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Module: AC002

Pinellas County
UTILITIES
Solid Waste

December 7, 2011

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DIVISION OF AIR
RESOURCE MANAGEMENT

Mr. Jeff Koerner
Program Administrator
Department of Environmental Protection
Office of Permitting and Compliance
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

RE: Pinellas County – Waste to Energy Facility
Modification of PSD-FL-011B and PSD-FL-098B

Dear Mr. Koerner:

On behalf of Pinellas County, I am submitting this letter to the Florida Department of Environmental Protection ("Department" or "DEP") because the County wishes to obtain the Department's approval for two modifications to the PSD permits (PSD-FL-011B and PSD-FL-98B) for the County's Waste to Energy Facility ("Facility").

The first modification is related to several construction projects ("Projects") that have been completed at the Facility. In a previous letter to the Department dated July 24, 2006, the County requested amendment of the referenced PSD permits to authorize various construction projects. The PSD amendments and associated construction projects were subsequently approved by the Department.

The Projects primarily consisted of like-kind replacements of existing equipment. Although the Projects were not expected to cause or contribute to a significant net emissions increase for any PSD pollutant, there have been increases in the Facility's actual annual emissions of CO, SO_2, and MWC acid gases (due to the SO_2 component) following the completion of the Projects. The precise cause of the emissions increases is indeterminate. The Facility is in compliance with all of its emissions limits, but the Facility has experienced difficulty in its efforts to ensure that there will be no increase in annual emissions above the applicable PSD significance levels for CO, SO_2, and MWC acid gases (due to the SO_2). Since the Facility's emissions of these three pollutants may exceed PSD annual emission significance levels, Pinellas County has decided to submit this application for a PSD modification and thus ensure compliance with the applicable PSD regulations.

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For the foregoing reasons, and as explained more fully below, the County wants to modify the Facility's PSD permits by establishing PSD potential-to-emit limits for CO, SO_2, and the SO_2 component of MWC acid gases.

The County also is seeking a second modification to the Facility's PSD permits. More specifically, the County wants to modify the PSD permits to clearly provide that the compliance determination for the Facility's "MWC load" (capacity) shall be based on the Facility's steam flow, which is monitored, rather than the weight (i.e., tons per day) of the solid waste processed at the Facility, which has to be estimated. This modification will make the Facility's PSD permits more consistent with the PSD permits issued to other Municipal Waste Combustor ("MWC") facilities in Florida and it will conform to the requirements established by EPA in the New Source Performance Standards for MWCs (40 CFR 60, Subpart Cb).

Based on the information contained in this letter and the Attachments, the County respectfully requests the Department to modify the Facility's PSD permits (PSD-FL-011B and PSD-FL-098B) and thereby authorize the two changes requested herein.

NSPS Regulatory Applicability

The County's Projects did not increase the design capacity of the three municipal waste combustor ("MWC") units at the Facility. The Projects also did not increase the Facility's short-term emission rates (e.g., kg/hr). For these reasons, the Projects were not a "modification", as defined in the New Source Performance Standards (see 40 CFR § 60.14). Further, as noted in the original July 24, 2006 letter, the Projects also did not constitute a "reconstruction", as defined in the NSPS.

Since the Projects were neither a "modification" under 40 CFR § 60.14 nor a "reconstruction" under 40 CFR § 60.15, the Projects were not subject to the NSPS requirements in 40 CFR 60, Subpart Eb. Instead, the Facility continues to be subject to the requirements in the applicable Emission Guidelines (40 CFR 60, Subpart Cb), which are incorporated into the Facility's current Title V operating permit 1030117-008-AV.

PSD Regulatory Applicability

As noted above, the Projects did not increase the design capacity of the Facility's three MWC units. The Projects were not expected to cause a significant net emissions increase in the Facility's actual long-term emissions (i.e. tons per year or "tpy") of any PSD pollutants. Nonetheless, the Facility is experiencing difficulty in maintaining actual annual emissions of CO, SO_2 and MWC acid gases (due to the SO_2 component) below their respective PSD significant increase levels, and there is the potential that these levels could be exceeded. Therefore, Pinellas

County has decided to submit an application for a PSD modification to establish PSD potential-to-emit limits for CO, SO_2, and the SO_2 component of MWC acid gases.

Several attachments have been included supporting this request. Attachment A contains a BACT analysis for the proposed CO and SO_2 emission levels. Attachment B contains air quality modeling analyses for the new ambient one hour SO_2 standard. The analyses are included because the new SO_2 standard was promulgated after the last PSD modeling analyses were performed for the Facility. Attachment C includes the applicable portions of the Department's Application Form 62-210.900(1), and Attachment D provides a copy of the July 24, 2006 PSD amendment request letter from Pinellas County to the Department.

MWC Load

As noted above, Pinellas County would like to modify the current condition used for determining compliance with the limits on MWC load. Condition A.4 in the Title V permit (1030117-008-AV) includes a compliance requirement for throughput on a tonnage basis. In order to conform to more recent MWC permits in Florida, Pinellas County is requesting that compliance for capacity be determined based only on a 4 hour steam load maximum. Specific Condition A.4.b of the Title V permit provides:

"Capacity. The following maximum value (capacity) shall not be exceeded:

b. 275,000 lbs/hr individual MWC unit steam production on a 4-hour block arithmetic average."

The steam load is directly measured, while tonnage is only an approximation that is based on scale weights and pit inventories. The Facility's steam load is a more accurate measurement of the MWC unit capacity and it matches the requirement in 40 CFR 60, Subpart Cb and other MWC permits in Florida.

The County's request also is consistent with the requirements established in 1987 in the Facility's PSD permit (PSD-FL-098). Specific Condition 1.b of the PSD permit provided that the MWC unit

"shall not be loaded in excess of its rated capacity of 87,500 pounds per hour [of solid waste] or in excess of the maximum steam rate of 275,000 pounds per hour."

Specific Condition 2 provided:
"Compliance with condition 1.b shall be determined through continuous monitoring and recording of steam production. The devices used for this purpose shall be adequately maintained and in operation during all periods of steam production."

Thus, the Department's original limit on tonnage (pounds per hour) was to be enforced by monitoring the Facility's steam rate. Similar language is also found in the Conditions of Certification. The same approach should be used today.

Conclusion

Thank you for your consideration of this request. As required by the FDEP rules, a Responsible Official Certification and registered Professional Engineer Certification are included with the permit application. Should you have any questions, please contact me at (727) 464-7500.

Sincerely,

Robert J. Hauser, Jr., Director
Pinellas County Department of Environment and Infrastructure
Division of Solid Waste Operations

Attachments

cc: K. Oswald – Pinellas County DEI
D. Dee – Gardner, Bist, Wiener, Wadsworth, Bowden, Bush, Dee, LaVia & Wright, P.A.
D. Elias – RTP Environmental Associates, Inc.
T. Stankunas – Earthshine, Inc.

Attachment A

BACT Analyses

1. Control Technology Analyses

1.1. Control Technology Analyses Introduction

This section presents the Best Available Control Technology (BACT) analyses for the existing Pinellas County Resource Recovery Facility (PCRRF). In accordance with USEPA and FDEP guidelines, BACT analyses were completed for CO, SO_2 and MWC Acid Gases (due to the SO2 component) which were determined to be subject to Prevention of Significant Deterioration (PSD) permitting requirements. The control technology analyses presented in this section were conducted for the MWC units at the existing facility. The proposed project is subject to BACT requirements for the pollutants identified below:

- Carbon Monoxide (CO)
- Sulfur dioxide (SO_2)
- MWC acid gases (the SO_2 Component)

1.2. Approach for Conducting a BACT Analysis

Under the PSD program, newly constructed and modified major sources located in areas in attainment with the NAAQS must implement BACT. The BACT review process is outlined in the USEPA draft document New Source Review Workshop Manual (USEPA, 1990). The five major steps involved in a BACT analysis are:

- Identify available control options with practical potential for application to the specific emission unit for the regulated pollutant under evaluation.
- Evaluate the technical feasibility of each APC technology and eliminate options that are not technically feasible or are unavailable control technology options.
- Rank the technically feasible alternatives based on effectiveness in reducing emissions.
- Evaluate the economic, environmental and energy impacts of alternatives, starting with the top control option and continuing until the option being evaluated cannot be ruled out based on excessive (economic, environmental or energy) impacts.
- Select BACT.

Best Available Control Technology (BACT) is defined in F.A.C. Section 62-210.200 (see 42 U.S. Code §7479) as follows: "an emission limitation, including a visible emission standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case-by-case basis, determines is achievable through application of production processes and available methods, systems and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant, taking into account:

1. Energy, environmental and economic impacts, and other costs;
2. All scientific, engineering, and technical material and other information available to the Department; and
3. The emission limiting standards or BACT determinations of Florida and any other state."

Economic, energy and environmental impacts are considered in a "top-down" BACT analysis. The "top-down" BACT approach looks not only at the most stringent emission limits previously approved, but also evaluates all demonstrated and potentially applicable technologies, including innovative controls, and lower polluting processes identified through a review of EPA's RACT/BACT/LAER Clearinghouse (RBLC). If the proposed BACT is lower than or equivalent to the most stringent emission limit, no further analysis normally is necessary. However, if the most stringent emission limit is not selected, additional analyses are required.

Once the most stringent emission limit has been identified, its technical feasibility is determined. A technology that is available and is applicable to the source under review is considered technically feasible. A control technique is considered available if it has reached the licensing and commercial sales stage of development. If a control technique is not applicable or if it is technically or economically infeasible for the source in question, the next most stringent technology is evaluated. The process continues until an emission control technology cannot be eliminated. If a control technology is technically and economically feasible and provides the most stringent emission level, that control is considered BACT unless energy or environmental impacts preclude its use.

