MALCOLM PIRNIE

INDEPENDENT ENVIRONMENTAL ENGINEERS, SCIENTISTS AND CONSULTANTS

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March 25, 2009

Ms. Trina Vielhauer
Chief, Bureay of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: North County Resource Recovery Facility
FDEP Title V Air Operation Permit (No. 0990234-010 AV) and FL-PSD 108
Revisions to Air Permit Application

File# 0990234-015-AC / PSD-FL-108H

Dear Ms. Vielhauer,

Enclosed please find revisions to the following sections of the above-referenced Air Permit Application:

- Section A: NSPS and PSD Applicability Review Report – Pages 5-1, 5-2, and 5-3 of the report, and page D-12 of Attachment D, Emissions Data for NCRRF Units, 2003-2007 and Summary Tables were revised.
- Section G: Supporting Documentation for Existing Permit Conditions Modification – Pages G-4, G-5, and G-6.

The revised application section pages that are enclosed fully replace the ones originally submitted. Four certified (4) copies of the Professional Engineer Certification Form have been included with this letter. If you have any questions or concerns regarding this application, please contact me at 239-332-1300.

Sincerely,

MALCOLM PIRNIE, INC.

Christopher C. Tilman, P.E.
Senior Consultant

Enclosures

3582052

C: J. Koerner (FDEP)
M. Halpin (FDEP Siting Office)
M. Hammond (SWA)
M. Bruner (SWA)
R. Schauer (SWA)
B. Worobel (SWA)
M. Morrison (SWA)
L. Richter (MP)
D. Dee (Young Van Assenderp)
D. Elias (RTP Environmental)

Professional Engineer Certification

1. Professional Engineer Name: **Christopher Tilman**
   Registration Number: **61903**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Malcolm Pirnie, Inc.**
   Street Address: **4315 Metro Parkway, Suite 520**
   City: **Fort Myers** State: **Florida** Zip Code: **33916**
3. Professional Engineer Telephone Numbers...
   Telephone: **(239) 332 - 1300** ext. Fax: **(239) 332 - 1789**
4. Professional Engineer E-mail Address: **ctilman@pirnie.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 3-25-09
Date

(seal) STATE OF FLORIDA PROFESSIONAL ENGINEER

* Attach any exception to certification statement.

5. PSD Considerations

5.1. PSD Applicability to Major Modifications

Under Florida's PSD program, the Facility is classified as a "*major stationary source*" because the Facility is a "*municipal incinerator capable of charging more than 250 tons of refuse per day*" and it has the potential to emit 100 tons per year or more of a PSD pollutant [See Rule 62-210.200(195), F.A.C]. A PSD permit must be obtained pursuant to Rule 62-212.400(1), F.A.C., prior to the commencement of construction of any "*major modification*" of an existing major stationary source. A major modification is defined in Rule 62-210.200(192), F.A.C., as "*any physical change in or change in the method of operation of a major stationary source that would result in a significant emissions increase of a PSD pollutant and a significant net emissions increase of that pollutant from the major stationary source.*"

Since the Project will involve the installation of new air pollution control equipment and other physical changes to the Facility, Malcolm Pirnie evaluated the Project to determine whether it will cause a significant net emissions increase of a PSD pollutant and thus constitute a major modification. Malcolm Pirnie's evaluation was conducted in compliance with Rule 62-212.400(2)(a)1, F.A.C., which establishes a "*Baseline Actual-to-Projected Actual Applicability Test for Modifications at Existing Emissions Units.*" Under this rule, "*a significant emissions increase of a PSD pollutant will occur if the difference between the projected actual emissions and the baseline actual emissions equals or exceeds the significant emissions rate for that pollutant.*" Accordingly, Malcolm Pirnie: (1) determined the Facility's baseline actual emissions; (2) determined the Facility's projected actual emissions; (3) subtracted the baseline actual emissions from the projected actual emissions; and (4) compared the difference to the significant emissions rate. This analysis was performed for each PSD pollutant emitted by the Facility.

