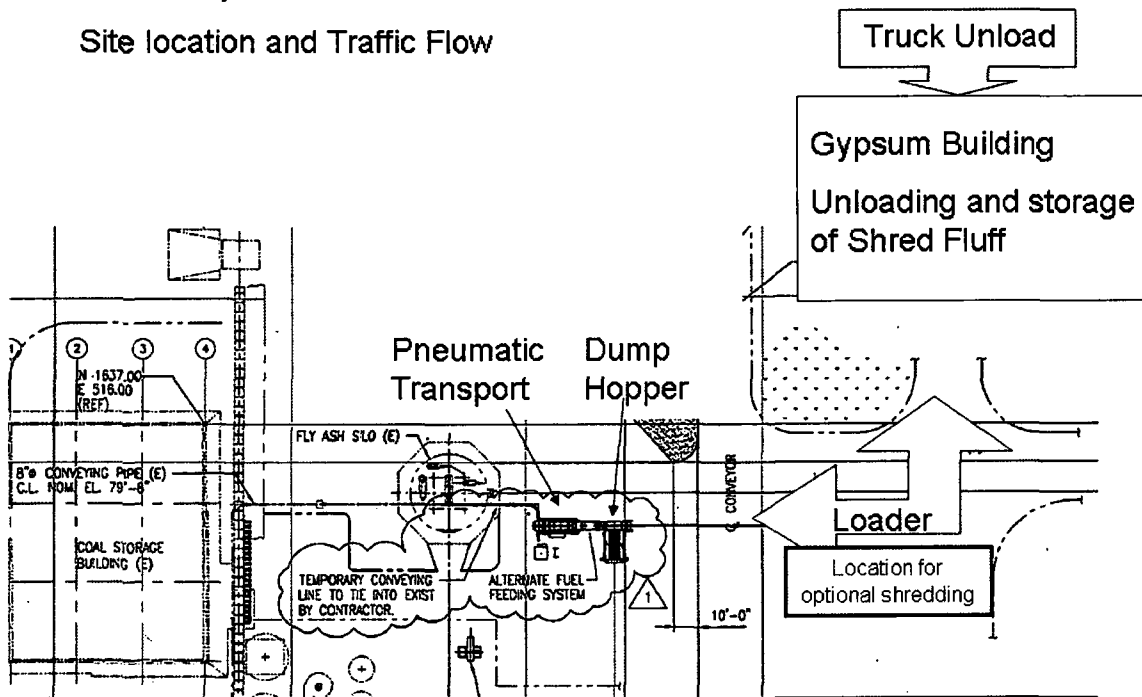


Figure 2: Layout of ASR storage, handling, optional shredding and input to system.

## MATERIAL SAMPLING AND ANALYSIS

The Quality Plan described below will be followed for ASR sample collection and analysis at SAC; the Plan establishes the following:

- a) Sampling Location(s)
- b) Sample size
- c) Minimum frequency
- d) Who collects
- e) Sample preparation
- f) Who analyzes (external/internal)
- g) Type of analysis
- h) Material Traceability

During the proposed test trials SAC proposes the following minimum Quality Plan:

- a) **Sampling Location** – Onsite sampling will occur between storage and prior to introduction to the Schenck Feeding System. See Figure 3.
- b) **Sample Size** – One Gallon Container (approximate)
- c) **Minimum Frequency** – SAC shall collect grab samples of ASR from the fuel feed belt during ASR input at least every four hours of ASR input to the kiln. All samples collected during each day of operation (12 am to 12 am) will be composited and analyzed.
- d) **Who will collect the samples** – Shift Lab Technician
- e) **Sample Preparation** – as necessary per specific lab analysis requirements
- f) **Who will analyze the samples** –
  - Internal Lab Analysis (if possible, otherwise conducted by an external lab) will analyze for Calorific Value [Btu/lb], Volatility [%], %Ash, %Sulfur, %Moisture, Particle Size.
  - External Lab Analysis will analyze for total RCRA metals and thallium, and PCB concentrations. Due to the physical properties of ASR, the samples may have to be sent to external laboratories for analysis. This means that results may not be available for up to several weeks after samples were taken.
- g) **Type of Analysis** –