When evaluating the economic impact of a technically feasible control option, primary consideration is given to the average cost-effectiveness of a control option and as applicable, to the incremental cost-effectiveness between dominant control options (USEPA, 1990). Cost-effectiveness is expressed as the total annualized cost of the option per ton of pollutant removed. USEPA has recommended that to derive these costs, the applicant should follow the procedures for estimating the total controlled costs that are described in the USEPA Air Pollution Control Cost Manual (USEPA, 2002). Additionally, the beneficial or adverse environmental impacts associated with each control option are assessed in the BACT analysis. The environmental impact analysis includes the effect of the control technology on other regulated and unregulated pollutants. Environmental impacts other than air quality, such as the control option's impact on water quality, solid waste disposal and other environmental impacts, are also considered in the BACT analysis. Control alternatives can be ruled out based on documented adverse environmental impacts. The energy impact analysis considers the direct energy impact of the control alternatives. The energy requirements of a particular control option are estimated in terms of units of energy (as associated cost) per ton of pollutant removed.

The determination of what constitutes BACT is ultimately made by the permitting authority, which is usually the state regulatory agency in which the emission unit will operate. This allows the state regulatory agency to consider the weight or emphasis to be placed on the economic, environmental, and energy impacts of control. The state agency may consider the size of the

plant, the increment of air quality that will be absorbed by any particular major emitting facility and other considerations such as anticipated and desired economic growth for the area. For this project, FDEP will determine BACT as part of the permitting process. With respect to emissions from the MWCs, the applicable NSPS (40 CFR 60, Subpart Cb standards) reflect MACT performance and establish a baseline for determining BACT.

1.3. BACT Analysis for Emissions of MWC Acid Gases and SO_2 from the MWC

Emissions of acid gases including SO_2 will be generated from the operation of the MWC units. Acid gases are produced in the combustion unit from chemical reactions between sulfur and chlorine and other compounds in MSW and combustion air. The sections which follow discuss the technologies evaluated to reduce acid gas emissions from the existing MWC units at the PCRRF.

The actual annual emissions of HCl, fluorides (HF) and sulfuric acid mist are not expected to be above PSD significance levels. Thus, these pollutants are not addressed in this PSD permit application except as part of MWC acid gases.

1.3.1. Description of Acid Gas Emissions from MWCs

Elemental sulfur chemically bound to other compounds in municipal solid waste (MSW) is a primary contributor to pollutant emissions from solid waste combustion. During combustion in the MWC a fraction of the sulfur is converted to various gaseous sulfur compounds, the rest leaves the MWC as bottom ash and fly ash. The specific sulfur compounds released from the MWC are dependent on the presence of other gaseous compounds, combustion temperatures, and chemical (oxidizing or reducing) conditions in the combustion chamber. The oxidizing or reducing conditions directly influence the types of sulfur compounds that form.

Excess oxygen (oxidizing) conditions, typical of a MWC, produce SO_2 and SO_3. In contrast, deficient oxygen (reducing) conditions produce hydrogen sulfide (H_2S), carbonyl sulfide (COS) and elemental sulfur. Since the new unit will be operated under excess oxygen conditions, reduced forms of sulfur are not likely to form and will be negligible.

SO_2 is the predominant sulfur compound produced as a result of MSW combustion. When released into the air, some of the SO_2 reacts with atmospheric water vapor to form sulfuric acid (H_2SO_4). Sulfuric acid and emitted sulfuric acid mist (SAM) may further react in the atmosphere to form sulfate salts (particulate aerosols), which are a significant fraction of measured $PM_{2.5}$ concentrations.

1.3.2. Investigated Control Alternatives

Emissions of SO_2 and acid gases from a MWC are typically controlled by one of three types of scrubbing systems. All three use an alkaline reagent to neutralize acid gases in the flue gas stream. Two of these scrubber systems employ a water solution as the sorbent. These systems are wet scrubbers and spray dryer absorbers, also referred to as semi-dry absorption and which typically work in concert with fabric filters. The third type of scrubbing system, dry sorbent injection (or limestone injection), scrubs by injecting a completely dry sorbent into the flue gas. A description of the three technologies is presented in subsequent sections of this analysis.

1.3.2.1. Wet Scrubbers

Wet scrubbers have been designed primarily for particulate control and secondly for acid gas control in refuse combustion facilities. A wet scrubber designed for acid gas control diffuses acid gas molecules into liquid alkaline droplets thereby initiating a neutralizing chemical reaction. The scrubber is designed for efficient gas/liquid contact with maximum contact time. Wet scrubber systems are capable of achieving acid gas removal efficiencies in the range of 95 percent or higher.

There are two typical alkaline reagents: lime slurry (calcium based), and caustic soda (sodium based). The lime/slurry systems benefit from less expensive media, but at a higher capital cost. The lime/acid gas reaction produces calcium based salts, which must then be clarified, thickened, and vacuum filtered. Systems using the caustic soda/acid gas reaction produce a liquid waste that requires large, impervious holding ponds to evaporate and concentrate the dissolved sodium salts. Otherwise, the by-products of the reaction require a wastewater treatment plant.

Although wet scrubbers are frequently used domestically for high sulfur, fuel-fired power plants, municipal sludge combustors, and hazardous waste combustors, they have not been used in the waste-to-energy industry. Domestic MWC facilities have predominantly used dry or semi-dry flue gas desulfurization (FGD) systems in combination with a fabric filter (FF) baghouse. These systems minimize water use and enhance control of fine particulate matter relative to wet scrubbers.

1.3.2.2. Spray Dryer Absorber (SDA) with Fabric Filter (FF)

There are several terms used for spray dryer absorber (SDA) technologies, including dry scrubbers, wet-dry, spray dry absorbers, semi-dry absorption, or spray dry scrubbers. These scrubber technologies offer an effective and practical means of controlling acid gas emissions from MWCs. Consequently, SDAs have been applied to the majority of MWC domestic units in the past 15 years and for retrofit of existing MWCs to meet USEPA emission guidelines for acid gas emissions. Some design variations of semi-dry absorption have also been successfully used in Europe for approximately a similar period of time.

In a SDA system, acid-laden flue gases from the boiler contact finely atomized, alkaline lime slurry droplets in an absorbing chamber. The typical residence time is 10 to 15 seconds. The

lime slurry droplets absorb the gases and react to form salts. Flue gas heat evaporates the water, leaving tiny particles of mixed salt and unreacted alkali. Cooling the gas has been proven to be a major factor influencing the removal of acid gases. SO_2 and other acid gas removal efficiencies are significantly higher when the scrubber is operated at reduced temperatures.
The scrubbing process generates a dry, free-flowing powder consisting of unreacted lime, calcium salts (mostly $CaCl_2$, $CaSO_3$, and $CaSO_4$), and fly ash. The heavier portion of the dry particles drops out onto the bottom of the scrubber vessel. The lighter portion is entrained by the flue gas and enters the particulate collection device for removal, which is usually a fabric filter (FF) or less typically an electrostatic precipitator (ESP) with respect to MWC applications.

For purposes of this permit application, SDA technology also includes functionally equivalent, recirculating-type, semi-dry scrubbing technology. This technology is a design variation of semi-dry absorption and consists of a reactor/quench in which the temperature of the flue gas is controlled by water injection. The water injection promotes reaction and removal of the strong acids (HCl and HF). Dry hydrated lime (or sodium bicarbonate, if needed) is added in a requisite amount to control SO_2 emissions. After passing the reactor, the fly ash and other particulates are collected in the FF similar to the collection of particulates in the basic SDA process. The residues from the FF are recirculated several times multiplying contact time to ensure a high control efficiency is maintained.

FF versus ESP

Fabric filters are generally preferred over an ESP in combination with SDA because of their greater secondary reaction capability and inherent high control efficiency. Specifically, the porous filter cake formed on the FF bags contains both spent and unspent reagent. The filter cake has several advantages. It serves to control pressure drops, dampens surges or pollutant spikes, provides a site for increased reagent utilization, and increases equipment reliability. For these reasons, FFs have been the predominant particulate control device selected for MWC applications.

Lime Slurry Prep and Injection

Lime slurry ($Ca(OH)_2$) is prepared by hydrating pebble lime (CaO). The slurry and any needed additional cooling water are pumped into the scrubber's contact chamber and out via either nozzles or a rotary atomizer. The slurry contains stoichiometric quantities greater than the amount of lime necessary to neutralize SO_2 and acid gases in the flue gas. There are two dominant equipment designs that meet performance specifications for lime slurry injection; rotary-type atomizers and dual fluid nozzles.

Performance Results

To optimize acid gas removal by SDA/FF systems, several factors must be controlled. These factors include maintaining a lime-to-acid stoichiometric ratio typically exceeding three-fold and controlling the SDA outlet temperature (FF inlet) through the moisture content of the slurry, slurry droplet size, and inlet SO_2 concentration to the SDA. Operational information indicates

that SDA/FF systems are capable of reducing acid gas emissions at efficiencies in the range of 95 percent or higher.

