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BUREAU OF AIR REGULATION

**AIR CONSTRUCTION PERMIT APPLICATION
FOR INSTALLATION OF
ACTIVATED CARBON INJECTION SYSTEM
AT WHEELABRATOR'S
SOUTH BROWARD FACILITY
FT. LAUDERDALE, FLORIDA**

Prepared For:

**Wheelabrator South Broward, Inc.
4400 South State Road 7
Ft. Lauderdale, Florida 33314**

Prepared By:

**Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653-1500**

September 2008

0838-7609

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APPLICATION FOR AIR CONSTRUCTION PERMIT

LONG FORM



Department of Environmental Protection

Division of Air Resource Management APPLICATION FOR AIR PERMIT - LONG FORM

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: Wheelabrator South Broward, Inc.	
2. Site Name: Wheelabrator South Broward	
3. Facility Identification Number: 0112119	
4. Facility Location... Street Address or Other Locator: 4400 South State Road 7 City: Ft. Lauderdale County: Broward Zip Code: 33314	
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: Jairaj Gosine, Plant Manager	
2. Application Contact Mailing Address... Organization/Firm: Wheelabrator South Broward, Inc. Street Address: 4400 South State Road 7 City: Ft. Lauderdale State: FL Zip Code: 33314	
3. Application Contact Telephone Numbers... Telephone: (954) 581-6606 ext. Fax: (954) 581-6705	
4. Application Contact E-mail Address: jgosine@wm.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 9/11/08	3. PSD Number (if applicable): 105C
2. Project Number(s): 0112119-010-A	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. ⁶²⁻⁵
- 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

This application is to request the ability to install an activated carbon injection system on the municipal solid waste combustor units 1, 2, and 3 in order to achieve greater mercury control and meet the revised New Source Performance Standards (NSPS). Additionally, a silo will be installed for onsite storage of the activated carbon prior to its use in the combustors. This application also requests changes in the emission limits for cadmium, mercury, lead, and particulate matter in order to be consistent with the revised NSPS. The revised NSPS are applicable after April 28, 2009.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
001	863 TPD MSW Combustor & Auxiliary Burners – Unit 1	AC1F	N/A
002	863 TPD MSW Combustor & Auxiliary Burners – Unit 2	AC1F	N/A
003	863 TPD MSW Combustor & Auxiliary Burners – Unit 3	AC1F	N/A
NA	Activated Carbon Storage Silo	AC1F	N/A

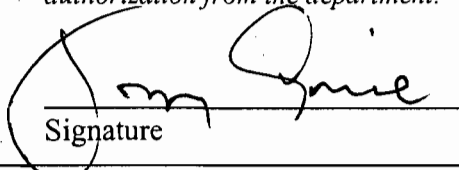
Application Processing Fee

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 : Jairaj Gosine, Plant Manager
2. Owner/Authorized Representative Mailing Address... Organization/Firm: Wheelabrator South Broward, Inc. Street Address: 4400 South State Road 7 City: Ft. Lauderdale State: FL Zip Code: 33314
3. Owner/Authorized Representative Telephone Numbers... Telephone: (954) 581-6606 ext. Fax: (954) 581-6705
4. Owner/Authorized Representative E-mail Address: jgosine@wm.com
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  Date

APPLICATION INFORMATION

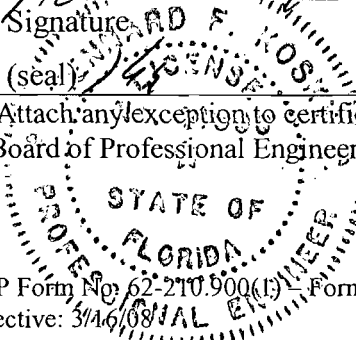
Application Responsible Official Certification

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, 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. Signature _____ Date _____

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: Kennard F. Kosky Registration Number: 14996
2. Professional Engineer Mailing Address... Organization/Firm: Golder Associates Inc.** Street Address: 6241 NW 23rd Street, Suite 500 City: Gainesville State: FL Zip Code: 32653
3. Professional Engineer Telephone Numbers... Telephone: (352) 336-5600 ext. Fax: (352) 336-6603
4. Professional Engineer E-mail Address: kkosky@golder.com
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: <u><i>Kennard F. Kosky</i></u> Date: <u>9/10/08</u> (seal) 

* Attach any exception to certification statement.

**Board of Professional Engineers Certificate of Authorization #00001670.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 17 East (km) 579.54 North (km) 2883.34		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 26 / 04 / 08 Longitude (DD/MM/SS) 80 / 12 / 13	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4953
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: Jairaj Gosine, Plant Manager
2. Facility Contact Mailing Address... Organization/Firm: Wheelabrator South Broward, Inc. Street Address: 4400 South State Road 7 City: Ft. Lauderdale State: FL Zip Code: 33314
3. Facility Contact Telephone Numbers: Telephone: (954) 581-6606 ext. Fax: (954) 581-6705
4. Facility Contact E-mail Address: jgosine@wm.com

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 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 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: 40 CFR 60, Subpart Cb; 40 CFR 60, Subpart E; and 40 CFR 60, Subpart Db.	

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Particulate Matter Total – PM	A	N
Particulate Matter – PM ₁₀	A	N
Sulfur Dioxide – SO ₂	A	N
Nitrogen Oxides – NO _x	A	N
Carbon Monoxide – CO	A	N
Fluoride – FL	A	N
Lead – Pb	B	N
Beryllium – H021	B	N
Cadmium – H027	B	N
Hydrogen Chloride – H106	A	N
Mercury – H114	B	N
Dioxin/Furan – DIOX	B	N

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

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:					

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 checked="" type="checkbox"/> Attached, Document ID: WSB-FI-C1 <input type="checkbox"/> Previously Submitted, Date: _____
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 checked="" type="checkbox"/> Attached, Document ID: WSB-FI-C2 <input type="checkbox"/> Previously Submitted, Date: _____
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 type="checkbox"/> Previously Submitted, Date: _____

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: Part B _____
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: Part B _____
4. List of Exempt Emissions Units: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" 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

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:
 Attached, Document ID: _____ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities: (Required for initial/renewal applications only)
 Attached, Document ID: _____ 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)
 Attached, Document ID: _____
 Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)
 Attached, Document ID: _____
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.
4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)
 Attached, Document ID: _____
 Equipment/Activities Onsite but Not Required to be Individually Listed
 Not Applicable
5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)
 Attached, Document ID: _____ Not Applicable
6. Requested Changes to Current Title V Air Operation Permit:
 Attached, Document ID: _____ Not Applicable

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_x 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)

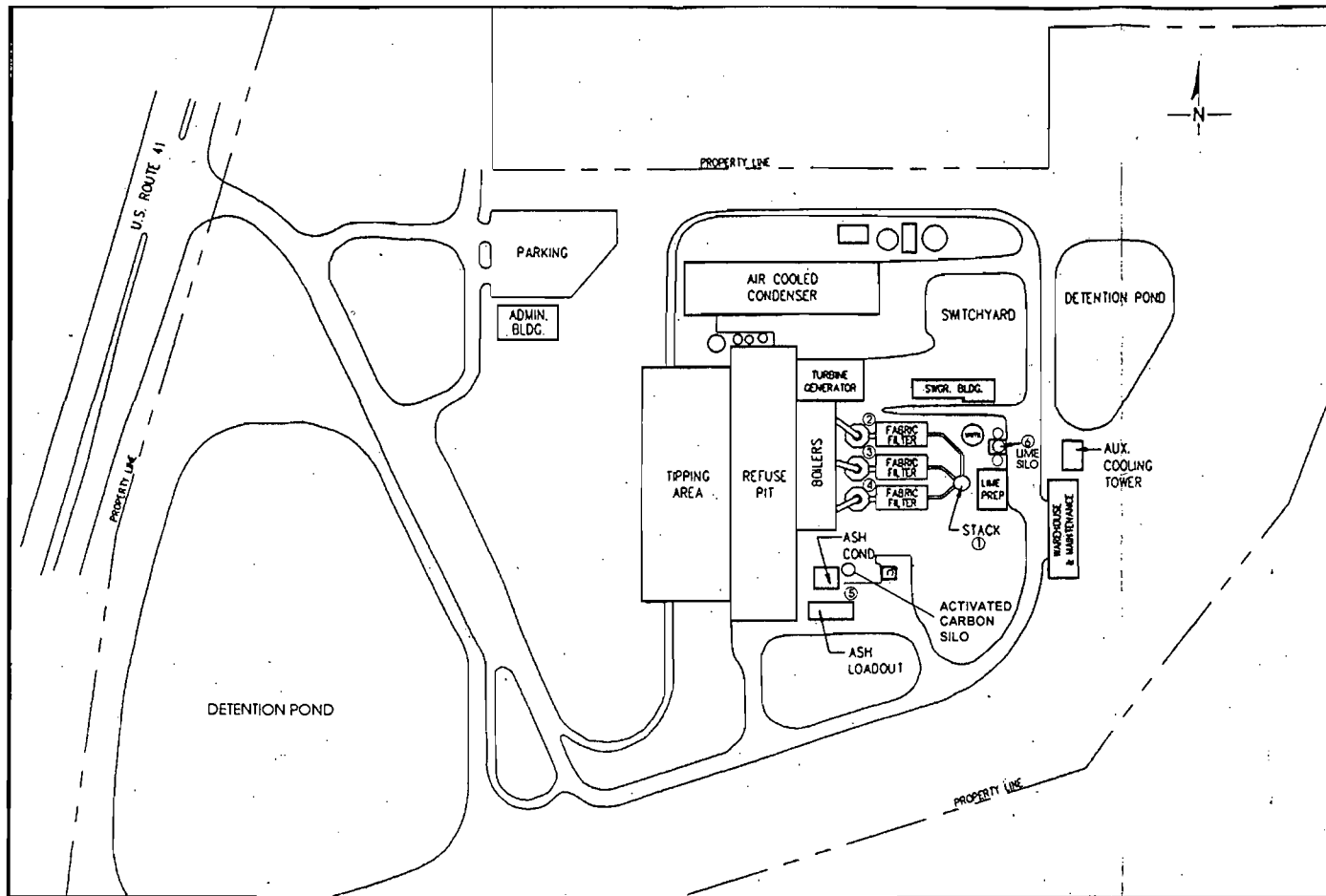
3. Hg Budget Part (DEP Form No. 62-210.900(1)(c)):