Analysis of the samples will at a minimum consist of the following:

  - Internal Lab Analysis (if possible, otherwise conducted by an external lab). Internal Lab Analysis will use established methods that are traceable to NIST or ASTM standards or other approved methods.
  - Calorific Value [Btu/lb]



- Volatiles [%]
- Ash [%]
- Sulfur [%]
- Moisture [%]
- Particle Size
- External Lab Analysis will use SW-846 EPA methods as stated below or other approved methods by the Department. Written approval from the Department will be required prior to use of other methods.
- Total Metal Content (EPA SW-846, 6010b), including mercury (7471a) and thallium (EPA SW-846, 7471a). The analysis and material usage will be used to determine the amount of mercury and thallium input to the system by material balance. All mercury and thallium inputs are assumed to be emitted.
- Total PCB Concentration (EPA SW-846, 8082 and 3550 (3550 is method for sample preparation at the laboratory))

h) Traceability - the material has identification and the traceability is by date of production or receiving.

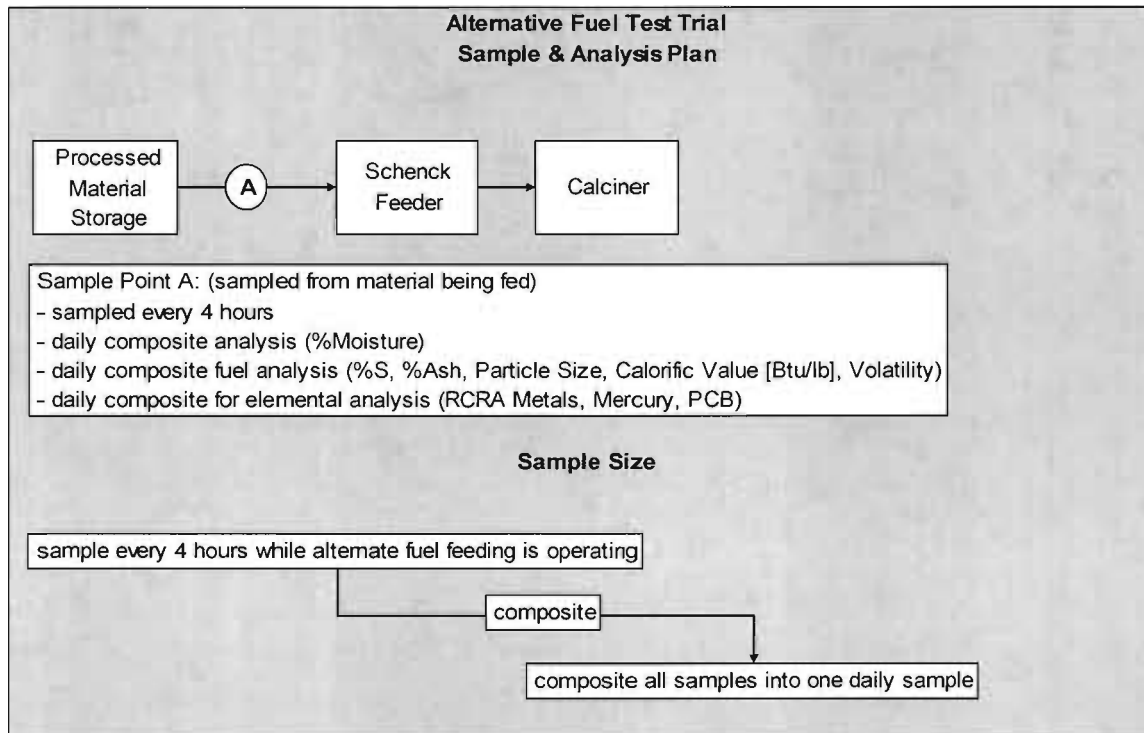


Figure 3: Summary of SAC's Sample and Analysis Plan.

### EMISSIONS MONITORING & RECORDKEEPING

SAC will monitor emissions using the Continuous Emissions Monitoring Systems (CEMS) for the following pollutants.