1.3.2.3. Dry Sorbent Injection (DSI)

DSI is an acid gas removal process, whereby dry sorbent powder reacts with SO_2 and the resulting solids are removed in a particulate collector. Four general approaches are available:

- Furnace sorbent injection
- Economizer sorbent injection
- Duct sorbent injection
- Hybrid sorbent injection

Furnace sorbent injection is the simplest technology. A dry sorbent is injected into the upper part of the furnace to react with SO_2 in the flue gas. The finely grained sorbent is distributed quickly and evenly over the entire cross section of the furnace in the upper part where the temperature is approximately in the 1400 to 2300 °F range. The sorbent is either commercially available limestone ($CaCO_3$) or hydrated lime ($Ca(OH)_2$). While the sorbent flows through the convective pass, the sorbent reacts with SO_2 and oxygen to form $CaSO_4$ that is later collected in the particulate collection system along with unused sorbent and fly ash. The removal efficiency is approximately 50 percent. Disadvantages are potential fouling and erosion of convective heat transfer surfaces.

Economizer sorbent injection has not been proposed or demonstrated on modern MWCs. In this approach, hydrated lime is injected into the flue gas stream near the economizer zone where the temperature is approximately in the range of 600 to 1200 °F. Because of the lack of actual data from modern MWC facilities implementing this control technique, this experimental control option cannot be entirely assessed. Therefore, the approach is not considered a valid control option for the MWCs at the PCRRF facility.

Duct sorbent injection is an approach where the sorbent is evenly distributed in the flue gas duct following the preheater where the temperature is about 300 °F. The flue gas is humidified as necessary. SO_2 in the flue gas reacts with the sorbent, and the byproduct is collected downstream in the particulate collection system. The approach is more efficient than furnace sorbent injection with an 80 percent SO_2 removal efficiency in actual commercial installations. Factors influencing the performance of the system include:

- Sorbent reactivity
- Quantity of injected sorbent
- Relative humidity of the flue gas
- Gas and solids residence time in the duct
- Quantity of recycled, unreacted sorbent from the particulate control device
- Design quality of the ductwork for proper flow conditions allowing sufficient reaction time.

Hybrid sorbent injection combines furnace sorbent injection with any of several post furnace treatments, usually duct sorbent injection. The benefits achieved are higher sorbent utilization and greater SO_2 removal. Two examples of post furnace treatments are injection of secondary sorbents such as sodium compounds into the duct, and humidification in a specially designed vessel. Humidification reactivates unreacted CaO and can boost SO_2 removal efficiency up to 90 percent. The hybrid process has some very promising advantages including relatively high SO_2 removal, low capital cost, low operating cost, easy to retrofit, easy operation and maintenance with no slurry handling, reduced installation area requirements due to compact equipment, and no wastewater treatment requirements. To date, the hybrid process has not been proposed or demonstrated on modern MWC facilities.

DSI/FF Combination

Greater acid gas control can be achieved by supplementing DSI with fabric filters (FF) as opposed to electrostatic precipitators (ESP) because fabric filters collect particulates and build up a filter cake during operation. The filter cake contains some unreacted sorbent. As gas passes through, further acid absorption takes place. FFs may also provide additional control of metals through effective control of fine particulate matter. An analysis of the performance of several DSI/FF facilities (Dutchess County, New York; Claremont, New Hampshire; Quebec City, Canada; and Wurzburg, West Germany) showed up to 90 percent SO_2 and 95 percent HCl removal efficiency. However, consistently achieving such removal levels has not been documented.

1.3.3. Evaluation of Technically Feasible Control Alternatives

The technically feasible candidate control alternatives identified above are further evaluated below.

SDA/FF Summary

SDA/FFs have many advantages over the other control technologies discussed, with few disadvantages. The performance advantages of a SDA/FF system include the following:

- SDA/FF systems provide effective SO_2 and other acid gas control. The systems also reduce emissions of organics and metals.
- The dry waste product from an SDA/FF system is much easier to handle and less costly to dispose of than the liquid waste from a wet scrubber.
- SDA/FF exhaust streams are not saturated, so the potential for corrosion is greatly reduced when compared to a wet scrubber. Furthermore, flue gas reheating, which would increase energy costs, is not required to prevent a saturated vapor plume.
- SDA/FF systems consume a small supply of water that evaporates and does not require treatment.

Two main disadvantages of SDA/FF systems are potential clogging of atomizers or spray nozzles and reagent accumulation on the dry scrubber walls; however, these potential operational

issues have not been found to pose major operating challenges in practice. A SDA system also typically requires a larger quantity of sorbent and more installation space than a wet scrubber.

Wet Scrubber Summary

There are a number of significant disadvantages of wet scrubbers in MWC applications. These performance and operational disadvantages are identified below:

- High water consumption.
- Extensive and expensive effluent pretreatment system requirements.
- Generation of a sludge waste that requires thickening/dewatering and expensive disposal.
- Potential corrosion, scaling, and fouling of scrubber internal components and downstream equipment results from the saturated gas produced. High nickel chromium alloys, which are extremely expensive, are often specified.
- Production of an aesthetically displeasing visible water vapor plume.
- Poor plume dispersion of residual pollutants because of reduced buoyancy and lower plume rise resulting from lower stack gas temperatures.
- When used alone, wet scrubbers have limited effectiveness in controlling heavy metals and organic emissions. Typically, wet scrubbers are used jointly with ESPs. Fabric filters are not suitable in conjunction with wet scrubbers because of the detrimental effect of moisture on the filter bag material (Davis, W.T., 2000).
- Not effective in controlling submicron aerosol mists, including SAM.
- Relatively undemonstrated in modern MWCs in the United States.

Also relevant and noteworthy is that USEPA, in specifying the initial and amended emission guidelines and NSPS for large MWCs, has not given consideration to wet scrubbers for reducing acid gas emissions from MWCs.

DSI Summary

There are a number of disadvantages and operational challenges associated with the application of a dry injection scrubber system to a MWC unit. These disadvantages are listed below:

- Large quantities of hydrated lime that is more expensive than the pebble lime used in SDA/FFs are required. A large amount is needed to meet NSPS requirements for SO_2 removal. As a result, DSI's operational costs significantly exceed that of SDA.
- More scrubber waste is generated with DSI than with SDA because of higher sorbent usage.
- High residual alkalinity of the waste from DSI may require special handling.
- Fabric filters wear out more quickly because of more frequent cleaning necessitated by higher sorbent usages.
- Particulate control efficiency is decreased because of increased solids loading and altered properties of the particulate matter.
- Fouling may occur on convective heat transfer surfaces from sorbent injected into the economizer.
- Removal of condensable trace metals and organics is reduced because DSIs do not decrease the flue gas temperature as much as either wet scrubbers or SDAs.

- SO_2 removal efficiency is lower in DSIs than in either wet scrubbers or SDAs.

DSI may be ideal for retrofitting older combustion facilities that have no acid gas control and where control goals are only modest. For such applications, installation capital costs are minimal because dry sorbent can be injected directly into the existing furnace or duct work. However, DSI alone cannot be considered BACT for control of SO_2 and acid gases, because of lower control efficiency and minimal application to MWC facilities. Only when improved sorbents and processes are developed and tested on full-scale MWCs, should DSI systems be considered as BACT.

1.3.4. Ranking of Technically Feasible Control Alternatives

The top two acid control technologies are wet scrubbers and SDA, both technically feasible with essentially equivalent control efficiencies. DSI systems rank below these control alternatives with a lower expected control level. The candidate control technologies are ranked below according to their expected control efficiency levels:

- SDA/FF 85-95% SO_2 and 95-99% acid gas
- Wet Scrubber 85-95% SO_2 and 95-99% acid gas
- DSI 50-90% SO_2 and 90-95% acid gas

SDA and wet scrubbers both offer similar control efficiencies. The existing facility is equipped with an SDA/FF system that was in operation before the current project began. Additionally, there are many operational disadvantages associated with the use of wet scrubbers in MWC applications. Consequently, SDA/FF systems are the preferred control systems for reducing SO_2 and other acid gases from the Pinellas County MWC units. Further, SDA/FF systems also are expected to provide a higher level of control of fine particulate matter (metals) and trace organics relative to the other candidate control alternatives. Table 1 below gives a summary of the acid gas control technologies considered in the BACT analysis.

Table 1:
Summary of Investigated Acid Gas Control Technologies

Control Technology	Expected Acid Gas Control Efficiency	Primary Operational Issues	Widely Used on Large MWCs
Spray Dryer Absorber/ Fabric Filter	95-99 percent	Although not a major operating challenge, atomizers or spray nozzles can clog and reagent can accumulate on the dry scrubber walls.	Yes
Wet Scrubber	95-99 percent	High water consumption and produces an effluent that must be treated. Corrosion, scaling and fouling of scrubber internal components can occur.	No (Used in Europe; not in U.S.)
Dry Scrubber Injection	90-95 percent	Uses large quantities of lime, which causes more waste than other methods and results in shorter fabric filter life.	No

1.3.5. Selection of BACT for MWC Acid Gases and SO_2

BACT for control of SO_2 and other MWC acid gases for the MWC is determined to be a SDA/FF system. This conclusion is based on the ability of a SDA/FF system to provide the most effective control of acid gas emissions and is in agreement with permit determinations listed in the RACT/BACT/LAER Clearinghouse for recently permitted new MWC units. In addition, this conclusion is further supported by the NSPS for large MWCs. In determining appropriate emission standards for the NSPS, which was most recently amended in 2006, USEPA indicated that the best demonstrated technology for reducing emissions of acid gases from large MWCs is a SDA/FF system (70 Federal Register 75351, 2005). The PCRRF facility currently utilizes SDA/FF systems on all three of the MWCs in operation at the facility. Thus, the PCRRF facility is compliant with the BACT for MWC acid gases and SO_2. A limit of 24 ppmdv 24 hour geometric mean or 80% reduction, whichever is least stringent, is proposed as BACT for these units based on the recent determination for a similar sized, new facility in Florida, the Palm Beach Renewable Energy Facility Number 2.