5.2. Baseline Actual Emissions

Rule 62-210.200(36)(b), F.A.C., defines "*baseline actual emissions*" for an existing emissions unit, such as the Facility, to mean "*the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the [preceding] 10-year period.*" In this case, the Facility's actual emissions data from the most recent five years (calendar years 2003 to 2007) were evaluated and the average of each two calendar year period (24 consecutive months) was calculated for each PSD pollutant. As allowed in Rule 62-

210.200(36)(b)4, F.A.C., a different consecutive 24-month period can be used for each PSD pollutant.

For the purposes of this PSD applicability analysis, the baseline actual emissions were determined to be the average of the annual emissions during the twenty-four consecutive months of: (a) the 2003 - 2004 calendar years for particulate, MWC Metals, VOC, hydrogen fluoride, mercury, and MWC Organics; (b) the 2005 - 2006 calendar years for lead; and (c) the 2006 - 2007 calendar years for NO_x, CO, SO_2, and MWC Acid Gases. Operations during calendar years 2003-2007 are representative of normal operations at the Facility.

The annual actual emissions were determined by using stack test results, data from the Facility's continuous emissions monitors, and/or throughput data. The annual emissions data for 2003-2007 are provided in Attachment D to this analysis.

5.3. Net Emissions Increase

The Facility's baseline actual emissions and the significant emissions rates in Rule 62-210.200(280), F.A.C., are presented in Table 5-1, below. The Project will not cause a net emissions increase for any pollutant in an amount that is equal to or greater than the significant emissions rate for that pollutant.

After the Project is completed, the Project's actual annual emissions of all PSD pollutants are expected to be less than the baseline actual emissions because the Project will include new air pollution control systems and improved combustion control systems. Nonetheless, to ensure that this analysis is conservative (i.e., overestimates the Project's future emissions), the Project's projected actual emissions can be estimated for each PSD pollutant by adding (1) the baseline actual emissions and (2) a value slightly less than the significant emission rate, as defined in Rule 62-210.200(280), F.A.C. Therefore, any actual emission increase from the Project that may occur will be less than PSD significant levels.

5.4. PSD Applicability Determination for Major Modification

The net emissions increases associated with the Authority's proposed Project do not exceed the significant emissions rates in Rule 62-210.200(280), F.A.C., for any PSD pollutant emitted by the Facility. Therefore, the Project is not a major modification and the Project is not subject to the preconstruction review requirements in Rule 62-212.400, F.A.C. Nonetheless, the FDEP will amend or modify the Authority's existing air construction permit (No. FL-PSD 108) pursuant to Rule 62-212.300, F.A.C., and thereby require the Authority to monitor and report the Facility's emissions of PSD pollutants for at least five years after the completion of the Project. In this manner, the FDEP will

confirm that the Project will not cause a significant net emissions increase and is not a major modification.

Table 5-1.
North County Resource Recovery Facility Project Net Emissions PSD Applicability Determination (Unit 1 and 2 Combined)

	Tons per Year (TPY)		
	Baseline Actual Emissions [1]	PSD Significant Emissions Rate	Subject to PSD?
Particulate, PM	38.4	25	No
PM10/MWC Metals [2]	38.4	15	No
Nitrogen Oxides, NO_x	1,118.4	40	No
Carbon Monoxide, CO	335	100	No
Lead, Pb	0.8	0.6	No
Mercury, Hg	0.03	0.1	No
Hydrogen Fluoride, HF	1.86	3	No
Volatile Organic Compounds, VOC	27.3	40	No
Sulfur Dioxide, SO_2	262	40	No
MWC Organics, D/F	75.5E-06	3.5E-06	No
MWC Acid Gases (as SO_2+HCl) [3]	350	40	No

Notes:

1. Baseline Actual Emissions were developed from a review of 5 years of actual annual emissions (calendar years 2003 through 2007). The consecutive 24-month average of calendar years 2003 and 2004 was selected as the baseline for particulates, VOC, mercury, hydrogen fluoride, MWC Metals and MWC Organics, the average of calendar years 2005 and 2006 was selected for lead, and the average of calendar years 2006 and 2007 was selected for NO_x, CO, SO_2 and MWC Acid Gases (SO_2 and HCl).
2. The Facility does not have historical data for PM10 emissions. For this analysis, it has been assumed that PM10 emissions are equal to PM emissions.
3. A significant emissions rate (SER) has not been established in Rule 62-210.200(280) for HCl. However, the SER for MWC acid gases is based on the total of HCl and SO_2 emissions.