- Attached, Document ID: _____ Previously Submitted, Date: _____
 Not Applicable (not a Hg Budget unit)

Additional Requirements Comment

ATTACHMENT WSB-FI-C1

FACILITY PLOT PLAN



- ① Stack - 3 Flues (TV-001, TV-002, TV-003)
- ② Spray Dryer Absorber
- ③ Spray Dryer Absorber
- ④ Spray Dryer Absorber
- ⑤ Ash Conditioning System (TV-005)
- ⑥ Lime Silo (TV-004)

SITE PLAN
Wheelabrator South Broward, Inc.
Ft. Lauderdale, Florida

EXHIBIT
F-2

Attachment WSB-FI-C1
 Facility Plot Plan
 WSB-FI-C1.docx

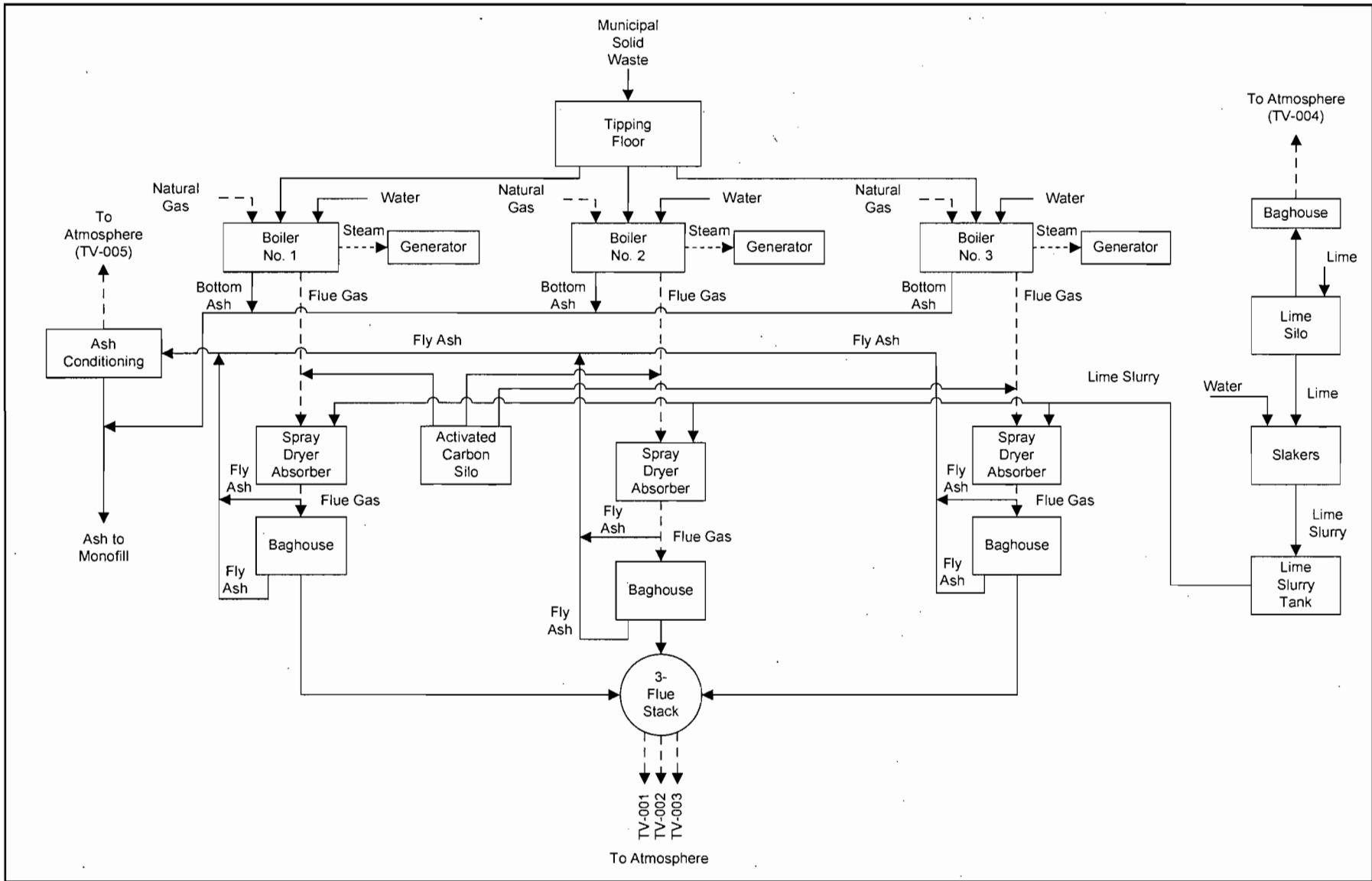
Source: Wheelabrator, 2008.

REV.	SCALE:	
DESIGN		
CADD	TZ	09/04/08
CHECK	SRM	09/10/08
REVIEW		



ATTACHMENT WSB-FI-C2

PROCESS FLOW DIAGRAM



Attachment WSB-FI-C2
 Process Flow Diagram, Wheelabrator South Broward
 Ft. Lauderdale, Florida

Process Flow Legend

- Solid/Liquid —————>
- Gas - - - - ->
- Steam - - - - ->

Filename: WSB-FI-C2.VSD

Date: 09/10/08



EMISSIONS UNIT INFORMATION

Section [1]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

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]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

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:

Three (3) 863-ton per day (TPD) Municipal Solid Waste (MSW) Combustors & Auxiliary Burners

3. Emissions Unit Identification Number: **001, 002, and 003**

4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date: 04/1991	7. Emissions Unit Major Group SIC Code: 49
--	--------------------------------	--	--

8. Federal Program Applicability: (Check all that apply)

- Acid Rain Unit
- CAIR Unit
- Hg Budget Unit

9. Package Unit:

Manufacturer: **Babcock and Wilcox**

Model Number:

10. Generator Nameplate Rating: **66.086 MW**

11. Emissions Unit Comment:

Generator nameplate rating of 66.086 MW is the facility total. All three units share a common stack containing one flue for each unit.

EMISSIONS UNIT INFORMATION

Section [1]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Emissions Unit Control Equipment/Method: Control 1 of 5

1. Control Equipment/Method Description:

Spray Dryer Absorber

2. Control Device or Method Code: **202**

Emissions Unit Control Equipment/Method: Control 2 of 5

1. Control Equipment/Method Description:

Fabric Filter High Temperature [T > 250 degrees Fahrenheit (°F)]

2. Control Device or Method Code: **016**

Emissions Unit Control Equipment/Method: Control 3 of 5

1. Control Equipment/Method Description:

Selective Non-Catalytic Reduction for NO_x control

2. Control Device or Method Code: **107**

Emissions Unit Control Equipment/Method: Control 4 of 5

1. Control Equipment/Method Description:

**Control of Percent Oxygen (O₂) in Combustion Air for CO control
(Grod Combustion Control)**

2. Control Device or Method Code: **033**

Emissions Unit Control Equipment/Method: Control 5 of 5

1. Control Equipment/Method Description:

Carbon Injection for Hg control

2. Control Device or Method Code: **207**

EMISSIONS UNIT INFORMATION

Section [1]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

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: Boiler Nos. 1, 2, and 3		2. Emission Point Type Code: 1	
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:	6. Stack Height: 195 feet	7. Exit Diameter: 7.5 Feet	
8. Exit Temperature: 300°F	9. Actual Volumetric Flow Rate: 169,000 acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: 80,000 dscfm		12. Nonstack Emission Point Height: Feet	
13. Emission Point UTM Coordinates... Zone: 17 East (km): 579.54 North (km): 2883.34		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) 26 / 04 / 08 Longitude (DD/MM/SS) 80 / 12 / 13	
15. Emission Point Comment: There is one stack containing one flue for each of the three MSW combustors. Stack parameters are average values for each flue. Stack parameters based on Title V permit application dated April 2005.			

EMISSIONS UNIT INFORMATION

Section [1]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type): Natural Gas Combustion		
2. Source Classification Code (SCC): 1-01-006-01		3. SCC Units: Million Cubic Feet Natural Gas Burned
4. Maximum Hourly Rate: 0.925	5. Maximum Annual Rate: 809.92	6. Estimated Annual Activity Factor: 10%
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 1,050
10. Segment Comment: Fuel used for auxiliary burners. Used as fuel during warm-up, startup, shutdown, and malfunctions, as well as other times when necessary and consistent with good combustion practice. Maximum hourly firing rate based on 323.6 MMBtu/hr heat input per unit. Maximum annual firing rate based on annual activity factor of 10% operation during the year (876 hr/yr).		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type): MSW Combustion		
2. Source Classification Code (SCC): 1-01-012-01		3. SCC Units: Tons Solid Waste Burned
4. Maximum Hourly Rate:	5. Maximum Annual Rate: 314,995	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.2	8. Maximum % Ash: 30	9. Million Btu per SCC Unit: 9
10. Segment Comment: MSW throughput limited to 863 TPD per unit (2,589 TPD total), and 323.6 MMBtu/hr as determined on a monthly average. Maximum annual rate based on one unit firing at 863 TPD and operating for 365 days/yr.		