1.4. BACT Analysis for CO Emissions from the MWC

Incomplete oxidation of carbon compounds during combustion will result in the generation of CO emissions from the MWCs. Control of CO emitted from the combustion unit can be achieved through good combustion practices (GCPs) that utilize good chamber design to maximize the oxidation of CO to CO_2, or by flue-gas controls that reduce CO emissions from the exiting flue gas stream. Control alternatives evaluated as BACT to reduce CO emissions from the MWCs are discussed in the sections below.

1.4.1. Description of CO Emissions from MWCs

CO is formed by incomplete oxidation of carbon compounds, such as solid waste and pyrolysis compounds near the fuel bed, during combustion. Emissions can be controlled either by GCPs or flue gas controls. The level of CO emissions is generally dependent on the underfire air dispersion to the combustor, the design of the overfire air jets, the under/overfire air ratio, and furnace combustion temperature. Maintaining GCPs requires careful operation of the furnace. A high concentration of CO in the flue gas stream is typically a sign of poor combustion control, while a low CO concentration is an indicator of high combustion efficiency.

1.4.2. Evaluation of Candidate Control Alternatives

As indicated in the RACT, BACT, LAER Clearinghouse (RBLC), thermal oxidizers, oxidation catalyst systems and other post combustion controls have not been used on MWCs for reducing CO emissions in the flue gas streams. Thermal oxidizers as a post-combustion control cannot be installed on sulfur-containing exhaust streams as they produce secondary pollutants. Further, these systems consume electrical energy. Oxidation catalysts are constructed of precious and semi-precious metals that are easily fouled by contaminants in the flue gas stream, such as sulfur, phosphorus, and trace metals. Consequently, post combustion controls are not considered BACT for the MWCs.

The primary objective of GCPs is to completely oxidize CO through proper operation of the combustor. Because of temperature variations in the furnace, MWC facilities must be designed and operated such that all combustion products are exposed for sufficient residence times at a minimum combustion temperature.

1.4.3. Selection of BACT for CO Emissions

GCPs is the selected control alternative for reducing CO emissions from the MWC units. Emission levels of 100 ppm_{dv} (4-hour) and 80 ppm_{dv} (30 day rolling average) are proposed as BACT for CO emissions. BACT will be achieved through the advanced design and proper operation of the combustor unit along with continuous monitoring of CO emissions and unit load level to ensure on-going adherence to GCP principles.

Attachment B

Air Quality Modeling Analyses

Air Quality Modeling Analyses

At the request of the Florida Department of Environmental Protection, Pinellas County analyzed the potential impact due to the modification proposed in this application for the newly promulgated one hour SO_2 ambient standard. In following the modeling guidance in Appendix W and supplemented by the memorandum issued by USEPA in the March 1, 2011, "Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour National Ambient Air Quality Standard" (which also applies to the one hour SO_2 Standard), the first step is to determine if there is an increase in emissions by comparing current actuals to future potentials. The following Table contains the monthly one hour SO_2 averages for each of the 3 units, corrected to ppm_{dv} at 7% O_2. The maximum values are bolded for each unit.

One Hour SO_2 Averages

	B1 Out O_2 Corr SO_2 (A) ppm	B2 Out O_2 Corr SO_2 (A) ppm	B3 Out O_2 Corr SO_2 (A) ppm
Jan-09	21.7	12.4	18.3
Feb-09	17.0	12.8	15.5
Mar-09	19.9	14.5	23.1
Apr-09	**27.5**	---	24.0
May-09	23.4	17.5	16.4
Jun-09	13.8	14.1	17.6
Jul-09	21.6	15.8	14.0
Aug-09	16.9	14.0	14.8
Sep-09	8.1	11.1	15.3
Oct-09	---	11.1	18.0
Nov-09	19.0	16.2	20.4
Dec-09	23.8	**23.7**	23.5
Jan-10	22.2	18.1	22.8
Feb-10	22.3	7.3	15.1
Mar-10	16.7	17.2	19.7
Apr-10	17.7	20.1	17.0
May-10	16.7	17.2	19.7
Jun-10	21.2	18.5	17.9
Jul-10	14.0	17.5	12.5

Aug-10	13.0	11.8	15.8
Sep-10	16.6	20.8	19.1
Oct-10	23.1	17.6	15.1
Nov-10	20.1	19.2	13.5
Dec-10	20.5	22.4	**25.1**
Jan-11	8.8	10.0	10.1
Feb-11	7.4	9.9	11.4
Mar-11	10.9	14.2	15.8
Apr-11	13.0	15.7	14.8
May-11	17.6	17.2	16.9
Jun-11	14.2	14.0	18.3
Jul-11	13.7	8.6	12.3
Aug-11	12.3	17.4	14.3
Sep-11	16.6	20.8	19.1
Oct-11	21.6	18.3	22.6

Our proposed SO_2 limit from the BACT analyses is 24 ppmdv. As can be seen from the above table, the current actuals for SO_2 are equal to or greater than 24 ppmdv. The highest monthly one hour average for Unit 2 is 23.7, but as a monthly one hour average, there are separate one hour values that are greater than 24 for this unit.

Therefore, since our future potential emissions will be equal to or less than our current actual emissions, no further analyses are required.

Attachment C

Application Forms

RECEIVED
DEC 12 2011
DIVISION OF AIR RESOURCE MANAGEMENT

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: Pinellas County Board of County Commissioners	
2. Site Name: Pinellas County Resource Recovery Facility	
3. Facility Identification Number: 1030117	
4. Facility Location... Street Address or Other Locator: 3001 110th Avenue North City: St. Petersburg County: Pinellas Zip Code: 33716-2002	
5. Relocatable Facility? ☐ Yes ☑ No	6. Existing Title V Permitted Facility? ☑ Yes ☐ No

Application Contact

1. Application Contact Name: Tamara L. Stankunas & Christopher C. Tilman
2. Application Contact Mailing Address... Organization/Firm: Earthshine Environmental, Inc. & Malcolm Pirnie, the Water Division of ARCADIS Street Address: 14025 Riveredge Drive Suite 600 City: Tampa State: FL Zip Code: 33637
3. Application Contact Telephone Numbers... Telephone: (813) 545-7067 & (239) 738-3303 Fax: (813) 441-6911 & (239) 275-2127
4. Application Contact E-mail Address: tstankunas@earthshineinc.com & christopher.tilman@arcadis-us.com

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 12-12-11	3. PSD Number (if applicable):
2. Project Number(s): 1030117-009- PSD 011D and 098D	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

[X] Air construction permit.*

[ ] Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

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

Air Operation Permit

[ ] Initial Title V air operation permit.

[ ] Title V air operation permit revision.

[ ] Title V air operation permit renewal.

[ ] Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

[ ] Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

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

[ ] Air construction permit and Title V permit revision, incorporating the proposed project.

[ ] Air construction permit and Title V permit renewal, incorporating the proposed project.

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

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

Application Comment

*This application submittal package is to request modification of PSD-FL-011B and PSD-FL-098B to establish PSD potential to emit limits for SO_2, CO, and MWC Acid Gases (SO_2 portion) and to modify the Facility's compliance determination for MWC load (capacity) to be based on steam load rather than a per ton limit (as discussed in cover letter of this submittal package).

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
001	Municipal Waste Combustor Unit 1		
002	Municipal Waste Combustor Unit 2		
003	Municipal Waste Combustor Unit 3		

Application Processing Fee

Check one: ☑ Attached - Amount: $ 7,500 ☐ 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 :
   Robert J. Hauser, Director
2. Owner/Authorized Representative Mailing Address.
   Organization/Firm: Pinellas County Department of Environment and Infrastructure
   Street Address: 3095 114th Avenue North
   City: St. Petersburg State: FL Zip Code: 33716
3. Owner/Authorized Representative Telephone Numbers...
   Telephone: (727) 464 - 7500 ext. Fax: (727) 464 - 7713
4. Owner/Authorized Representative E-mail Address: rhauser@pinellascounty.org
5. Owner/Authorized Representative Statement:

   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.

   Robert Hauser — Signature

   12/7/11 — 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:
   Robert J. Hauser

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

   ☐ 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.

   ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

   ☑ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

   ☐ The designated representative at an Acid Rain source or CAIR source.

3. Application Responsible Official Mailing Address...
   Organization/Firm: Pinellas County Department of Environment and Infrastructure
   Street Address: 3095 114th Avenue North
   City: St. Petersburg State: FL Zip Code: 33716

4. Application Responsible Official Telephone Numbers...
   Telephone: (727) 464 - 7500 ext. Fax: (727) 464 - 7713

5. Application Responsible Official E-mail Address: rhauser@pinellascounty.org

APPLICATION INFORMATION

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.

Robert Kaeser / 12/7/11

Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: Christopher C. Tilman, P.E.
   Registration Number: 61903
2. Professional Engineer Mailing Address.
   Organization/Firm: Malcolm Pirnie, the Water Division of ARCADIS
   Street Address: 14025 Riveredge Drive, Suite 600
   City: Tampa State: FL Zip Code: 33637
3. Professional Engineer Telephone Numbers...
   Telephone: (239) 738-3303 ext. Fax: (239) 275-2127
4. Professional Engineer E-mail Address: christopher.tilman@arcadis-us.com
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(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

(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.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, 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.

(4) If the purpose of this application is to obtain an air construction permit (check here ☐, 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 ☐, 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.

(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 , 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.