Table 2: Comparison of Baseline and Projected Actual Emissions

TABLE 2

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Comparison in Tons per Year (TPY) of
Current Permit Annual Equivalent and Baseline Actual Emissions (Two Year Average)

Pollutant	Current Permit Equivalent (TPY) (1)	PSD SER Net Emission Increase TPY	Baseline Actual Emissons (TPY) (2)			
			Average of 2003/04	Average of 2004/05	Average of 2005/06	Average of 2006/07
Particulates, PM	143	25	38	17	17	20
PM10/MWC Metals	143	15	38	17	17	20
Nitrogen Oxides, NOx	2495	40	1,282	1,204	1,155	1,271
Carbon Monoxide, CO	1207	100	306	303	290	335
Lead, Pb	2.3	0.60	0.590	0.725	0.800	0.670
Mercury, Hg	0.364	0.1	0.030	0.025	0.020	0.020
Beryllium, Be	<1	Not PSD	0.0003	0.0002	0.0002	0.0003
Hydrogen Fluoride, HF	12	3	1.86	1.77	1.26	0.810
Volatile Organic Compounds, VOC	58	40	27	13	2.05	1.95
Sulfur Dioxide, SO2	401	40	241	233	234	262
Hydrogen Chloride, HCl	246	N/A	82	69	65	88
MWC Organics	<1	3.50E-06	7.55E-05	7.20E-05	3.98E-05	2.46E-05
Cadmium, Cd	<1	Not PSD	0.013	0.011	0.054	0.061
MWC Acid Gas (as SO2+HCl)	647	40	322	302	300	350

Note :

1. The "Current Permit Equivalent (TPY)" is taken from the facility's existing Title V permit (0990234-010-AV) Table 1-1, for 1 boiler, multiplied by 2. For MWC Organics, Beryllium, and Cadmium, the equivalent annual emission per boiler is presented as <1 ton per year.

2 Annual Emissions obtained from five years (2003-2007) North County Resource Recovery Facility Annual Emissions Report, except for NOx. The NOx emissions were calculated using the average of the NOx concentrations recorded by the CEMS data and the average flowrate to be consistent with the approach used for both SOx and CO.

specified in permit condition O.2., which is consistent with the applicable Subpart Cb regulation and with recently issued permits for other MWC facilities.

III. Actual Emissions after Project Completion

After the Project is completed, the Project's actual annual emissions of all PSD pollutants are expected to be less than the baseline actual emissions because the Project will include new air pollution control systems and improved combustion control systems.

The refurbishment will result in reductions due to the additional control equipment. None of the pollutants will have a PSD significant increase. Table 1 summarizes the controls to be installed as part of the refurbishment project and their anticipated effect on the emissions for each pollutant.

Table 1.
NCRRF Refurbishment Control Technologies

Pollutant	Existing Controls	Controls after Proposed Refurbishment Project
Particulates /PM10	Emissions controlled using an ESP	• Emissions will be controlled with a Fabric Filter which is designed with a higher removal efficiency than the existing ESP to enhance particulate control. • The use of Lime injection with the Spray Dryer Absorber will result in additional particulate control due to caking on the surface of the fabric filter. • Installation of this Air Pollution Control (APC) equipment combination will ensure that short term emission rates are not increased due to the project.
NOx	Furnace Design includes Staged air Combustion	• Enhanced furnace design with staged air and the addition of Non Selective Catalytic Reduction. • Installation of this APC equipment will ensure that short term emission rates are not increased due to the project.
CO	Good Combustion Practices	• The proposed project will install up-to date combustion equipment and more complete combustion is anticipated. • Installation of this new combustion together with Good Combustion Practices will ensure that short term emission rates are not increased due to the project
VOC	Good Combustion	• The proposed project will install up-to date combustion equipment and more complete combustion