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
CO	033		EL
DIOX	202	016	EL
FL	202	016	EL
H021 – Beryllium	202	016	EL
H027 – Cadmium	202	016	EL
H106 – Hydrogen Chloride	202		EL
H114 – Mercury	207	202, 016	EL
NO _x	107		EL
Pb	202	016	EL
PM	202	016	EL
PM ₁₀	202	016	EL
SO ₂	202		EL

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Carbon Monoxide – CO

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 33.9 lb/hour 148.5 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 100 ppmvd @ 7-percent O₂ (per MSW combustor unit) Reference: Permit No. 0112119-009-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustor unit.			
11. Potential, Fugitive, and Actual Emissions Comment:			

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Carbon Monoxide – CO

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 100 ppmvd @ 7% O₂	4. Equivalent Allowable Emissions: 33.9 lb/hour 148.5 tons/year
5. Method of Compliance: CEMS – 4-hour Block Average	
6. Allowable Emissions Comment (Description of Operating Method): 40 CFR 60.34b(a) and PSD-FL-105(B). Emissions per MSW combustor unit.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Dioxin/Furan – DIOX

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: DIOX		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 8.7x10 ⁻⁶ lb/hour 3.8x10 ⁻⁵ tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 30 ng/dscm @ 7-percent O ₂ (per MSW combustor unit) Reference: Permit No. 0112119-009-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustor unit.			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 30 ng/dscm @ 7-percent O₂	4. Equivalent Allowable Emissions: 8.7x10⁻⁶ lb/hour 3.8x10⁻⁵ tons/year
5. Method of Compliance: EPA Method 23. Test at least once annually [40 CFR 60.38b(b)]. Testing once every three years if test results < 15 ng/dscm.	
6. Allowable Emissions Comment (Description of Operating Method): 40 CFR 60.33b(c)(1)(ii) and PSD-FL-105(B). Emissions per MSW combustor unit.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Fluorides – FL

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: FL		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 1.29 lb/hour 5.66 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.0040 lb/MMBtu (per MSW combustor unit) Reference: Permit No. 0112119-009-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustor unit.			
11. Potential, Fugitive, and Actual Emissions Comment:			

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Fluorides - FL

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.0040 lb/MMBtu	4. Equivalent Allowable Emissions: 1.29 lb/hour 5.66 tons/year
5. Method of Compliance: EPA Method 13A, 13B, or modified Method 5 for fluorides. Every 5 years.	
6. Allowable Emissions Comment (Description of Operating Method): PSD-FL-105(B). Emissions per MSW combustor unit.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Beryllium – H021

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Beryllium – H021		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.0003 lb/hour 0.0013 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.001 mg/dscm @ 7-percent O₂ (per MSW combustor unit) Reference: Permit No. 0112119-009-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustor unit.			
11. Potential, Fugitive, and Actual Emissions Comment:			

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Beryllium – H021

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.001 mg/dscm @ 7-percent O₂	4. Equivalent Allowable Emissions: 0.0003 lb/hour 0.0013 tons/year
5. Method of Compliance: EPA Method 29, Annually	
6. Allowable Emissions Comment (Description of Operating Method): PSD-FL-105(B). Emissions per MSW combustor unit.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Cadmium – H027

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Cadmium – H027		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.011 lb/hour 0.046 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.035 mg/dscm @ 7-percent O₂ (per MSW combustor unit) Reference: 40 CFR 60, Subpart Cb		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustor unit. Hourly: 0.035 mg/dscm x 80,000 dscf/min x 60 min/hr x 1 m³/35.31467 ft³ x 1 lb/453592.4 mg = 0.0105 lb/hr Annual: 0.0105 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 0.046 TPY			
11. Potential, Fugitive, and Actual Emissions Comment:			

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Cadmium - H027

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.035 mg/dscm @ 7-percent O₂	4. Equivalent Allowable Emissions: 0.011 lb/hour 0.046 tons/year
5. Method of Compliance: EPA Method 29, Annually	
6. Allowable Emissions Comment (Description of Operating Method): 40 CFR 60, Subpart Cb Emissions per MSW combustor unit.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Hydrogen Chloride – H106

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Hydrogen Chloride – H106		2. Total Percent Efficiency of Control: 95	
3. Potential Emissions: 12.6 lb/hour		55 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 29 ppmvd @ 7-percent O₂ (per MSW combustor unit) Reference: Permit No. 0112119-009-AV			7. Emissions Method Code: 0
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustor unit.			
11. Potential, Fugitive, and Actual Emissions Comment:			

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Hydrogen Chloride – H106

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 29 ppmvd @ 7-percent O₂	4. Equivalent Allowable Emissions: 12.6 lb/hour 55 tons/year
5. Method of Compliance: EPA Method 26, 26A; Annually	
6. Allowable Emissions Comment (Description of Operating Method): 29 ppmvd @ 7-percent O₂ or 95-percent reduction by weight or volume, whichever is less stringent. Emissions per MSW combustor unit.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Mercury – H114

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Mercury – H114		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.015 lb/hour 0.066 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.050 mg/dscm @ 7-percent O₂ (per MSW combustor unit) Reference: 40 CFR 60, Subpart Cb		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustor unit. Hourly: 0.050 mg/dscm x 80,000 dscf/min x 60 min/hr x 1 m³/35.31467 ft³ x 1 lb/453592.4 mg = 0.015 lb/hr Annual: 0.015 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 0.066 TPY			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.050 mg/dscm @ 7-percent O₂	4. Equivalent Allowable Emissions: 0.015 lb/hour 0.066 tons/year
5. Method of Compliance: EPA Method 29, semi-annually	
6. Allowable Emissions Comment (Description of Operating Method): 0.050 mg/dscm @ 7-percent O₂ or 85-percent reduction by weight or volume, whichever is less stringent. 40 CFR 60, Subpart Cb Emissions per MSW combustor unit.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Nitrogen Oxides – NO_x

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NO_x		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 114 lb/hour 499 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 205 ppmvd @ 7-percent O₂ (per MSW combustor unit) Reference: Permit No. 0112119-009-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustion unit.			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 205 ppmvd @ 7-percent O₂	4. Equivalent Allowable Emissions: 114 lb/hour 499 tons/year
5. Method of Compliance: CEMS 24-hour daily arithmetic average.	
6. Allowable Emissions Comment (Description of Operating Method): 40 CFR 60.33b(d) and PSD-FL-105(B). Emissions per MSW combustor unit.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Lead - Pb

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Pb		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.120 lb/hour 0.53 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.40 mg/dscm @ 7-percent O₂ (per MSW combustor unit) Reference: 40 CFR 60, Subpart Cb		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustor unit. Hourly: 0.40 mg/dscm x 80,000 dscf/min x 60 min/hr x 1 m³/35.31467 ft³ x 1 lb/453592.4 mg = 0.120 lb/hr Annual: 0.120 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 0.525 TPY			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.40 mg/dscm @ 7-percent O₂	4. Equivalent Allowable Emissions: 0.120 lb/hour 0.53 tons/year
5. Method of Compliance: EPA Method 29 or 12, Annually	
6. Allowable Emissions Comment (Description of Operating Method): 0.40 mg/dscm @ 7-percent O₂ or 85-percent reduction by weight or volume, whichever is less stringent. 40 CFR 60, Subpart Cb Emissions per MSW combustor unit.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Particulate Matter Total – PM

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control: 99+	
3. Potential Emissions: 7.49 lb/hour 32.8 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 25 mg/dscm @ 7-percent O₂ (per MSW combustor unit) Reference: 40 CFR 60, Subpart Cb		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustor unit. Hourly: 25 mg/dscm x 80,000 dscf/min x 60 min/hr x 1 m³/35.31467 ft³ x 1 lb/453592.4 mg = 7.49 lb/hr Annual: 7.49 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 32.8 TPY			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 25 mg/dscm @ 7-percent O₂	4. Equivalent Allowable Emissions: 7.49 lb/hour 32.8 tons/year
5. Method of Compliance: EPA Method 5; Annually	
6. Allowable Emissions Comment (Description of Operating Method): 40 CFR 60, Subpart Cb Emissions per MSW combustor unit.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Sulfur Dioxide – SO₂

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SO ₂		2. Total Percent Efficiency of Control: 75	
3. Potential Emissions: 35.1 lb/hour 153.7 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 29 ppmvd @ 7-percent O ₂ (per MSW combustor unit) Reference: Permit No. 0112119-009-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Emissions per MSW combustor unit.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

Sulfur Dioxide – SO₂

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 29 ppmvd @ 7-percent O₂	4. Equivalent Allowable Emissions: 35.1 lb/hour 153.7 tons/year
5. Method of Compliance: CEMS 24-hour block daily geometric mean.	
6. Allowable Emissions Comment (Description of Operating Method): 29 ppmvd @ 7-percent O₂ or 75-percent reduction by weight or volume, whichever is less stringent.	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [1]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 10 % Exceptional Conditions: 100 % Maximum Period of Excess Opacity Allowed: _____ min/hour	
4. Method of Compliance: EPA Method 9	
5. Visible Emissions Comment: Exceptional Conditions: Periods of startup, shutdown, and malfunction. Duration of startup or shutdown periods are limited to 3 hours per occurrence, except as provided in 40 CFR 60.33b(a)(1)(iii).	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