Signature 12-7-11 Date

(seal)

* Attach any exception to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 17 East (km) 335.273 North (km) 3084.304		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 27° 52' 24.2" N Longitude (DD/MM/SS) 82° 40' 23.6" W	
3. Governmental Facility Code: (3) Source Owned or Operated by the County	4. Facility Status Code: Active	5. Facility Major Group SIC Code: (49) Electric, Gas and Sanitary Services	6. Facility SIC(s): Primary: 4953
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: Rebecca Macionski, Environmental Manager
2. Facility Contact Mailing Address... Organization/Firm: Veolia ES Pinellas, Inc. Street Address: 3001 110th Avenue North City: St. Petersburg State: FL Zip Code: 33716
3. Facility Contact Telephone Numbers: Telephone: (727) 572 - 9163 ext. Fax: ( ) -
4. Facility Contact E-mail Address: rebecca.macionski@veoliaes.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: Robert Hauser
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Pinellas County Department of Environment and Infrastructure Street Address: 3095 114th Avenue North City: St. Petersburg State: FL Zip Code: 33716
3. Facility Primary Responsible Official Telephone Numbers... Telephone: (727) 464 - 7500 ext. Fax: (727) 464 - 7713
4. Facility Primary Responsible Official E-mail Address: rhauser@pinellascounty.org

FACILITY INFORMATION

Facility Regulatory Classifications

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

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☑ Title V Source	
4. ☑ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☑ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☑ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☑ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☑ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM10	A – Major pollutant	
NO_x	A – Major pollutant	
CO	A – Major pollutant	
PM	A – Major pollutant	
SO_2	A – Major pollutant	
FL	B – Facility-regulated pollutant, not major or synthetic	
D/F	B – Facility-regulated pollutant, not major or synthetic	
H027	B – Facility-regulated pollutant, not major or synthetic	
H106	B – Facility-regulated pollutant, not major or synthetic	
H114	B – Facility-regulated pollutant, not major or synthetic	
VOC	B – Facility-regulated pollutant, not major or synthetic	
PB	B – Facility-regulated pollutant, not major or synthetic	

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

Not Applicable

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) ☐ Attached, Document ID:_____ ☑ Previously Submitted, Date:01-29-2010
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) ☐ Attached, Document ID:_____ ☑ Previously Submitted, Date: 04-01-2010
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) ☐ Attached, Document ID:_____ ☑ Previously Submitted, Date: 04-01-2010

Additional Requirements for Air Construction Permit Applications

1.	Area Map Showing Facility Location: ☐ Attached, Document ID:_____ ☑ Not Applicable (existing permitted facility)
2.	Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): ☑ Attached, Document ID: Attachment D
3.	Rule Applicability Analysis: ☐ Attached, Document ID:_____ N/A
4.	List of Exempt Emissions Units: ☐ Attached, Document ID:_____ ☑ Not Applicable (no exempt units at facility)
5.	Fugitive Emissions Identification: ☐ Attached, Document ID:_____ ☑ Not Applicable
6.	Air Quality Analysis (Rule 62-212.400(7), F.A.C.): ☐ Attached, Document ID:_____ ☑ Not Applicable
7.	Source Impact Analysis (Rule 62-212.400(5), F.A.C.): ☐ Attached, Document ID:_____ ☑ Not Applicable
8.	Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): ☐ Attached, Document ID:_____ ☑ Not Applicable
9.	Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): ☐ Attached, Document ID:_____ ☑ Not Applicable
10.	Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): ☐ Attached, Document ID:_____ ☑ 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:_____ N/A
   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)

Additional Requirements Comment

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.

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:
Municipal Waste Combustor Unit 1

3. Emissions Unit Identification Number: 1

4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date: May 4, 1983	7. Emissions Unit Major Group SIC Code: 49

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

☐ Acid Rain Unit

☐ CAIR Unit

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating: 50 MW

11. Emissions Unit Comment:
Compliance is demonstrated based on steam production.
Capacity is restricted by steam production, which effectively limits heat input in MMBtu/hour. Maximum steam production is limited to 275,000 lbs/hour on a 4-hour block average.

Emissions Unit Control Equipment/Method: Control 1 of 4

1. Control Equipment/Method Description: Fabric Filter – High Temperature (T > 250 F)
2. Control Device or Method Code: 016

Emissions Unit Control Equipment/Method: Control 2 of 4

1. Control Equipment/Method Description: Activated Carbon Adsorption – Carbon injection system
2. Control Device or Method Code: 048

Emissions Unit Control Equipment/Method: Control 3 of 4

1. Control Equipment/Method Description: Dry Limestone Injection – Spray dryer absorber
2. Control Device or Method Code: 041

Emissions Unit Control Equipment/Method: Control 4 of 4

1. Control Equipment/Method Description: Selective Non-Catalytic Reduction for NO_x - SNCR
2. Control Device or Method Code: 107

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: 1,100 TPD @ 5,000 Btu*	
2. Maximum Production Rate: 275,000 lb of steam/hour	
3. Maximum Heat Input Rate: 458 million Btu/hr	
4. Maximum Incineration Rate: 91,667 pounds/hr* 1,100 tons/day*	
5. Requested Maximum Operating Schedule:	
24 hours/day	7 days/week
52 weeks/year	8,760 hours/year

6. Operating Capacity/Schedule Comment:
*As discussed in the submittal cover letter and page 2 of this application form, the County requests that the Facility's compliance determination for MWC load (capacity) be based on steam load rather than a per ton limit.

Capacity is restricted by steam production (275,000 lbs/hour maximum) based upon a 4-hour block average, which effectively limits heat input in MMBtu/hour. Grates are designed based on heat input, with a rated capacity of 416.7 MMBtu and with a maximum rated (110%) capacity of 457.6 MMBtu, utilizing waste with an acceptable heating value ranging from 3,500 to 6,000 Btu/lb. Nominal design is 1,000 tons/day at 5,000 Btu/lb, with an expected maximum throughput of 1,248 tons/day with 4,400 Btu/lb fuel.

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:	2. Emission Point Type Code: 1 – A single emission point serving a single emissions unit.	
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: V	6. Stack Height: 165 feet	7. Exit Diameter: 8.5 feet
8. Exit Temperature: 270 °F	9. Actual Volumetric Flow Rate: 243,117 acfm	10. Water Vapor: 13.4%
11. Maximum Dry Standard Flow Rate: 139,792 dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: 17 East (km): 335.273 North (km): 3084.304	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) 27° 52' 24.2" N Longitude (DD/MM/SS) 82° 40' 23.6" W	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC): 10100602	3. SCC Units: Million Cubic Feet Natural Gas Burned	
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
10. Segment Comment: Natural gas for auxiliary burner.		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC): 10101201	3. SCC Units: Tons of Solid Waste Burned	
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
10. Segment Comment: Capacity is restricted by steam production (275,000 lbs/hour maximum) based upon a 4-hour block average, which effectively limits heat input in MMBtu/hour. Total quantity of waste tire and non-segregated MSW material burned shall not exceed 3% and 5% by weight, respectively.		

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			
D/F			
H027 (Cadmium compounds)	**016**		
H106 (Hydrogen Chloride)	**041**	**016**	
H114 (Mercury)	**048**	**016**	
HAPS			
NO_x	**107**		
PB	**016**		
PM	**016**		
PM10	**016**		
SO_x	**041**	**016**	
VOC			

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 – Carbon Monoxide	2. Total Percent Efficiency of Control:
3. Potential Emissions: 60.94 lb/hour 213.53 tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 100 ppmvd @ 7% O_2 (4-hour block average) and 80 ppmvd @ 7% O_2 (30-day rolling average) Reference: BACT and 40 CFR 60 Subpart Cb	7. Emissions Method Code:
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: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

$$\frac{100 \text{ ppmdv}}{10^6} * \frac{139{,}792 \text{ dscf}}{\text{min}} @ 7\% O_2 * \frac{28 \text{ lb}}{\text{mol}} * \frac{0.002595 \text{ mol}}{\text{dscf}} * \frac{60 \text{ min}}{\text{hr}} = 60.94 \text{ lb/hr}$$

$$\frac{60.94 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2{,}000 \text{ lb}} * \frac{8{,}760 \text{ hr}}{\text{yr}} = 267 \text{ tons/yr}$$

$$\frac{80 \text{ ppmdv}}{10^6} * \frac{139{,}792 \text{ dscf}}{\text{min}} @ 7\% O_2 * \frac{28 \text{ lb}}{\text{mol}} * \frac{0.002595 \text{ mol}}{\text{dscf}} * \frac{60 \text{ min}}{\text{hr}} = 48.75 \text{ lb/hr}$$

$$\frac{48.75 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2{,}000 \text{ lb}} * \frac{8{,}760 \text{ hr}}{\text{yr}} = 213.53 \text{ tons/yr}$$

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 2

1. Basis for Allowable Emissions Code: (RULE) required by rule specified in regulation	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 100 ppmvd @ 7% O_2, 4-hour average	4. Equivalent Allowable Emissions: 60.94 lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): 40 CFR 60 Subpart Cb	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 80 ppmvd @ 7% O_2 (30-day)	4. Equivalent Allowable Emissions: lb/hour 213.53 tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): BACT 30-day rolling average and used to establish emissions in TPY	

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):	

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 – Sulfur Dioxide	2. Total Percent Efficiency of Control:
3. Potential Emissions: 33.43 lb/hour 146.43 tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 24 ppmdv @ 7% O_2, 24-hour daily geometric mean or 80% reduction Reference: BACT	7. Emissions Method Code:
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: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

$$\frac{24 \text{ ppmdv}}{10^6} * \frac{139{,}792 \text{ dscf @ 7\% } O_2}{\text{min}} * \frac{64 \text{ lb}}{\text{mol}} * \frac{0.002595 \text{ mol}}{\text{dscf}} * \frac{60 \text{ min}}{\text{hr}} = 33.43 \text{ lb/hr}$$

$$\frac{33.43 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2{,}000 \text{ lb}} * \frac{8{,}760 \text{ hr}}{\text{yr}} = 146.43 \text{ tons/yr}$$