Pollutant	Existing Controls	Controls after Proposed Refurbishment Project
	Practices	is anticipated. • Installation of this new combustion together with Good Combustion Practices will ensure that short term emission rates are not increased due to the project
Lead	ESP	• Emissions controlled with a Fabric Filter, the use of Lime injection with the Spray Dryer Absorber will result in enhanced particulate control due to caking on the surface of the fabric filter. • Installation of this APC equipment combination will ensure that short term emission rates are not increased due to the project.
Mercury	ESP	• Emissions controlled by the use of Activated Carbon injection together with the use of a Fabric Filter. The use of Lime injection with the Spray Dryer Absorber will result in enhanced particulate control due to caking on the surface of the fabric filter. • Installation of this APC equipment combination will ensure that short term emission rates are not increased due to the project.
HFl	Spray Dryer Absorber	• Emissions controlled with a Fabric Filter, the use of Lime injection with the Spray Dryer Absorber will result in enhanced particulate and acid gas control due to caking on the surface of the fabric filter. • Installation of this APC equipment combination will ensure that short term emission rates are not increased due to the project.
SO2	Spray Dryer Absorber	• Emissions will continue to be controlled by the Spray Dryer absorber as now. The use of the fabric filter with the Spray Dryer Absorber may result in enhanced SO2 control due to caking on the surface of the fabric filter. • There is no change to the control equipment or exhaust flowrate and therefore short term emission rates are not increased due to the project.
MWC Organics	Good Combustion Practices	• The refurbishment will provide more uniform temperature in the boiler and repair any leakage in the ductwork to improve overall combustion efficiency. • The installation of up-to-date combustion equipment including over fire control in addition to good combustion practices will ensure that short term emission rates are not increased due to the project.
MWC Acids	Spray Dryer Absorber	• Emissions will continue to be controlled by the Spray Dryer absorber. The use of the fabric filter with the Spray Dryer Absorber may result in enhanced MWC Acids control due to caking on the surface of the

Pollutant	Existing Controls	Controls after Proposed Refurbishment Project
		fabric filter. • There is no change to the control equipment or exhaust flowrate and therefore short term emission rates are not increased due to the project.
Beryllium	ESP	• Emissions controlled with a Fabric Filter, the use of Lime injection with the Spray Dryer Absorber will result in enhanced particulate control due to caking on the surface of the fabric filter. • Installation of this APC equipment combination will ensure that short term emission rates are not increased due to the project.
Cadmium	ESP	• Emissions controlled with a Fabric Filter, the use of Lime injection with the Spray Dryer Absorber will result in enhanced particulate control due to caking on the surface of the fabric filter. • Installation of this APC equipment combination will ensure that short term emission rates are not increased due to the project.

MALCOLM PIRNIE

LETTER OF TRANSMITTAL

To: Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Date: March 25, 2009
Re: FDEP Title V Air Operation Permit (No. 0990234-010 AV) and Fl-PSD 108

RECEIVED
MAR 26 2009
BUREAU OF AIR REGULATION

Attention: Ms. Trina Vielhauer

We are sending you √ Enclosed Under separate cover via Mail Messenger, the following items:

shop drawings prints data sheets _____

specifications sketches brochures _____

Our action relative to items submitted for approval has been noted on the drawings.

COPIES	PREPARED BY	REFERENCE NO.	DESCRIPTION
4	Chris Tilman, P.E.	3582052	North County Resource Recovery Facility, FDEP Title V Air Operation Permit (No. 0999234-010 AV) and FL-PSD 108 Revisions to Air Permit Application

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Very truly yours,

Christopher C. Tilman, P.E.
Senior Consultant

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