Section [1]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 7

1. Parameter Code: O₂ – Oxygen	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: SICK Model Number: MCS-100EHW Serial Number: 278, 277, and 279	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Used with SO ₂ , NO _x , and CO monitors MSW Combustor Unit 1 – Serial Number 278 MSW Combustor Unit 2 – Serial Number 277 MSW Combustor Unit 3 – Serial Number 279	

Continuous Monitoring System: Continuous Monitor 2 of 7

1. Parameter Code: EM – Emission	2. Pollutant(s): SO₂
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: SICK Model Number: MCS-100EHW Serial Number: 278, 277, and 279	
5. Installation Date: 02/01/2001	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Used with SO ₂ , NO _x , and CO monitors MSW Combustor Unit 1 – Serial Number 278 MSW Combustor Unit 2 – Serial Number 277 MSW Combustor Unit 3 – Serial Number 279	

EMISSIONS UNIT INFORMATION

Section [1]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)**Continuous Monitoring System:** Continuous Monitor 3 of 7

1. Parameter Code: EM – Emission	2. Pollutant(s): NO_x
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: SICK Model Number: MCS-100E Serial Number: 278, 277, and 279	
5. Installation Date: 02/01/2001	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Used with SO ₂ , NO _x , and CO monitors MSW Combustor Unit 1 – Serial Number 278 MSW Combustor Unit 2 – Serial Number 277 MSW Combustor Unit 3 – Serial Number 279	

Continuous Monitoring System: Continuous Monitor 4 of 7

1. Parameter Code: EM – Emission	2. Pollutant(s): CO
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: SICK Model Number: MCS-100E Serial Number: 278, 277, and 279	
5. Installation Date: 02/01/2001	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Used with SO ₂ , NO _x , and CO monitors MSW Combustor Unit 1 – Serial Number 278 MSW Combustor Unit 2 – Serial Number 277 MSW Combustor Unit 3 – Serial Number 279	

EMISSIONS UNIT INFORMATION

Section [1]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 5 of 7

1. Parameter Code: VE – Visible Emissions (opacity)	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: LAND INSTRUMENTAL INC. Model Number: 4500 MKII Serial Number: See Comment	
5. Installation Date: 07/21/2003	6. Performance Specification Test Date:
7. Continuous Monitor Comment: MSW Combustor Unit 1 – Serial Number 0295809 MSW Combustor Unit 2 – Serial Number 0295813 MSW Combustor Unit 3 – Serial Number 0295815	

Continuous Monitoring System: Continuous Monitor 6 of 7

1. Parameter Code: TEMP	2. Pollutant(s):
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: See Comment Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: 40 CFR 60, Subpart Cb, Monitor manufacturer and model number may vary for maintenance purposes.	

EMISSIONS UNIT INFORMATION

Section [1]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor 7 of 7

1. Parameter Code: FLOW – Steam Flow	2. Pollutant(s):
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: See Comment Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: 40 CFR 60, Subpart Cb; Monitor manufacturer and model number may vary for maintenance purposes.	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [1]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

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>WSB-EU1-11</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 type="checkbox"/> Attached, Document ID: _____ <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>Part B</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 checked="" type="checkbox"/> Attached, Document ID: <u>Part B</u> <input type="checkbox"/> Previously Submitted, Date _____ <input 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 checked="" type="checkbox"/> Attached, Document ID: <u>Part B</u> <input type="checkbox"/> Previously Submitted, Date _____ <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]

MSW Combustor & Auxiliary Burners: Units 1, 2, and 3

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

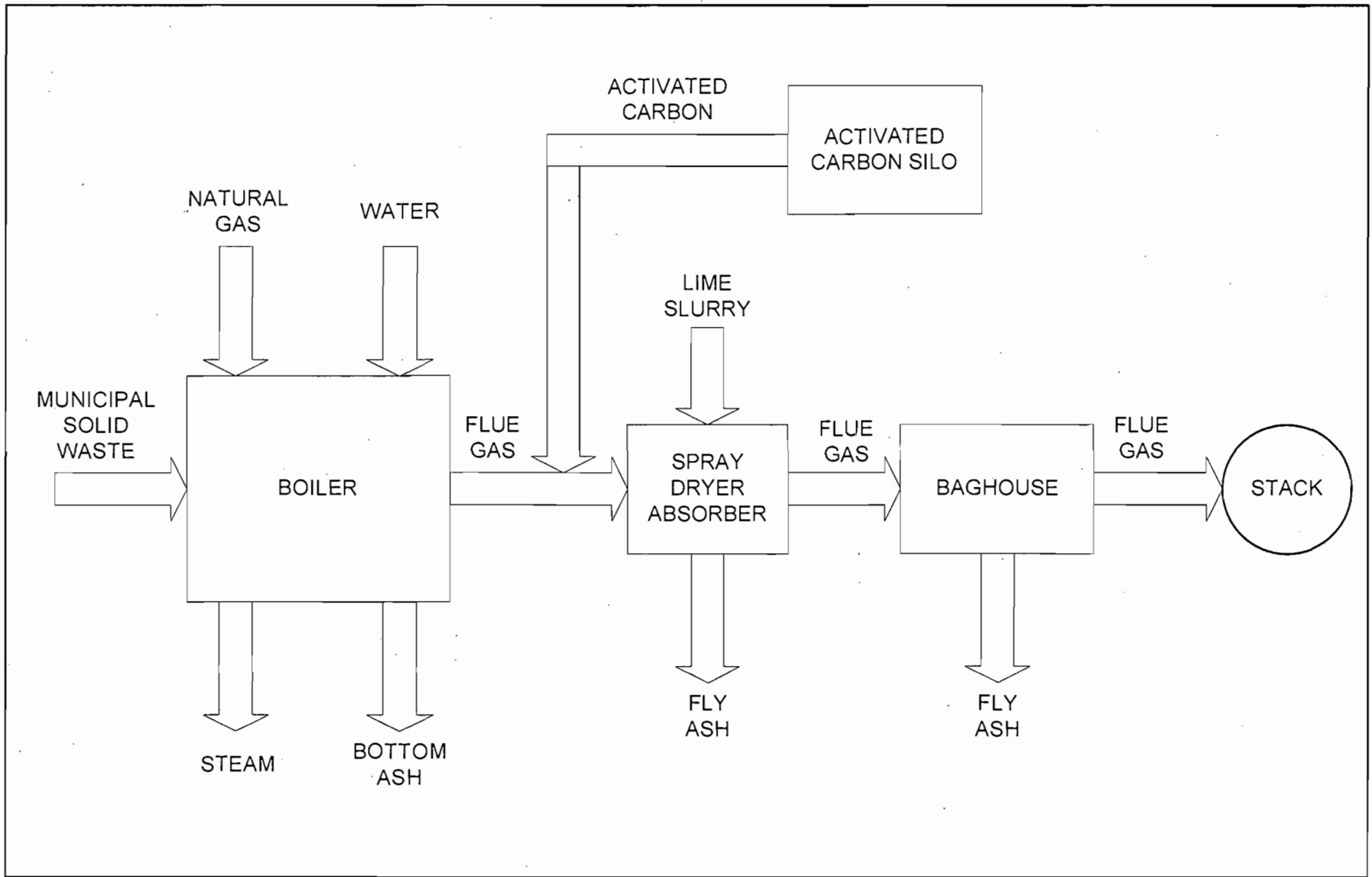
Additional Requirements for Title V Air Operation Permit Applications

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

ATTACHMENT WSB-EU1-II

PROCESS FLOW DIAGRAM



Attachment WSB-EU1-11
 Process Flow Diagram - Typical of all Three Boilers (Nos. 1, 2, and 3)
 Wheelabrator South Broward, Ft. Lauderdale, Florida

Filename: WSB-EU1-11.VSD
 Date: 09/10/08



EMISSIONS UNIT INFORMATION

Section [2]

Activated Carbon Storage Silo

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]

Activated Carbon Storage Silo

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:

Activated Carbon Storage Silo with Baghouse

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:

C

5. Commence Construction Date:

6. Initial Startup Date:

7. Emissions Unit Major Group SIC Code:

49

8. Federal Program Applicability: (Check all that apply)

- Acid Rain Unit
- CAIR Unit
- Hg Budget Unit

9. Package Unit:

Manufacturer:

Model Number:

10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment:

EMISSIONS UNIT INFORMATION

Section [2]

Activated Carbon Storage Silo

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description: Fabric Filter Low Temperature [T < 180 degrees Fahrenheit (°F)]
2. Control Device or Method Code: 127

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

Section [2]

Activated Carbon Storage Silo

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	24,000 lb/hr activated carbon	
2. Maximum Production Rate:		
3. Maximum Heat Input Rate:	million Btu/hr	
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	24 hours/day 52 weeks/year	7 days/week 8,760 hours/year
6. Operating Capacity/Schedule Comment:	Maximum process or throughput rate based on maximum loading rate of 400 lb/min.	