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 2

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 24 ppmdv, 24-hour daily geometric mean	4. Equivalent Allowable Emissions: 33.43 lb/hour 146.43 tons/year
5. Method of Compliance: CEM 24-hour block average	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: Rule	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 80% emissions reduction	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

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):	

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 __ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

Not Applicable

Visible Emissions Limitation: Visible Emissions Limitation __ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

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:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Not Applicable	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

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)
   ☐ Attached, Document ID: _____ ☐ 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)
   ☐ Attached, Document ID: _____ ☐ 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)
   ☐ Attached, Document ID: _____ ☐ 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)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☐ Not Applicable (construction application)

Not Applicable

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)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☐ Not Applicable

6. Compliance Demonstration Reports/Records:
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ 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:
   ☐ Attached, Document ID: _____ ☐ Not Applicable

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)): ☐ Attached, Document ID: _____ ☐ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☐ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☐ Attached, Document ID:
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Alternative Methods of Operation: ☐ Attached, Document ID: _____ ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☐ Not Applicable

Not Applicable

Additional Requirements Comment

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:
Municipal Waste Combustor Unit 2

3. Emissions Unit Identification Number: 2

4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date: May 4, 1983	7. Emissions Unit Major Group SIC Code: 49

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

☐ Acid Rain Unit

☐ CAIR Unit

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating: 50 MW

11. Emissions Unit Comment:
Compliance is demonstrated based on steam production.
Capacity is restricted by steam production, which effectively limits heat input in MMBtu/hour. Maximum steam production is limited to 275,000 lbs/hour on a 4-hour block average.

Emissions Unit Control Equipment/Method: Control 1 of 4

1. Control Equipment/Method Description: Fabric Filter – High Temperature (T > 250 F)
2. Control Device or Method Code: 016

Emissions Unit Control Equipment/Method: Control 2 of 4

1. Control Equipment/Method Description: Activated Carbon Adsorption – Carbon injection system
2. Control Device or Method Code: 048

Emissions Unit Control Equipment/Method: Control 3 of 4

1. Control Equipment/Method Description: Dry Limestone Injection – Spray dryer absorber
2. Control Device or Method Code: 041

Emissions Unit Control Equipment/Method: Control 4 of 4

1. Control Equipment/Method Description: Selective Non-Catalytic Reduction for NO_x - SNCR
2. Control Device or Method Code: 107

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: 1,100 TPD at 5,000 Btu*	
2. Maximum Production Rate: 275,000 lb of steam/hour	
3. Maximum Heat Input Rate: 458 million Btu/hr	
4. Maximum Incineration Rate: 91,667 pounds/hr* 1,100 tons/day*	
5. Requested Maximum Operating Schedule:	
24 hours/day	7 days/week
52 weeks/year	8,760 hours/year

6. Operating Capacity/Schedule Comment:
* As discussed in the submittal cover letter and page 2 of this application form, the County requests that the Facility's compliance determination for MWC load (capacity) be based on steam load rather than a per ton limit.

Capacity is restricted by steam production (275,000 lbs/hour maximum) based upon a 4-hour block average, which effectively limits heat input in MMBtu/hour. Grates are designed based on heat input, with a rated capacity of 416.7 MMBtu and with a maximum rated (110%) capacity of 457.6 MMBtu, utilizing waste with an acceptable heating value ranging from 3,500 to 6,000 Btu/lb. Nominal design is 1,000 tons/day at 5,000 Btu/lb, with an expected maximum throughput of 1,248 tons/day with 4,400 Btu/lb fuel.

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:	2. Emission Point Type Code: 1 – A single emission point serving a single emissions unit.	
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: V	6. Stack Height: 165 feet	7. Exit Diameter: 8.5 feet
8. Exit Temperature: 270 °F	9. Actual Volumetric Flow Rate: 243,117 acfm	10. Water Vapor: 13.4 %
11. Maximum Dry Standard Flow Rate: 139,792 dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: 17 East (km): 335.273 North (km): 3084.304	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) 27° 52' 24.2" N Longitude (DD/MM/SS) 82° 40' 23.6" W	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC): 10100602	3. SCC Units: Million Cubic Feet Natural Gas Burned	
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
10. Segment Comment: Natural gas for auxiliary burner.		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC): 10101201	3. SCC Units: Tons of Solid Waste Burned	
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
10. Segment Comment: Capacity is restricted by steam production (275,000 lbs/hour maximum) based upon a 4-hour block average, which effectively limits heat input in MMBtu/hour. Total quantity of waste tire and non-segregated MSW material burned shall not exceed 3% and 5% by weight, respectively.		

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			
D/F			
H027 (Cadmium compounds)	**016**		
H106 (Hydrogen Chloride)	**041**	**016**	
H114 (Mercury)	**048**	**016**	
HAPS			
NO_x	**107**		
PB	**016**		
PM	**016**		
PM10	**016**		
SO_x	**041**	**016**	
VOC			

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 – Carbon Monoxide	2. Total Percent Efficiency of Control:
3. Potential Emissions: 60.94 lb/hour 213.53 tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 100 ppmvd @ 7% O_2 (4-hour block average) and 80 ppmvd @ 7% O_2 (30-day rolling average) Reference: BACT and 40 CFR 60 Subpart Cb	7. Emissions Method Code:
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: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

$$\frac{100 \text{ ppmdv}}{10^6} * \frac{139{,}792 \text{ dscf}}{\text{min}} @ 7\% O_2 * \frac{28 \text{ lb}}{\text{mol}} * \frac{0.002595 \text{ mol}}{\text{dscf}} * \frac{60 \text{ min}}{\text{hr}} = 60.94 \text{ lb/hr}$$

$$\frac{60.94 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2{,}000 \text{ lb}} * \frac{8{,}760 \text{ hr}}{\text{yr}} = 267 \text{ tons/yr}$$

$$\frac{80 \text{ ppmdv}}{10^6} * \frac{139{,}792 \text{ dscf}}{\text{min}} @ 7\% O_2 * \frac{28 \text{ lb}}{\text{mol}} * \frac{0.002595 \text{ mol}}{\text{dscf}} * \frac{60 \text{ min}}{\text{hr}} = 48.75 \text{ lb/hr}$$

$$\frac{48.75 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2{,}000 \text{ lb}} * \frac{8{,}760 \text{ hr}}{\text{yr}} = 213.53 \text{ tons/yr}$$

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 2

1. Basis for Allowable Emissions Code: (RULE) required by rule specified in regulation	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 100 ppmvd @ 7% O_2, 4-hour average	4. Equivalent Allowable Emissions: 60.94 lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): 40 CFR 60 Subpart Cb	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 80 ppmvd @ 7% O_2 (30-day)	4. Equivalent Allowable Emissions: lb/hour 213.53 tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): BACT 30-day rolling average and used to establish emissions in TPY	

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):	

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 – Sulfur Dioxide	2. Total Percent Efficiency of Control:
3. Potential Emissions: 33.43 lb/hour 146.43 tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 24 ppmdv @ 7% O_2, 24-hour daily geometric mean or 80% reduction Reference: BACT	7. Emissions Method Code:
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: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

$$\frac{24 \text{ ppmdv}}{10^6} * \frac{139{,}792 \text{ dscf}}{\text{min}} @ 7\% O_2 * \frac{64 \text{ lb}}{\text{mol}} * \frac{0.002595 \text{ mol}}{\text{dscf}} * \frac{60 \text{ min}}{\text{hr}} = 33.43 \text{ lb/hr}$$

$$\frac{33.43 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2{,}000 \text{ lb}} * \frac{8{,}760 \text{ hr}}{\text{yr}} = 146.43 \text{ tons/yr}$$

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 2

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 24 ppmdv, 24-hour daily geometric mean	4. Equivalent Allowable Emissions: 33.43 lb/hour 146.43 tons/year
5. Method of Compliance: CEM 24-hour block average	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: Rule	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 80% emissions reduction	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

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):	

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 __ of ___

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

Not Applicable

Visible Emissions Limitation: Visible Emissions Limitation __ of ___

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

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:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Not Applicable

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

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)
   ☐ Attached, Document ID: _____ ☐ 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)
   ☐ Attached, Document ID: _____ ☐ 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)
   ☐ Attached, Document ID: _____ ☐ 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)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☐ Not Applicable (construction application)

Not Applicable

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)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☐ Not Applicable

6. Compliance Demonstration Reports/Records:
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ 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:
   ☐ Attached, Document ID: _____ ☐ Not Applicable

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)): ☐ Attached, Document ID: _____ ☐ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☐ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

Not Applicable

1. Identification of Applicable Requirements: ☐ Attached, Document ID:
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Alternative Methods of Operation: ☐ Attached, Document ID: _____ ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☐ Not Applicable

Additional Requirements Comment

EMISSIONS UNIT INFORMATION
Section [3] of [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:
Municipal Waste Combustor Unit 3

3. Emissions Unit Identification Number: 3

4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date: Aug 1, 1986	7. Emissions Unit Major Group SIC Code: 49

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

☐ Acid Rain Unit

☐ CAIR Unit

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating: 25 MW

11. Emissions Unit Comment:
Compliance is demonstrated based on steam production.
Capacity is restricted by steam production, which effectively limits heat input in MMBtu/hour. Maximum steam production is limited to 275,000 lbs/hour on a 4-hour block average.