- SO<sub>2</sub> – CEMS
- NO<sub>x</sub> – CEMS
- VOC (THC) – CEMS
- Opacity – COMS
- CO – Process Monitors
- Mercury – SAC will collect grab samples of ASR as described above.

The following minimum records will be obtained for all tests:

- Fuel Analysis Results (as required above)
- Emissions Monitoring Results (as required above)
- Average Fuel Feed Rates [tons/hour]
- Average Kiln Feed Rates [tons/hour]

- Average Clinker Production [tons/hour]
- Total Fuel Consumption [tons]
- Number of stops during testing
- Reason of stops during testing

### RESULTS OF TRIAL

SAC will report all results of required material analysis, continuous monitoring, and kiln process data to the Department within 90 days of the conclusion of the test trial.

## EMISSIONS INFORMATION

There will not be any change in kiln production rate as a result of this project. A brief explanation regarding specific emissions control and estimates is given below:

### **Emissions based on Analytical data**

Metal emissions can be estimated from the analytical data of ASR metal content. The analysis was submitted in the November 7, 2009 RAI response for Project 1210465-016-AC and is provided below.

	<b>Fluff Ocala</b>	<b>Fluff Jacksonville</b>
<b>Moisture % (as received)</b>	2.60	23.71
<b>Ash %</b>	35.59	45.81
<b>Volatile %</b>	56.82	54.31
<b>Fixed Carbon</b>	9.04	7.77
<b>Sulfur %</b>	0.30	0.43
<b>Chlorine %</b>	0.44	1.93
<b>Fluorine ppm</b>	86	172*
<b>Mercury ppm</b>	1.03	0.85
<b>Beryllium ppm</b>	<1	<1
<b>Lead ppm</b>	720	810
<b>PCB</b>	**	**
<b>Chromium</b>	**	**
<b>Cadmium</b>	**	**

\* As Received (Not Dry Basis)      \*\* No Data

Table 2 - SAC alternative fuel analysis (sample size n = 1).

The following table provides estimates of emissions from ASR based on ASR analytical concentration data.

**Estimate of ARS Trial Burn emissions  
SAC, Branford Plant  
Emission Calculations**

ASR constituent	conc. ppm <sup>a</sup>	reference retention percent <sup>b</sup>	applied retention percent	coal emiss. fact AP-42, 11.6 lb/ton	comments	ASR tons	Pollutant	Emissions pounds
Mercury	0.94		0			1200	Hg	2.256
Lead	765	99.998	99.8			1200	Pb	3.672
Thallium (assumed analytical concentration)	10	99.98	99			1200	Th	0.24
chlorine <sup>c</sup>	1.185			0.14		1200	HCl	168
sulfur <sup>c</sup>	0.365			1.1	SCC3-05-006-23	1200	SO2	1320

**Notes:**

a See analytical data average provided in FDEP Project 1210465-016-AC, RAI response dated 11/7/2008, page 14 of 34.

b See reference of metal retention data provided in FDEP Project 1210465-016-AC, RAI response dated 11/7/2008, page 16 of 34.

c chlorine and sulfur content of ASR similar to coal. Apply coal emission factor from AP 42 11.6.

### **Carbon Monoxide Emissions**

CO emissions are not expected to increase since they can be controlled. In order to control CO emissions, SAC will closely monitor the combustion of all alternate fuels to ensure there is no partial combustion of the alternate fuels which could create constituents of partial combustion such as CO emissions. The SAC preheater/calciner is designed for the use of alternate fuels with reduced volatile content and large partial sizing by having the addition of a separate calciner chamber. This separate calciner chamber is referred to as a Combustion Chamber (see Image 1 below). This Combustion Chamber allows for the introduction of alternate fuels along with kiln feed, tertiary air (ambient air/combustion air) and mixing with other fuels (fine coal) to insure proper ignition with retention in a high temperature atmosphere to initiate combustion of the alternate fuel.