EMISSIONS UNIT INFORMATION

Section [2]

Activated Carbon Storage Silo

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: Activated Carbon Silo		2. Emission Point Type Code: 1	
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:	6. Stack Height: feet	7. Exit Diameter: Feet	
8. Exit Temperature: °F	9. Actual Volumetric Flow Rate: 13.3 acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		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: <p>Activated carbon silo will be installed as part of the carbon injection system. The silo will have a maximum storage capacity of 3,200 ft³ (48 tons @ 30 lb/ft³). The stack height, exit diameter, and discharge type are unknown at this time.</p> <p>Volumetric flow rate based on maximum loading rate of 400 lb/min. Displaced air = 400 lb/min x 1 ft³/30 lb = 13.3 ft³/min</p>			

EMISSIONS UNIT INFORMATION

Section [2]

Activated Carbon Storage Silo

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): Industrial Processes; Mineral Products; Bulk Materials Loading Operation: Activated Carbon		
2. Source Classification Code (SCC): 3-01-830-01	3. SCC Units: Tons Material Processed	
4. Maximum Hourly Rate: 12	5. Maximum Annual Rate: 262.8	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: The maximum hourly rate is based on the maximum activated carbon truck unloading rate of 400 lb/min. The maximum annual rate is based on the maximum hourly capacity of 20 lb/hr to each boiler (60 lb/hr total) and 8,760 hr/yr operation.		

Segment Description and Rate: Segment ____ of ____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

Section [2]

Activated Carbon Storage Silo

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	127		EL
PM ₁₀	127		NS

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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Activated Carbon Storage Silo

Particulate Matter Total – PM

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control: 99	
3. Potential Emissions: 0.03 lb/hour 0.15 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 30 gr/acf & 99% Removal Efficiency Reference: Baghouse Manufacturer		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Exhaust Flow: $400 \text{ lb/min} \times 1 \text{ ft}^3/30 \text{ lb} = 13.3 \text{ ft}^3/\text{min}$ Hourly: $30 \text{ gr/ft}^3 \times 13.3 \text{ ft}^3/\text{min} \times 1 \text{ lb}/7,000 \text{ gr} \times 60 \text{ min/hr} \times (1-0.99) = 0.03 \text{ lb/hr}$ Annual: $0.03 \text{ lb/hr} \times 8,760 \text{ hr/yr} \times 1 \text{ ton}/2,000 \text{ lb} = 0.15 \text{ TPY}$			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

Section [2]

Page [1] of [1]

Activated Carbon Storage Silo

Particulate Matter Total – PM

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 30 gr/acf & 99% Removal Efficiency	4. Equivalent Allowable Emissions: 0.03 lb/hour 0.15 tons/year
5. Method of Compliance: VE testing using EPA Method 9 performed in lieu of stack testing using EPA Method 5.	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [2]

Activated Carbon Storage Silo

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE05	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 5 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: EPA Method 9	
5. Visible Emissions Comment: Rule 62-297.620(4), F.A.C.	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

Section [2]

Activated Carbon Storage Silo

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [2]

Activated Carbon Storage Silo

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>WSB-EU2-I1</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 type="checkbox"/> Attached, Document ID: _____ <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>WSB-EU2-I3</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 checked="" type="checkbox"/> Attached, Document ID: <u>Part B</u> <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [2]

Activated Carbon Storage Silo

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

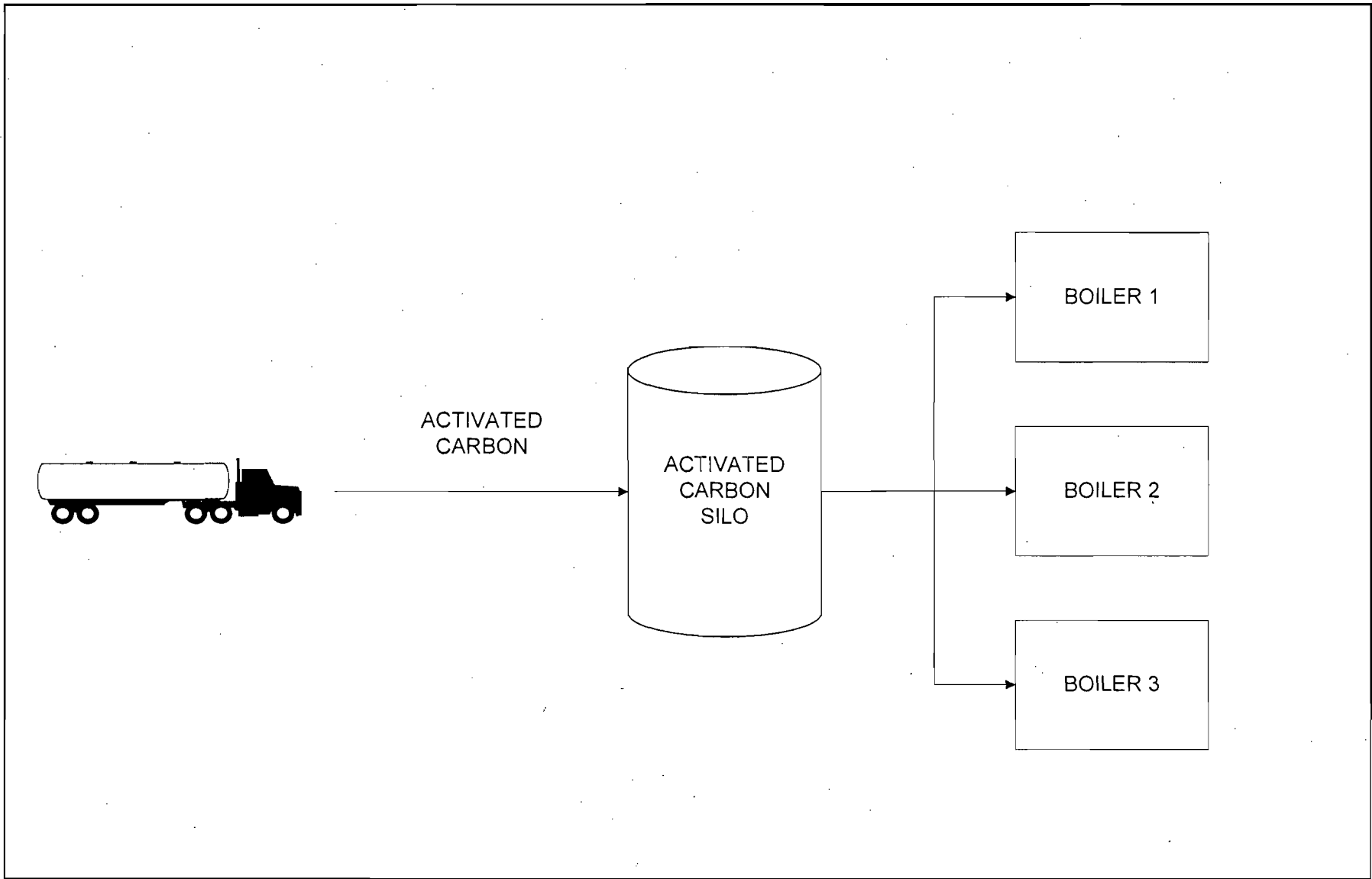
1. Identification of Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____
2. Compliance Assurance Monitoring: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Alternative Methods of Operation: <input type="checkbox"/> Attached, 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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ATTACHMENT WSB-EU2-I1

PROCESS FLOW DIAGRAM



Attachment WSB-EU2-I1
Process Flow Diagram
Wheelabrator South Broward, Ft. Lauderdale, Florida

Filename: WSB-EU2-I1.VSD
Date: 09/10/08



ATTACHMENT WSB-EU2-13

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

**ATTACHMENT WSB-EU2-I3
CONTROL EQUIPMENT PARAMETERS FOR THE
ACTIVATED CARBON SILO BAGHOUSE AT THE
WHEELABRATOR SOUTH BROWARD RESOURCE RECOVERY FACILITY**

Outlet Gas Temp (°F)	75
Outlet Gas Flow Rate (acfm)	13.3
Bag Material	Polyester
Total Area of Filter Media (sq. ft)	300
Air to Cloth Ratio	0.044
Dust Loading (grains/acf)	30
Control Efficiency	99%
Pollutants	Outlet Loading
Particulate Matter (lb/hr)	0.03

Sample calculations:

$$\text{Outlet loading rate (lb/hr)} = \text{gas flow rate (acfm)} \times \text{dust loading rate (grains/acf)} \\ \div 7000 \text{ grains/lb} \times 60 \text{ min/hr} \times [1 - \text{Control Efficiency (\%)} / 100]$$

PART B

PART B**APPLICATION FOR MINOR SOURCE AIR CONSTRUCTION PERMIT
FOR THE INSTALLATION OF ACTIVATED CARBON INJECTION SYSTEM
FOR MSW COMBUSTOR UNITS 1, 2, AND 3 (EU IDS 001, 002, AND 003)****Introduction**

Wheelabrator South Broward, Inc. (Wheelabrator) is seeking authorization from the Florida Department of Environmental Protection (FDEP) to install new activated carbon injection mercury control systems for the municipal solid waste (MSW) combustors at the South Broward Waste-to-Energy facility. The facility currently operates three MSW combustors (Unit Nos. 1, 2, and 3).

The MSW Combustors Unit Nos. 1, 2, and 3 each have a nominal design capacity of 750 tons per day (TPD) of MSW, and 281 million British thermal units per hour (MMBtu/hr), where the MSW has a heating value of 4,500 British thermal units per pound (Btu/lb). The combustors have a maximum short-term permitted capacity of 863 TPD of MSW, and 323.6 MMBtu/hr. The maximum permitted steam production rate for each combustor is 192,000 lb/hr when firing MSW (see Permit No. 0112119-009-AV).