EMISSIONS UNIT INFORMATION
Section [3] of [3]

Emissions Unit Control Equipment/Method: Control 1 of 4

1. Control Equipment/Method Description: Fabric Filter – High Temperature (T > 250 F)
2. Control Device or Method Code: 016

Emissions Unit Control Equipment/Method: Control 2 of 4

1. Control Equipment/Method Description: Activated Carbon Adsorption – Carbon injection system
2. Control Device or Method Code: 048

Emissions Unit Control Equipment/Method: Control 3 of 4

1. Control Equipment/Method Description: Dry Limestone Injection – Spray dryer absorber
2. Control Device or Method Code: 041

Emissions Unit Control Equipment/Method: Control 4 of 4

1. Control Equipment/Method Description: Selective Non-Catalytic Reduction for NO_x - SNCR
2. Control Device or Method Code: 107

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: 1,100 TPD at 5,000 Btu*	
2. Maximum Production Rate: 275,000 lb of steam/hour	
3. Maximum Heat Input Rate: 458 million Btu/hr	
4. Maximum Incineration Rate: 91,667 pounds/hr* 1,100 tons/day*	
5. Requested Maximum Operating Schedule:	
24 hours/day	7 days/week
52 weeks/year	8,760 hours/year

6. Operating Capacity/Schedule Comment:
* As discussed in the submittal cover letter and page 2 of this application form, the County requests that the Facility's compliance determination for MWC load (capacity) be based on steam load rather than a per ton limit.

Capacity is restricted by steam production (275,000 lbs/hour maximum) based upon a 4-hour block average, which effectively limits heat input in MMBtu/hour. Grates are designed based on heat input, with a rated capacity of 416.7 MMBtu and with a maximum rated (110%) capacity of 457.6 MMBtu, utilizing waste with an acceptable heating value ranging from 3,500 to 6,000 Btu/lb. Nominal design is 1,000 tons/day at 5,000 Btu/lb, with an expected maximum throughput of 1,248 tons/day with 4,400 Btu/lb fuel.

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:	2. Emission Point Type Code: 1 – A single emission point serving a single emissions unit.	
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: V	6. Stack Height: 165 feet	7. Exit Diameter: 8.5 feet
8. Exit Temperature: 270 °F	9. Actual Volumetric Flow Rate: 243,117 acfm	10. Water Vapor: 13.4 %
11. Maximum Dry Standard Flow Rate: 139,792 dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: 17 East (km): 335.273 North (km): 3084.304	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) 27° 52' 24.2" N Longitude (DD/MM/SS) 82° 40' 23.6" W	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC): 10100602	3. SCC Units: Million Cubic Feet Natural Gas Burned	
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
10. Segment Comment: Natural gas for auxiliary burner.		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC): 10101201	3. SCC Units: Tons of Solid Waste Burned	
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
10. Segment Comment: Capacity is restricted by steam production (275,000 lbs/hour maximum) based upon a 4-hour block average, which effectively limits heat input in MMBtu/hour. Total quantity of waste tire and non-segregated MSW material burned shall not exceed 3% and 5% by weight, respectively.		

EMISSIONS UNIT INFORMATION
Section [3] of [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			
D/F			
H027 (Cadmium compounds)	**016**		
H106 (Hydrogen Chloride)	**041**	**016**	
H114 (Mercury)	**048**	**016**	
HAPS			
NO_x	**107**		
PB	**016**		
PM	**016**		
PM10	**016**		
SO_x	**041**	**016**	
VOC			

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 – Carbon Monoxide	2. Total Percent Efficiency of Control:
3. Potential Emissions: 60.94 lb/hour 213.53 tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 100 ppmvd @ 7% O_2 (4-hour block average) and 80 ppmvd @ 7% O_2 (30-day rolling average) Reference: BACT and 40 CFR 60 Subpart Cb	7. Emissions Method Code:
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: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

$$\frac{100 \text{ ppmdv}}{10^6} * \frac{139{,}792 \text{ dscf}}{\text{min}} @ 7\% O_2 * \frac{28 \text{ lb}}{\text{mol}} * \frac{0.002595 \text{ mol}}{\text{dscf}} * \frac{60 \text{ min}}{\text{hr}} = 60.94 \text{ lb/hr}$$

$$\frac{60.94 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2{,}000 \text{ lb}} * \frac{8{,}760 \text{ hr}}{\text{yr}} = 267 \text{ tons/yr}$$

$$\frac{80 \text{ ppmdv}}{10^6} * \frac{139{,}792 \text{ dscf}}{\text{min}} @ 7\% O_2 * \frac{28 \text{ lb}}{\text{mol}} * \frac{0.002595 \text{ mol}}{\text{dscf}} * \frac{60 \text{ min}}{\text{hr}} = 48.75 \text{ lb/hr}$$

$$\frac{48.75 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2{,}000 \text{ lb}} * \frac{8{,}760 \text{ hr}}{\text{yr}} = 213.53 \text{ tons/yr}$$

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 2

1. Basis for Allowable Emissions Code: (RULE) required by rule specified in regulation	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 100 ppmvd @ 7% O_2, 4-hour average	4. Equivalent Allowable Emissions: 60.94 lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): 40 CFR 60 Subpart Cb	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 80 ppmvd @ 7% O_2 (30-day)	4. Equivalent Allowable Emissions: lb/hour 213.53 tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): BACT 30-day rolling average and used to establish emissions in TPY	

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):	

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 – Sulfur Dioxide	2. Total Percent Efficiency of Control:
3. Potential Emissions: 33.43 lb/hour 146.43 tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 24 ppmdv @ 7% O_2, 24-hour daily geometric mean or 80% reduction Reference: BACT	7. Emissions Method Code:
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: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

$$\frac{24 \text{ ppmdv}}{10^6} * \frac{139{,}792 \text{ dscf}}{\text{min}} @ 7\% O_2 * \frac{64 \text{ lb}}{\text{mol}} * \frac{0.002595 \text{ mol}}{\text{dscf}} * \frac{60 \text{ min}}{\text{hr}} = 33.43 \text{ lb/hr}$$

$$\frac{33.43 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2{,}000 \text{ lb}} * \frac{8{,}760 \text{ hr}}{\text{yr}} = 146.43 \text{ tons/yr}$$

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 2

1. Basis for Allowable Emissions Code: Other	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 24 ppmdv, 24-hour daily geometric mean	4. Equivalent Allowable Emissions: 33.43 lb/hour 146.43 tons/year
5. Method of Compliance: CEM 24-hour block average	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: Rule	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 80% emissions reduction	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

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):	

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 __ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

Not Applicable

Visible Emissions Limitation: Visible Emissions Limitation __ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

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:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Not Applicable

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

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)
   ☐ Attached, Document ID: _____ ☐ 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)
   ☐ Attached, Document ID: _____ ☐ 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)
   ☐ Attached, Document ID: _____ ☐ 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)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☐ Not Applicable (construction application)

Not Applicable

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)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☐ Not Applicable

6. Compliance Demonstration Reports/Records:
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ 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:
   ☐ Attached, Document ID: _____ ☐ Not Applicable

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)): ☐ Attached, Document ID: _____ ☐ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☐ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☐ Attached, Document ID: _____
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Alternative Methods of Operation: ☐ Attached, Document ID: _____ ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☐ Not Applicable

Not Applicable

Additional Requirements Comment

Attachment D

July 24, 2006 Letter

July 24, 2006

Ms. Trina Vielhauer
Bureau Chief
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

RE: Pinellas County – Waste to Energy Facility
Proposed Facility Projects

Dear Ms. Vielhauer:

On behalf of Pinellas County, I am submitting this letter to the Department of Environmental Protection ("Department" or "DEP") because the County wishes to obtain the Department's approval for several construction projects ("Projects") that the County intends to undertake at the County's Waste to Energy Facility ("Facility"). As explained below, the Projects primarily consist of like-kind replacements of existing equipment. The Projects will help ensure the safe and reliable operation of the Facility, but the Projects will not increase the Facility's capacity to process municipal solid waste ("MSW"). The Projects also will not cause an increase in the Facility's short-term emissions or a significant increase in the Facility's annual emissions. The Projects do not constitute a "modification" or "reconstruction" of the Facility. For these reasons, the Projects do not trigger the Department's review process under the Prevention of Significant Deterioration ("PSD") program or the requirements of the Department's New Source Performance Standards ("NSPS").

Based on the information contained in this letter, the County respectfully requests the Department to amend the Facility's PSD permits (PSD-FL-011B and PSD-FL-098B) and thereby authorize the construction of the Projects.

The following sections of this letter contain a more detailed description of the Projects and a more complete explanation of why the County believes the Department's PSD and NSPS requirements do not apply to the Projects.

Overview

The Projects primarily will consist of the in-kind replacement of existing equipment and systems. The County expects to commence construction on the Projects in 2007. It is anticipated that the Projects will be completed within three or four years.

Furnace Tube Replacements

During the period 2001 through 2003, Pinellas County replaced boiler convection tubes located in the evaporator, superheater, and economizer portions of the three boiler units at the Facility. This work was referred to as the "Capital Replacement Project" or "CRP Project". The CRP Project was authorized by the Department pursuant to PSD Permit No. PSD-FL-011B and PSD-FL-098B. The CRP Project was completed in late 2003.