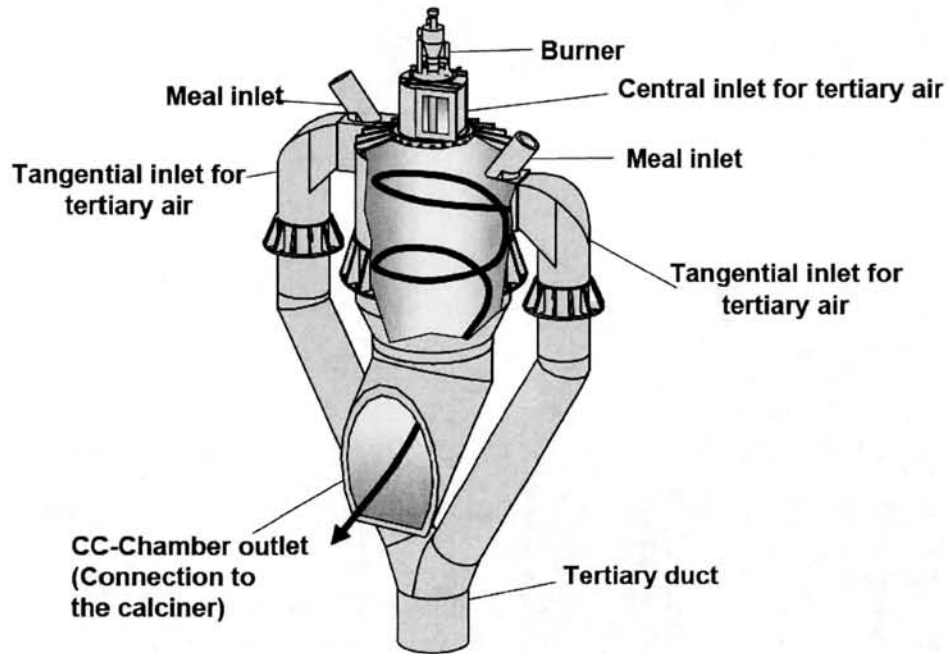


Image 1: Calciner Combustion Chamber

In addition the preheater is designed to extend retention time to provide long residence time at high temperatures to complete the combustion process. In addition, SAC will closely monitor the volatile content and particle sizing of the alternate fuels along with the combustion characteristics of the preheater/calciner to insure proper combustion of all fuel. Currently SAC operates with an oxygen rich combustion environment through the calciner and preheater assisting in the combustion process. In addition to this SAC monitors CO with process monitors in various stages of the preheater (CO Process Monitor at Kiln Inlet and 3<sup>rd</sup> Stage) and exit of the preheater (CO Process Monitor at ID Fan) to insure proper combustion. SAC will control the proper combustion through process controls such as changes in the location of the introduction of tertiary air, increase process draft and oxygen content through the process, changes in fine coal feed rates into the Combustion Chamber and/or changes in the kiln feed rates.

Through testing and monitoring of the alternate fuel prior to introduction and with combustion characteristics monitoring and process adjustments, SAC will be able to ensure proper and complete combustion of the alternate fuel with no generation of constituents of partial combustion such as CO.

### **NO<sub>x</sub> Emissions**

Nitrogen Oxide (NO<sub>x</sub>) emissions are not expected to change since they can be controlled by adjustments to the multistage combustion system timing, fuel input rates, and the selective non-catalytic reduction (SNCR) system.

### **Dioxin/Furans Emissions**

Emission of dioxin/furans (D/F) are not expected to change when using these fuels due to formation of D/F is a function of the exhaust gas residence time when at a temperature range of 700 to 400 °F which is independent of the fuel type.

### **Emissions Summary**

During the trial, SAC will monitor emissions as stated above to verify the expected effect on emissions. Material balance data will provide a measure of the estimated emissions of metals and HCl. It is expected that by substituting the fossil fuels (maximum 30% total heat input substitution) that are currently used as kiln fuel with an alternative fuels a beneficial result will be a greenhouse gas emissions reduction. In addition, use of the proposed materials provides a method to constructively utilize a material that would otherwise be sent to a landfill. Following completion of the trials and all testing results have been recorded and reported, PSD applicability will be reviewed.