Particulate matter (PM), lead (Pb), mercury (Hg), beryllium (Be), sulfur dioxide (SO₂), and hydrogen chloride (HCl) emissions from the three MSW combustors are controlled by fabric filter baghouses and lime spray dryer absorbers. Hg emissions are reduced by pre-combustion waste separation. Carbon monoxide (CO) emissions are controlled by good combustion practices. The three MSW combustors have been retrofitted with Selective Non-Catalytic Reduction (SNCR) NO_x controls in order to comply with the requirements in Chapter 40 of the Code of Federal Regulations (CFR), Part 60, Subpart Cb, *Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors that are Constructed on or Before September 20, 1994*.

Wheelabrator also plans to build a storage silo as part of the activated carbon injection system. The storage silo will hold powdered activated carbon that will be purchased and brought onsite by trucks. A baghouse will be installed to control particulate matter emissions from the storage silo.

The Hg control system will reduce the Hg emissions and help the facility to comply with the 40 CFR 60 Subpart Cb Hg emissions requirement of 50 micrograms per dry standard cubic meter corrected to 7-percent oxygen or 85-percent reduction by weight, whichever is higher. This emission

limit is applicable after April 28, 2009. There will be particulate matter/particulate matter less than 10 microns (PM/PM₁₀) emissions from the activated carbon storage silo, 99-percent of which will be controlled by the baghouse, resulting in less than 1 TPY of PM/PM₁₀ emissions. There are no other changes to the facility as a result of this project.

Wheelabrator South Broward Waste-to-Energy facility is located at 4400 South State Road 7, Ft. Lauderdale, Broward County, Florida. The facility is covered under Title V Permit No. 0112119-009-AV.

Golder Associates Inc. (Golder) was contracted to prepare the necessary air permit application seeking authorization to install the Hg control system and activated carbon storage silo. The air permit application consists of the appropriate applications form [Part I; DEP Form 62-210.900(1)], a technical description of the project, and rule applicability for the project.

Rule Applicability

Under Federal and State of Florida PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) must be reviewed and a pre-construction permit issued. The U.S. Environmental Protection Agency (EPA) has approved Florida's State Implementation Plan (SIP), which contains PSD regulations. Therefore, PSD approval authority has been granted to FDEP. For projects approved under the Florida Power Plant Siting Act (PPSA), the PSD program is delegated.

A "major facility" is defined as any 1 of 28 named source categories that have the potential to emit 100 tons per year (TPY) or more, or any other stationary facility that has the potential to emit 250 TPY or more of any pollutant regulated under the CAA. "Potential to emit" means the capability, at maximum design capacity, to emit a pollutant after the application of control equipment. Once a new source is determined to be a "major facility" for a particular pollutant, any pollutant emitted in amounts greater than the PSD significant emission rates is subject to PSD review. For an existing source for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions due to the modification is greater than the PSD significant emission rates.

PSD review is used to determine whether significant air quality deterioration will result from the new or modified facility. Federal PSD requirements are contained in 40 CFR 52.21, *Prevention of Significant Deterioration of Air Quality*. The State of Florida has adopted the federal PSD

regulations by reference [Rule 62-212.400, Florida Administrative Code (F.A.C.)]. Major facilities and major modifications are required to undergo the following analysis related to PSD for each pollutant emitted in significant amounts:

- Control technology review;
- Source impact analysis;
- Air quality analysis (monitoring);
- Source information; and
- Additional impact analyses.

Wheelabrator's South Broward Waste-to-Energy facility is a major facility under FDEP Rules. Because there is a physical change to the facility, the project is a potential modification as defined in the FDEP Rules in 62-210.200 and under the PSD rules in 62-212.400, F.A.C. PSD review would be required for the project if there were a significant net increase in emissions.

Since natural gas will be used in addition to currently permitted distillate oil, the comparison is made based on the projected future actual emissions due to natural gas-firing and the baseline actual emissions due to distillate oil-firing. The baseline actual emissions for distillate oil-firing are the emissions over a consecutive 24-month period within the 5 years immediately preceding the date that a complete application is submitted. The use of different consecutive 24-month periods for each pollutant is allowed. For an existing facility for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions due to the modification is greater than the PSD significant emission rates for any applicable pollutant. The net emissions increase is determined using the baseline-to-projected actual test. In this comparison, if the projected actual emissions minus the baseline actual emissions equal or exceed the PSD significant emission rates, then PSD review would apply.

Based on the fact that the only emissions increase as a result of this project is less than 1 TPY of PM/PM₁₀, PSD review will not apply.

Proposed Changes

Subpart Cb was revised on May 10, 2006 [71 Federal Register (FR) 27332], and was adopted by FDEP on May 31, 2007 (Rule 62-204.800, F.A.C.). According to Subpart Cb, revised Hg emission limits will be effective after April 28, 2009. To conform to these requirements, Wheelabrator is proposing revised emission rates for particulate matter, cadmium, and lead in addition to Hg to reflect

the Subpart Cb requirements applicable after April 28, 2009. For Hg, an activated carbon injection system will be installed. The current permit rates and proposed rates for these pollutants are summarized below:

Pollutant	Current Limit	Equivalent Emissions	
	mg/dscm @ 7% O ₂ /unit	lb/hr/unit	TPY/unit
PM	27	7.85	34.4
Cadmium	0.040	0.012	0.051
Lead	0.44	0.142	0.62
Mercury	0.080 OR 85% removal	0.02	0.09

Pollutant	Proposed Limit	Equivalent Emissions	
	mg/dscm @ 7% O ₂ /unit	lb/hr/unit	TPY/unit
PM	25	7.49	32.8
Cadmium	0.035	0.011	0.046
Lead	0.40	0.120	0.53
Mercury	0.050 OR 85% removal	0.015	0.066

Wheelabrator also requests appropriate changes in the permit conditions based on the following changes in the revised Subpart Cb standards:

	Current Standard	Revised Standard (71 FR 27326, May 10, 2006)
CEMS Data Availability	75% valid hourly averages per day for 90% of operating days per quarter.	<ul style="list-style-type: none"> 90% valid hourly averages per quarter and, 95% valid hourly averages per calendar year [§60.58b(c)(10)(viii)].
Startup/Shutdown/ Malfunctions (SU/SD/M) Data Handling and Excess Emission Event Exemption	<ul style="list-style-type: none"> SU/SD/M CEMS hourly averages are <u>included</u> in calculating 4 and 24-hour block averages but excess emission events due to SU/SD/M are exempt. SU/SD/M events limited to 3 hours to claim SU/SD/M exemption for all but CO excess events CO malfunction events due to loss of combustion air control or boiler water level control limited to 15 hours 	<ul style="list-style-type: none"> SU/SD/M CEMS hourly averages are not included but excluded when calculating 4 and 24-hour block averages. Excluded hourly averages must be reported in semiannual reports. SU/SD/M events limited to 3 hours to claim exemption for all but CO excess emission events [§60.58b(a)(1)]. CO malfunction events due to loss of combustion air control or loss of boiler water level control limited to 15 hours per occurrence [§60.58b(a)(1)(iii)]. For SO₂ and NO_x, when boiler water level control or combustion air control is lost, O₂ may be capped at 14% in the emissions calculation [§60.58b(a)(8)].
Inlet SO ₂ CEM RATA Criteria	20% of reference test method average	When inlet SO ₂ < 100 ppm at 7% O ₂ . 20% of reference test method average 5 ppm absolute mean difference between test method and CEM data. [§60.58b(e)(12)]
CO CEM RATA Criteria	10% of test method average or 5 ppm calculated as 95% confidence interval + mean difference	10% of test method average or 5 ppm mean difference between test method and CEM data. [§60.586(i)(3)]

	Current Standard	Revised Standard (71 FR 27326, May 10, 2006)
Maximum Demonstrated Load and Baghouse Temperature	Maximum demonstrated load and particulate control device inlet temperature determined on unit by unit basis from the most recent test of that unit. Can't be applied to other units.	Maximum demonstrated load and baghouse temperature measured on one unit can be applied to all units. [§60.58b(i)(8)]
Carbon Feed Monitoring	No averaging period included but 8 hour block average is used based on EPA guidance document clarification	<ul style="list-style-type: none"> • Carbon feed rate based on 8-hour block average [§60.58b(m)(2)] • New requirement for short-term carbon feed system trouble alarm based on injection pressure or other operational indicator. Description and basis for the alarm must be included in site specific operating manual. [§60.58b(m)(4)]
ASME Fully Certified Chief Facility Operator / Fully Certified Shift Supervisor Coverage	Fully Certified Chief Facility Operator (CFO), Fully Certified Shift Supervisor (CSS), or provisionally certified operator scheduled to take full certification exam <u>must be on site at all times.</u>	<p>Allows short term exceptions to CFO and CSS coverage:</p> <ul style="list-style-type: none"> • A provisionally certified control room operator may stand in for 12 hours or less [§60.54b(c)(2)(i)]. • For more than 12 hours and up to 2 weeks, a provisionally certified control room operator may stand in but the period must be reported in the annual report [§60.54b(c)(2)(ii)]. • For more than 2 weeks, a provisionally certified control room operator may stand in provided that the state is notified in writing and status reports and corrective action summaries submitted every 4 weeks [§60.54b(c)(2)(iii)]. • Provisionally certified operator who is newly promoted or recently transferred to a CFO or CSS position may perform those duties for up to 6 months before taking the full certification exam [§60.54b(c)(3)].

	Current Standard	Revised Standard (71 FR 27326, May 10, 2006)
Period Between Annual Compliance Tests	Annual test must be within 12 calendar months of the previous test.	Allows test to occur at least 9 months but no more than 15 months after the last test. However, RATA must still be done within 12 month period. [§60.58b(c)(9)]

Activated Carbon Injection System

Wheelabrator desires to install the activated carbon injection systems in order to meet the lower Hg emissions limits in Subpart Cb. A detailed description of the activated carbon system is presented in Appendix A.