The County now wishes to replace certain boiler tubes that are located in the furnace section of each boiler. These tubes were not replaced during the CRP Project, and consist largely of original tube sections with connecting membranes, commonly known as water walls. These water wall panels are connected to header systems at both the top and bottom of the furnace. Collectively, the system of water walls, furnace roof tubes, membranes and headers constitute the "furnace" area of the units. Also contained within the furnace are various air nozzles for combustion control, urea injection ports for use with the Selective Non-Catalytic Reduction (SNCR) System for NO_x control, access doors, view ports, and various instruments and appurtenances. Furnace tubes are protected from the corrosive environment by a combination of refractory type coverings over the tubes, or by special alloy "overlay" materials applied by a welding process. While many individual tubes and small groups of tubes have been replaced over the years because of excessive tube thinning or to repair leaks, the majority of the furnace tubes are original materials that have been in continuous service for more than 20 years.

As part of the County's Projects, the boiler tubes in the furnace sections of each boiler will be replaced with in-kind tubes. The replacement of the boiler tubes will not change the design steaming rate for the boilers.

The work on the boiler tubes will be performed during extended boiler outages. The work will be completed over a three year period.

Grate Replacements

Similar to the situation described above for the furnaces, the stoker grate and waste feed chute for each boiler consists largely of original equipment, with repairs of certain components performed over the years. A portion of the grate support system on Boiler No. 3 was replaced during the CRP Project in 2003.

The County now wishes to replace various components of the grate system for each boiler. The planned grate work will consist of the in-kind replacement of the grate system key components, including the lower feed chute, bracing beams and supports, the grate bars, and miscellaneous related components, such as "riddling" systems for removing

fines from the underside of the grate. The work is scheduled to be performed on one unit at a time, coincident with the furnace tube replacement work described above. The proposed work on the grate system will not change the design grate heat release rate or the design waste feed rate for the boilers.

Air Preheater Replacements
Each of the three boilers has an air preheater, which heats the incoming combustion air by using steam as the heating medium. The air preheaters are part of the overall combustion control system. The existing air preheaters have reached the end of their useful life, due to corrosion, pluggage and general wear and tear. The County now intends to replace the air preheaters with functionally equivalent equipment, when the County conducts the furnace and grate repair projects.

Ash Processing and Storage Building Replacement
The County has a separate building that is used for ash processing and storage. This building has deteriorated due to heavy corrosion resulting from prolonged contact with moist ash and scrubber residue, combined with normal wear and tear. The County intends to demolish the existing ash processing and storage building and replace it with a building having a smaller footprint, using more robust, corrosion resistant materials. The metal processing system will be simplified, but will still separate both ferrous and non-ferrous materials from the residue stream so that these recycled materials can be sold in the scrap market.

Since the existing ash processing and storage building will be replaced with a smaller building, the location and characteristics of some of the existing emission points in the building may be changed slightly in the future. Accordingly, some elements of the Facility's Title V Operating Permit are likely to require minor revisions to conform to the configuration of the new building.

Air Pollution Control System Improvements
The County intends to make several improvements to the Facility's air pollution control systems. First, the County intends to convert the Facility's existing volumetric carbon feeders to loss-in-weight feeders. This change will enable the County to obtain a more accurate measurement of the Facility's feed rate for powdered activated carbon, which is used to control mercury emissions. Second, the County intends to install a redundant lime slurry distribution header. This improvement will enable the County to clean lime buildup in the slurry piping system during normal operations. The redundant system will help ensure that the Facility's acid gas control system receives a uninterrupted supply of lime slurry at all times. Third, the existing inlet and outlet sample probes for the continuous emissions monitoring system (CEMS) will replaced.

NSPS Regulatory Applicability

The County's proposed Projects will not increase the design capacity of the three municipal waste combustor ("MWC") units at the Facility. The Projects also will not increase the Facility's short-

term emission rates (e.g., kg/hr). For these reasons, the Projects are not a "modification", as defined in the New Source Performance Standards (see 40 CFR § 60.14).

The Projects also do not constitute a "reconstruction", as defined in the NSPS. The "physical boundaries" of the MWC units (i.e., the "affected facility" for NSPS purposes) start at the MSW pit and extend through the economizer outlet, the bottom ash system, and the combustor water system as outlined at 40 CFR § 60.51b. Based on information contained in the August 30, 2000 letter application for the CRP project, and using the *Chemical Engineering Plant Cost Index* of 394.1 for calendar year 2000 and 468.2 for calendar year 2005, the total new construction costs for the regulated portions of the Facility's MWCs would be approximately $344.5 million (year 2005 dollars).

The estimated capital cost of the Projects is $ 64.3 million (2005 dollars). Since the Facility began operation in 1983, capital maintenance costs on the regulated portions of the MWC units (excluding Emission Guidelines retrofit costs and not including the proposed Projects) have been approximately $79 million (2005 dollars). Summing the historic capital costs with the capital cost of the proposed Projects, the total capital costs will be $143.3 million (2005 dollars). The total capital cost represents only 41.6% of the new construction cost for the regulated portions of the Facility's MWC units (2005 dollars). Therefore, the proposed Projects do not constitute a "reconstruction" of the Facility for purposes of the NSPS.

Since the Projects are neither a "modification" under 40 CFR § 60.14 nor a "reconstruction" under 40 CFR § 60.15, the Projects will not subject the Facility to the NSPS requirements in 40 CFR 60, Subpart Eb. Instead, the Facility will continue to comply with the requirements in the applicable Emission Guidelines (40 CFR 60, Subpart Cb), which are incorporated into the Facility's current Title V operating permit.

PSD Regulatory Applicability

As noted above, the Projects will not increase the design capacity of the Facility's three MWC units. The Projects also are not expected to cause a significant increase in the Facility's actual long-term emissions (i.e., tons per year or "tpy"). Consequently, the Projects are not subject to review under the Department's PSD program.

Since the Projects only involve minor changes to existing equipment and in-kind replacements, the County has used the methodology in Rule 62-210.370, F.A.C., to compute the Facility's "baseline actual emissions". Rule 62-210.200(34)(a), F.A.C., defines baseline actual emissions for steam electric generating units as "the average rate, in tons per year, at which the unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5-year period immediately preceding the date a complete permit application is received by the Department. The Department shall allow the use of a different time period upon a determination that it is more representative of normal source operation." A similar definition is contained in Rule 62-210.200(34)(b), F.A.C., for other types of existing emissions units.

Except as qualified below, the time period for determining the Facility's baseline actual emissions should begin on December 20, 2003 and extend to the present. The construction activities for the County's CRP Project commenced as of June 1, 2001. The CRP activities were completed on December 20, 2003. The time when the CRP Project was under construction (June 1, 2001 through December 20, 2003) is not representative of normal source operations because one or more MWC units were offline throughout the CRP Project.

The time period for determining the Facility's baseline actual emissions should not include September and October 2005. In September 2005, Units 2 and 3 experienced significant problems with their spray dryer absorbers, which led to a shutdown of all three MWC units. Following repairs, the Facility's MWC units were started again in late October 2005. Since these events were highly unusual and resulted in extended downtime for the MWC units, the unit availabilities for the months of September and October 2005 are not representative of normal operations. Therefore, September and October 2005 have been excluded from the computation of the Facility's baseline actual emissions.

The methodology for calculating baseline actual emissions detailed in Rule 62-210.370, F.A.C., specifies use of average values from all stack testing conducted during a five-year period encompassing the period over which the emissions are being calculated, provided all stack tests used shall represent the same operational and physical configuration of the unit. Although the CRP construction period occurred during the five year look-back period, the CRP Project did not change the "operational or physical configuration" of the Facility's MWC units. Therefore, the volumetric flows and non-CEM pollutant emission factors from all valid stack tests from calendar years 2002 through 2006 were used to compute the Facility's baseline actual emissions.

The County recognizes that the Projects may result in a nominal increase in annual emissions if there is an increase in the Facility's availability. To account for this possibility, the County has determined the Facility's projected actual emissions by adding the baseline actual emissions and an amount that is less than the PSD significant emissions rate, as defined in Rule 62-210.200(243), F.A.C. Given the baseline actual emissions and the PSD significant emissions rates, the Facility's future actual emissions will be limited to the "maximum future actual" emission levels shown in the following table. After the Projects are completed, actual emissions will be tracked and reported for five years, in compliance with the requirements in Rule 62-212.300(1)(e), F.A.C., to demonstrate that the Facility's actual emissions have not increased by an amount greater than any PSD significance emission rate.

SUMMARY OF PROJECTED ACTUAL EMISSIONS

Pollutant	Baseline Actual (ton/yr)	Maximum Future Actuals (ton/yr)	Net Increase (ton/yr)	PSD Significant Increase (ton/yr)	Significant?
Nitrogen Oxides	1538	1577	39	40	NO
Carbon Monoxide	133	172	39	40	NO
Sulfur Dioxide	78	117	39	40	NO
PM	10	34	24	25	NO
PM-10/MWC Metals	10	24	14	15	NO
Lead	0.04	0.54	0.5	0.6	NO
Hydrogen Fluoride	0.14	2.14	2	3	NO
MWC Organics	2.4E-06	5.4E-06	3.0E-06	3.5E-06	NO
MWC Acid Gases	154	193	39	40	NO

As required by FDEP rules, attached is a Responsible Official Certification and registered Professional Engineer Certification. Should you have any questions, please contact me at (727-464-7500) or Mr. M. Kirk Dunbar of HDR Engineering, Inc. at (763-591-5476).

Sincerely,

Robert J. Hauser, Jr., Director
Pinellas County Department of Solid Waste Operations

Attachments
cc: P. Talley - Pinellas County Utilities
K. Oswald – Pinellas County Utilities
D. Dee – Young van Assenderp
D. Castro - HDR Engineering, Inc.
K. Dunbar - HDR Engineering, Inc.