Activated Carbon Storage Silo

A storage silo will be built as part of the activated carbon injection system. Powdered activated carbon will be purchased and brought onsite by trucks. The trucks will be capable of holding 20,000 pounds (10 tons) of powdered activated carbon each. The trucks will pneumatically convey the activated carbon into the storage silo, which will be controlled by a baghouse. The activated carbon will have a density of 30 pounds per cubic foot (lb/ft³).

The storage silo will have a total storage capacity of 3,200 cubic feet (ft³), which will be sufficient to hold a maximum of 48 tons of activated carbon. The trucks will unload the activated carbon at a nominal rate of 400 lb/min, which would require about 50 minutes to unload.

A volumetric screw feeder and blower assembly will transport the activated carbon from the storage silo to the three boilers for injection. The screw feeder will operate at a nominal rate of 8 lb/hr of activated carbon per boiler (24 lb/hr total). The maximum feed rate is 20 lb/hr per boiler. A more detailed description of the activated carbon injection system and storage silo is included as Appendix A.

APPENDIX A

**DESCRIPTION OF
ACTIVATED CARBON INJECTION SYSTEM
AND STORAGE SILO**

**WHEELABRATOR
SOUTH BROWARD RESOURCE RECOVERY FACILITY
POWDER ACTIVATED CARBON SYSTEM
FT. LAUDERDALE, FLORIDA**

SYSTEM DESCRIPTION

Powdered Activated Carbon storage and feed system design parameters are as follows:

• Stored Product:	Powdered Activated Carbon
• Product Bulk Density:	30 lb/ft ³
• Silo Storage Capacity:	3,200 ft ³ (storage capacity)
• Rotary Feeder:	8-20 lbs/hr.
• Feeder Hopper Capacity:	3 ft ³
• Volumetric Screw Feeder:	20 lbs/hr. MAXIMUM
• Blower Assembly:	125 SCFM at 5 PSIG

The system is comprised of a silo with a storage capacity of 3,200 cubic feet, silo fill station, storage and inventory systems, loss-in-weight feeder, blower assembly and required controls. Controls may be grouped into two basic subsystems. These subsystems consist of two main control "loops":

- **Powdered activated Carbon Silo Fill & Inventory System**
- **Powdered activated Carbon Injection System**

SECTION I - Powdered Activated Carbon Silo Fill & Inventory System

The fill and inventory system includes the 3,200 ft³ storage silo, 4" schedule 40 truck unloading pipe, target box, level switches, truck unloading panel and dust collector.

Low Level: Low level is an alarm condition, which indicates that the volume of material in the silo is equal to or less than that of the cone portion. An indicating light is illuminated at the truck unloading panel when a low level condition exists. There is also an audible alarm, which must be acknowledged to silence. Additional chemical should be ordered immediately.

Intermediate Level: Intermediate level (or reorder level) is a condition where material has dropped to a level where approximately two truckloads (40,000 lbs. each) of

**WHEELABRATOR
SOUTH BROWARD RESOURCE RECOVERY FACILITY
POWDER ACTIVATED CARBON SYSTEM
FT. LAUDERDALE, FLORIDA**

material is required to refill the storage silo. An indicating light is illuminated at the truck unloading panel when this condition exists.

High Level: High level is an emergency alarm condition that indicates the silo is full and that chemical may be exiting through the pressure/vacuum relief valve. An indicating light at the truck panel is illuminated and an audible alarm sounds if the condition exists, and truck unloading process must be stopped immediately. If over-filling occurs without an indication, the high level switch has failed; the switch must be inspected and replaced if required.

WARNING

***NEVER* order just "carbon" for this silo!
This system is designed *ONLY* for *POWDERED ACTIVATED CARBON*!**

PRE-START-UP INSPECTION:

NOTE

Chemco's system warranty is invalidated if a Chemco representative is not present during initial system startup. However, the silo may be charged with POWDERED ACTIVATED CARBON before the Chemco representative arrives.

CAUTION

**THE FOLLOWING INSPECTION *MUST* BE
PERFORMED BEFORE THE SILO IS FILLED!!**

**PRIOR TO FILLING SILO THE FOLLOWING STEPS
MUST BE TAKEN:**

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POWDER ACTIVATED CARBON SYSTEM
FT. LAUDERDALE, FLORIDA**

1. Remove flex connection below the knifegate valve and reach inside the silo cone as far as you can to remove any foreign objects. Inspect the flex connection for any damage and cuts prior to reinstallation. Reinstall the flex connection and tighten bands then close the knifegate valve tight.
2. Remove the feeder hopper access cover. Vacuum any debris and water from within the feeder hopper and replace the cover.

INITIAL CHARGE OF POWDERED ACTIVATED CARBON:

To start the unloading operation, the dust collector pulse sequencer Hand/Off/Auto selector switch located on the truck unloading control panel should be in the *Auto* position. When the fill line limit switch is actuated (fill cap hung down), the dust collector pulse sequencer will energize and continue to operate during the entire fill operation.

The operator should connect the flexible fill hose from the transport truck to the quick coupler on the truck unloading line at this time. Make sure that the connection is secure, and then proceed with unloading. Unloading will continue until the truck is empty (1 to 1½ hours) or until the silo is full. If the level in the silo rises to high level, the high level indicator light will flash and the audible alarm will sound. Loading ***must stop immediately*** at this point or the dust collector will be damaged. Depressing the alarm silence button may silence the alarm. The high level indicator light will remain on until the level recedes.

After the fill operation is complete, replacing the end cap de-energizes the limit switch; the pulse sequencer will stay on for a preset time, usually 2 minutes, after which it will shut off.

DUST COLLECTOR OPERATION:

The dust collector's purpose is to vent the silo while it is being loaded pneumatically from a tanker truck. When the product is conveyed into the silo, the conveying air displaces the air in the silo, the pressure increases slightly, and vents through the dust collector cabinet. The cabinet contains the filter bags. This dust-laden air is filtered through the dust collector cloth bags before being discharged to the atmosphere. When the bags are pulsed with compressed air, the dust accumulated on them is returned to the silo. Occasionally, the filter bags become clogged with dust ("blinding"), causing the silo internal pressure to rise above the PSV (Pressure safety valve) setting.

When this occurs, dust will be seen leaving the PSV (located on the silo roof). Stop the unloading process and manually energize the pulse sequencer using the

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**WHEELABRATOR
SOUTH BROWARD RESOURCE RECOVERY FACILITY
POWDER ACTIVATED CARBON SYSTEM
FT. LAUDERDALE, FLORIDA**

Hand/Off/Auto selector switch. If this condition persists, the bags should be removed and cleaned, or replaced.

CAUTION

THE TRANSFER PRESSURE FROM THE TRUCK SHOULD NOT EXCEED 10 PSI. EXCESSIVE PRESSURE COULD RESULT IN LEAKAGE OF MATERIAL FROM THE PVR VALVE ON THE TOP OF THE SILO OR AROUND THE DUST COLLECTOR DOORS. IF EXCESSIVE DUST IS NOTED IN THE AIR DURING LOADING, THEN LOADING OPERATION SHOULD STOP WHILE THE PVR VALVE AND DUST COLLECTOR DOORS ARE CHECKED AND SECURED, IF NECESSARY. PERIODICALLY THESE DOORS AND PSV SHOULD BE CHECKED AND SECURED — WHETHER OR NOT EXCESSIVE DUST IS NOTED DURING LOADING OPERATIONS.

After unloading is completed, the truck operator should uncouple the transfer hose from the fill line and replace the fill cap.

Truck Unloading Control Panel Status Lights		
Status Light	Color	Meaning
Silo High Level Alarm Light	Amber	When illuminated, high level within the storage silo exists. Truck unloading process should be stopped.
Silo Reorder Level Alarm Light	Green	When illuminated, reorder level within the storage silo exists. Powdered activated carbon should be ordered.
Silo Low Level Alarm Light	Amber	When illuminated, the remaining full volume of the silo is 550 ft ³ . Additional carbon should be ordered immediately.
Dust Collector Pulse Sequencer On	Red	Dust collector pulse sequencer is energized.

**WHEELABRATOR
SOUTH BROWARD RESOURCE RECOVERY FACILITY
POWDER ACTIVATED CARBON SYSTEM
FT. LAUDERDALE, FLORIDA**

SECTION II - Powdered Activated Carbon Injection System

CARBON EDUCTOR BLOWER

Description:

There are 4 carbon eductor blowers mounted inside the silo skirt area. The blowers are MD Pneumatics model SL 3002 positive displacement rated for 125 scfm @ 5 psig. It is belt driven by a 5 HP electric motor rated 460 VAC, 3 phase, 60 Hz.

Operation:

The blower will start in automatic along with the other devices in the system. The system contains a pressure transmitter to monitor the blower discharge pressure. In the event of low pressure, the feeders and blower will de-energize immediately while an audible alarm will sound from the control panel. Should high pressure be detected, the associated feeders will de-energize, but the blower will continue to run for approximately one minute prior to de-energizing. This is done to allow the blower the opportunity to clear the obstruction causing the high pressure.

AIRSWEEP SYSTEM

Description:

There are 6 bin aerators in the silo cone. Air is supplied to these solenoid valves from flex hose attached to a 2" header surrounding the cone.

Operation:

The air sweep system is energized when the carbon injection system is operating in automatic mode. Each solenoid may also be operated in the *HAND* mode for maintenance or troubleshooting.

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SCREW FEEDER

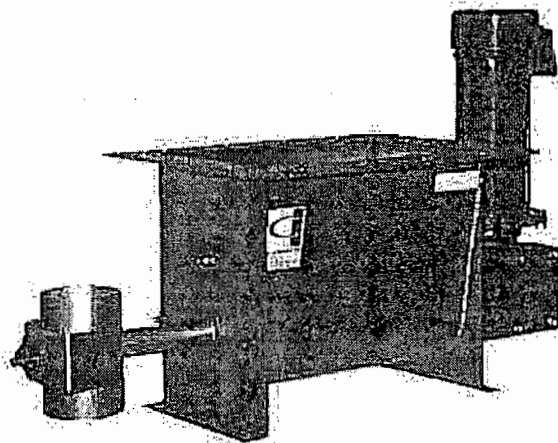
Description:

The volumetric screw feeder is a Chemco CMH-1 powered by a ½ hp, 460 volt, 3 phase motor. A 20:1 gear reducer to provide a constant output of 420 lbs/hr for an assumed carbon bulk density of 12 lbs/per cubic feet.

The gearbox lubricant was filled prior to shipping and the vent plug removed to prevent spillage. Before the feeder is energized, replace the plug in the top of the gearbox with the vented plug. If the vented plug is not installed, oil will seep out along the shaft soon after operation begins.

Operation:

Screw Feeder operation is controlled via the HMI for starting/stopping. The speed is fixed; therefore, it maintains a constant feed rate.



Typical Volumetric Screw Feeder

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FEEDER SCALE

The volumetric screw feeder and associated hopper sit on a scale. The scale includes a load cell, which generates a 0-20mV signal to a converter/transmitter module. This module provides intrinsically safe power to the load cell and transmits a 4-20 mA signal to the PLC proportional to the net weight on the scale. The HMI has provision to re-calibrate the scale by resetting the "zero" and "span". As described later, the scale signal is used for feeder speed control in gravimetric mode.

There are two (2) conditions which can generate a scale fault alarm: net weight over limit or net weight under limit. These faults are self-resetting and will allow the feeder to continue to operate.

FEEDER SCALE CALIBRATION

The feeder scale/transmitter has been factory calibrated and should not be changed. (Refer to vendor documentation for details.)

If it is necessary to re-calibrate the scale weight signal for minor changes, provision has been made to reset the zero and span in the PLC using the HMI. This is described below.

Before resetting the *zero*, the feeder should be run with the rotary feeder off until no material is being discharged. This will ensure that the hopper and feeder are as empty as possible of material. Now the RESET SCALE ZERO button on the Scale Calibration screen can be pressed.

Before resetting the *span*, place all of the calibration weights (approx 100 lbs) on the scale with the hopper and feeder emptied as described above. Enter the amount of this weight by actuating the KNOWN WIEGHT BUTTON on the Scale Calibration screen. Now the RESET SCALE SPAN button on the Scale Calibration screen can be pressed. (At this time, the displayed net weight should be equal to the amount of weight entered; and when the weight is removed, the displayed net weight should be zero.)

WARNING: Do not reset only the zero or only the span. Both must be reset to properly re-calibrate the scale.

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Carbon System Control Panel

The carbon system control panel provides all controls and PLC programming required for proper operation of the carbon injection systems described in this manual. The panel requires a 480-volt, three phase, 60 Hz. power supply. The panel is equipped with a graphical human machine interface device (HMI) that provides all selectors and displays required for normal operation. The interface screen incorporates several layers of graphics where the operator can adjust set points, observe operating parameters, determine alarm conditions, etc.

The following section will have the HMI screens displayed and the functionality described after the PLC programmed has been developed and tested. The description is provided as a general overview of the technical intent.

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The following provides preliminary screen titles and there functions.

Initial Screen

This screen is displayed at initial power-up.

Overview Screen

This screen provides an overview of system as well as the silo aeration solenoids.

Active Alarm Screen

This screen provides a listing of all system alarms that must be acknowledged and is common to all systems. If an alarm condition exists, access the alarm screen. The alarm condition that is present will be displayed in the text box.

System Switch Screen

This screen displays the operational selector switches for all motors and valves associated with the system, as well as current weight on the scale, feed rates for the last minute & six minutes. The operator can also select the feeder speed for volumetric mode or the setpoint for local gravimetric mode.

Silo Aeration Screen

This screen shows the operational selector switches for the air sweep system, as well other valves located in the fill and air supply systems.

Calibrate System Screen

This screen provides the ability to perform a calibration of the values from the load cell. See previous section for description of operation.

System Settings Screen

This screen allows for the setting of system timers for operation of air sweep solenoids as well as knifegate operation and hopper air sweep timers. Only trained maintenance staff should accomplish this.

Maintenance Timer Screen

This screen provides a display of the system motors and their accumulated run timers. The timers can also be reset from this screen.

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Carbon Injection System Operating Interlock Description

The following section describes operating interlocks among the carbon system components. It should be noted that there might be other components or subsystems that have control devices interlocked to the carbon system, which are not described within this text.

- This section is preliminary and will be completed once the programming is complete and tested.

NOTE

When operating the system in automatic mode, all system interlocks, as described below, are active. Operating any component in hand (or manual mode) bypasses these interlocks. Operating system components manually should only be done to perform maintenance or inspections and should not be used for system operation.

The carbon system is considered to be operating in Automatic (Auto) mode when:

- Knifegate valve *Open-Close-Auto* selector is set to *Auto*.
- Hopper air purge solenoid *Open-Close-Auto* selector is set to *Auto*.
- Rotary feeder *Hand-Off-Auto* selector is set to *Auto*.
- Rotary feeder purge air *Open-Close-Auto* selector is set to *Auto*.
- Screw feeder *Hand-Off-Auto* selector is set to *Auto*.
- The blower *Hand-Off-Auto* selector is set to *Auto*.

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CARBON EDUCTOR BLOWER

Blower operation is dependent on the train to which the blower is connected. With the blower *Hand-Off-Auto* control selector set to *Auto*, the blower will be energized when the associated train is in *Auto* and:

- The connected Unit is given a start command from the HMI or DCS.
- The connected Unit has a run permissive (see text below).
- The blower motor is not faulted.
- The system air pressure is not low.

The connected Unit run permissive is enabled when all of the following are true:

- TBD

ROTARY FEEDER

With the rotary feeder *Hand-Off-Auto* control selector set to *Auto*, the feeder is energized when the system is in *Auto* mode and:

- The associated blower is running.
- The system is aligned to a discharge Unit and that Unit has a Run Permissive.
- The feeder motor is not faulted.
- The system air pressure is not low.
- The system air pressure is not high.

ROTARY FEEDER SPEED

The speed of the rotary feeder can be controlled in either of three modes: *Volumetric*, *Local Gravimetric* or *Remote Gravimetric*. In the *Volumetric* mode, the speed of the feeder is constant and is set by the operator via the HMI. In *Local Gravimetric* mode, feeder speed will vary as required to maintain a *feed rate* (pounds per hour) that is also set by the operator via the HMI. In *Remote Gravimetric*, the feeder operates like Gravimetric only the setpoint is sent to the PLC by a remote means (SCADA or DCS).

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NOTES:

The weigh scale signal is utilized for speed control in both *Gravimetric* modes. The weigh scale signal can only be used if the knifegate has been closed for a short time period (to allow the scale to settle) and there is no active scale fault.

SCREW FEEDER

With the screw feeder *Hand-Off-Auto* control selector set to *Auto*, the screw feeder will be energized when the system is in *Auto* mode and the blower has been running for two minutes. The screw feeder functions similar to a transfer conveyor.

SILO AERATION SOLENOID VALVES

There are three (6) silo aeration solenoid valves, each solenoid has its own *Open-Close-Auto* control selector on the HMI. If the *Open-Close-Auto* control selector is set to *Auto*, the valves will be energized one at a time in sequence whenever any rotary airlock is running. Each solenoid valve will be pulsed for the amount of time set on the "on-timer", and the time between pulses is a function of the "off-timer".

NOTE:

The on and off times are set via the HMI. If the feed rate of the rotary feeder is too slow, the off - time should be decreased.

SILO AIR OPERATED KNIFEGATE VALVE

The silo knifegate valve is air operated in both the open and close directions.

With the knifegate *Open-Close-Auto* control selector in the *Auto* position, the knifegate valve will open when the system is in automatic and the hopper refill permissive is enabled. The open solenoid will only operate for a fraction of the valves full stroke. This is done to limit the flow of carbon into the hopper. Once the scale signal indicates that the hopper has reached the fill weight, the knifegate valve will close.

NOTES:

The *Start Fill* weight and *Stop Fill* weight are adjustable via the HMI.

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KNIFEGATE VALVE TRANSITION AIR PURGE SOLENOID

The silo knifegate valve transition air purge is an air supply to keep the carbon located above the knifegate fluidized.

With the knifegate transition air purge *Open-Close-Auto* control selector in the *Auto* position, the knifegate transition air purge solenoid will energize when the hopper reaches the refill weight. Once the valve has cycled the hopper refill sequence will commence.

NOTES:

The solenoid *On time* is adjustable via the HMI.

HOPPER AIR SWEEP SOLENOIDS

The hopper air sweep solenoids are used to keep the carbon located in the storage hopper fluidized.

With the hopper air sweep solenoid *Open-Close-Auto* control selector in the *Auto* position, the hopper air sweep solenoids will cycle based on time while the rotary feeder is running.

NOTES:

The solenoid *On time* and *Off Time* is adjustable via the HMI.